Stanislav V. Voronin

ICONICITY
GLOTTOGENESIS
SEMIOSIS

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In memory of Ilya N. Gorelov
pioneer in linguistics

CONTENTS

От редакторов

Книга профессора Станислава Васильевича Воронина "Iconicity. Glottogenesis. Semiosis" выходит в свет уже посмертно. Рукопись книги была полностью подготовлена автором к печати. Редакторская работа состояла, по существу, лишь из включения в текст книги ссылок на место издания тех из статей автора, которые вышли из печати уже после смерти автора, но до публикации данной книги. Редакторы сочли правильным сохранить полностью текст авторского Предисловия, не меняя в нем ни времен глаголов, ни отсылки к спецкурсам, читавшимся автором в момент подготовки книги к печати.

Список диссертаций, защищенных под руководством автора, дополнен работами его учеников, защищенными уже после смерти автора. Список работ автора на русском языке также дополнен теми, которые опубликованы посмертно.

Редакторы выражают благодарность Н. Е. Зыковой за помощь в подготовке рукописи к печати.

Предисловие

Эта книга — учебное пособие к спецкурсам, читаемым автором на кафедре английской филологии филологического факультета Санкт-Петербургского университета.

— Актуальные проблемы современной лингвистики. Часть I (студенты — III курс);
— Элементы фоносемантики (студенты — V курс);
— Методологические проблемы лингвистики (аспиранты — II курс).

Недостаточная обеспеченность спецкурсов литературой, затрудняет освоение теоретически весьма сложного материала этих курсов. Отсюда, в частности, необходимость в появлении настоящей книги, первой в серии таких пособий.

Книга может быть использована также в рамках курсов по общему языкознанию, теории языкового знака и фонетике, читаемых в университетах и институтах этой страны и ряда сопредельных стран.

Здесь собраны воедино работы, в разные годы написанные автором на английском языке и опубликованные (либо принятые к печати) в различных источниках, чаще всего труднодоступных для учащихся.

В книге три основных раздела, которые касаются проблем иконичности, т. е. (звуко)изобразительности (II. Iconicity), происхождения языка (III. Glottogenesis), семиозиса (IV. Semiosis). Предваряются они разделом I. General; в завершение основного корпуса работы дается раздел V. Varia. В Приложении приводятся: список работ автора, могущих быть полезными слушателям указанных выше спецкурсов; список диссертаций, защищенных под руководством автора; список материалов Круглого стола по проблеме происхождения языка (в рамках XVI Международного конгресса лингвистов — Париж, июль 1997).

В течение долгого времени в господствующей парадигме лингвистики (и околингвистики) иконичность считалась недостойной внимания серьезного исследователя; занятия соответствующей тематикой было знаком принадлежности ученого "не тем" философским идеям; тематика иконичности была "узка" и "неактуальна". В действительности, однако, эта тематика оказалась настолько "узка",

что дала новую самостоятельную языковедческую науку — фоносемантику и новую теорию происхождения языка — иконическую. Эта тематика оказалась настолько "неактуальна", что дала веские основания показать, что унитарный принцип Фердинанда де Соссюра "языковой знак произволен" исчерпал себя как всеохватывающий основополагающий принцип (Р. Якобсон замечал, что "этот принцип сам оказывается произвольным"), — на смену ему мы выдвигаем новый, бинарный принцип: "языковой знак и не-произволен и произволен"². Последствия — чрезвычайно значимы: знакоязыковая картина мира утрачивает односторонность, приобретает необходимую полноту, взору исследователя открывается невидимая ранее "обратная сторона луны", в знак возвращается каузальность.

Критически рассматривая "принцип произвольности" де Соссюра, Эмиль Бенвенист отмечал: "Полагать отношение (между означающим и означаемым... — С. В.) произвольным — это для лингвиста способ уйти от данного вопроса..."; проблемой же фюсеи/тесеи "лингвист, возможно, в один прекрасный день сможет с пользой... заняться, но пока ее лучше оставить".³

В собранных здесь работах, написанных на рубеже XX и XXI веков, мы стремились не уходить от данного вопроса, не оставлять занятий проблемой, не перепоручать решения ее новому миллениуму.

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1 *Jakobson R.* Diskussion in: Zeichen und System der Sprache (Erfurt, 1959). Berlin, 1962. Bd. II. Рус. пер. см. в: *Звегинцев В. А.* История языкознания XIX—XX вв. в очерках и извлечениях. 3-е изд. М., 1965. ч.2. С. 395.

2 *Voronin S.* The Linguistic Sign: Both Non-Arbitrary and Arbitrary (A Rethink of Saussure's Principle One) // Fourteenth Meeting of the Language Origins Society. Abstracts. Tallahassee, 1998. P. 19–20; ср.: idem. The Sound / Sense Riddle: Evidence from Germanic Languages // Paradigmatic and Syntagmatic Investigations in Germanic Languages. Abstracts of the Conference. Vilnius, 1989. P. 109–110 — см. раздел IV настоящей книги; ср. также *Воронин С. В.* Знак не-произволен и произволен: новый принцип на смену принципу Соссюра // Актуальные проблемы психологии, этнопсихолингвистики и фоносемантики: Всерос. конф. (Пенза, 8—11 декабря 1999 г.): Материалы. М., 1999. С. 128—130.

3 *Benveniste E.* Nature du signe linguistique // Acta Linguistica (Copenhagen). T. 1. 1939. Рус. пер. см. в: *Бенвенист Э.* Общая лингвистика. М., 1974. С. 93.

I. GENERAL

1. *FUNDAMENTALS OF PHONOSEMANTICS*

(Summary)

Воронин С. В. Основы фоносемантики.
Л.: Изд-во Ленинградского ун-та, 1982. 244 с.

The emergence of new fields of scholarly inquiry, as well as new branches of science, is the hallmark of our age, and linguistics is no exception here. Important facts in the field of primary motivation are knocking, in an ever increasing number, at the researcher's door clamouring for reappraisal and explanation. Lop-sided and compartmentalized attempts at explaining the facts in terms of either phonetics or semantics have largely proved fruitless. An integrative approach is therefore indicated, and phonosemantics is, the author believes, the answer.

Phonosemantics deals with the vast domain of primary motivation (as instanced by onomatopoeia and sound symbolism). This book is an introduction to the new emerging science of phonosemantics.

2. *PHONOSEMANTIC IDEAS IN WESTERN LINGUISTICS*

(Sketches and Excerpts)

(Summary)

Воронин С. В. Фоносемантические идеи в зарубежном языкознании: (Очерки и извлечения). Л.: Изд-во Ленингр. ун-та, 1990. 200 с.

The manual is a first attempt in presenting a collection of excerpts from writings by Western authors dealing with Onomatopoeia and Sound Symbolism, with an overview by the present author highlighting a number of important issues in linguistic iconism.

The past few years have seen the introduction, at Leningrad University and a number of other universities, of lecture courses on *Fundamentals of Phonosemantics*; *The Linguistic Sign: Problems of Motivation; Phonosemantic Typology; Expressivism and Phonosemantics.*

The relevant literature is largely to be found in foreign publications not readily accessible to students in this country. It was thus thought expedient to bring excerpts from some of these publications under one cover, prefixed

with a brief historical outline and supplied with test questions for the students.

This book is a first step, comprising a first-ever collection of existing Russian-language translations of Western authors touching upon phonosemantic subjects (W. von Humboldt, Ch. Bally, R. Jakobson, H. Paul, W. Wundt, I. Iordan, D. Westermann, V. Skalička, L. Bloomfield, M. Grammont, and others). Existing translations, though giving a many-sided view of these subjects, are a far cry from presenting a comprehensive picture, for they had been chiefly made to discuss problems like the nature of the linguistic sign, the origin of language, child language, expressive speech, and poetics — and not onomatopoeia and sound symbolism *per se*.

The next step would presumably be to commission and collect translations of important works on linguistic iconism *sui generis* — by O. Jespersen, E. Sapir, R. Brown, H. Marchand, R. Stopa, A. Graur, Y. Malkiel, I. Fonagy, S. Ertel, J.-M. Peterfalvi, F. Dogana, R. Wescott, J. Ohala, D. Slobin, E. Fischer-Jörgensen, R. A. W. Bladon and other scholars.

In compiling this book, the author's thanks are due to L. Herzenberg, E. Khomyakova, O. Brodovich, E. Stepanova.

3. ON R. WESCOTT'S GETTING IT TOGETHER: NOTES COMPLIMENTARY AND COMPLEMENTARY

Introductory

This is not a review in the traditional sense of the term — it is more a response evoked by a kindred (if, technically, trans-Atlantic) spirit writing on subjects scholarly and academic; this response is in the form of a few marginal notes.

Concluding his treatise "The Divine Animal" (1969), Roger Wescott noted: "Books end, but life does not. The voyage that began the day this volume found its title has not terminated. It has only reached a shore... Before us lies a sea, inviting but unplumbed, whose waters lap at us and call us to set sail". Setting sail from the largely dissective, in-boundary, analyzing Divine Animal, Professor Wescott is now casting anchor at new shores — supremely cross-sectional, transboundary, synthesizing. R. Wescott typically sets greater store by the (re)sounding word than by the manuscribbled — and subsequently published — word. He is absolutely right when it is a case of the (perforce) limited number of the privileged *hic et nunc* hearers. But what of the practically unlimited numbers of the

underprivileged that are neither *hic* nor *nunc* — those whose only chance is the published word? Now, thanks to the University of Tennessee (which brought out the book), the eager multitudinous reader, too, will have his intellectual feast.

Amid the good things of life, the keen enjoyment whereof is known as *joie de vivre*, the gratification of savouring Wescott's new book is a joy in itself (should I dub this *joie du livre?*).

On Matters Linguistic

Discussing language and the study of language, the author writes: "Linguistics is a paradoxical field of investigation in that it is, in comparison with other disciplines, at once exceptionally narrow and exceptionally broad. It is narrow in the sense that it is precise, analytical, and predominantly quantitative, in many respects more like mathematics or chemistry than like the humanistic disciplines with which it is usually classified. Yet it is broad in the sense that, as the pre-eminently verbal discipline, it bears on every other discipline which is partially or wholly verbal in its mode of presentation — which is to say, all other disciplines" (p. 100). Reversing from the plane of descriptive metalanguage to that of the essential subject matter of various disciplines, one would welcome here a mini-discussion of our discipline's cross-disciplinary ties and/or essential similarities with other branches of knowledge, e. g. neurology (notably the implications of cerebral asymmetry or biosemiotics or musicology). In her LAGB Silver Jubilee (1984) Lecture Prof. Vicki Fromkin cites Edward Sapir: "...linguistics has also that profoundly serene and satisfying quality which inheres in mathematics and in music and which may be described as the creation out of simple elements of a self-contained universe of forms. Linguistics has neither the sweep nor the instrumental power of mathematics, nor has it the universal aesthetic appeal of music. But under its crabbed, technical appearance there lies hidden the same classical spirit, the same freedom in restraint which animates mathematics and music at their purest".

But to come back to language problems proper: undeterred by conservative linguistic opinion (dominant and domineering), R. Wescott in his cross-border migrations daringly picks up that controversial topic, Icons and Symbols (i. e. signs which resemble what they refer to versus signs whose relation to their referents is arbitrary). The point is that conservative linguistic opinion misguidedly persists in treating the study of Iconism as belonging to what in R. Wescott's terms would be anomalistics — "the

systematic study of all phenomena that fall to fit the picture of reality provided for us by common sense or by the established sciences" (p. 38). There is a peculiar twist to this: iconism has always been anomalistic for the established sciences, though hardly ever for the common sense of the speaker/hearer laity (or for the phonaesthetic sense of the poet). However, the science of phonosemantics — not yet fully established but gaining its foothold — has now proved phonic iconism (onomatopoeia and sound symbolism) to be no meager spattering of anomalies, but a full-blown if chiefly covert normality. Breaking through the barriers of precon-ception, special in-depth research demonstrates that the majority of iconic words are capable of developing the most abstract meanings and of being highly productive in word-formation; their scope is shown to be much broader; their number is demonstrated to be far in excess of earlier esti-mates (see, *inter alia*, my book Osnovy fonosemantiki, Leningrad, 1982 — *Fundamentals of Phonosemantics*, in Russian). As R.Wescott notes, "Language... is replete with iconicity" (p. III). Indisputably operational within certain limits, Ferdinand de Saussure's principle of the *signe arbitraire* had been hypergeneralized in post-Saussurean times, only to become an absolute that ignored a most substantial element in the lexis, distorting the entire linguistic picture of the world.

According to Thomas Kuhn (*The Structure of Scientific Revolutions*), science follows a three-fold process of paradigmatic development, expansion, and refinement — a paradigm being a set of assumptions about theory and procedure shared by a majority of the members of a scientific community (see discussion in Wescott's volume, pp. 36–38). Having run its course, a paradigm is, in most cases, replaced by a new paradigm, based on a different set of assumptions. "This replacement is referred to by Kuhn (and others) as a scientific revolution. One of the primary factors precipitating a scientific revolution of this kind is the gradual accumulation, in and around a paradigm, of anomalies — data that fail to fit that paradigm but provide the raw material for a new and different paradigm" (p. 37).

But this is precisely the type of situation building up in the theory of the linguistic sign. Without being presumptuous, I make so bold as to come up with the following statement of fact, and prediction:

Linguistics is on the threshold of a scientific revolution: the solo Arbitrary Sign Paradigm will, in the foreseeable future, be superseded by the dual Nonarbitrary-cum-Arbitrary Sign Paradigm.

The semiotic system of language today turns out to be a contradictory unity of nonarbitrary (natural, primary, emotional, expressive, iconic) and arbitrary (conventional, secondary, "rational", noniconic) elements

complementing each other (cf. Niels Bohr's Complementarity Principle) — as I see it now, in line with the Getting It Together approach that was to come. Depending on the evolution period, and tasks performed, one of the two types of elements comes to the fore.

On Creativity

R. Wescott's togethering activity is linked to the (re)searcher's creative capacity for bringing together seemingly disparate phenomena. Cf. Prof. B. Bailyn's astute remark on history: "That recovery of a hitherto sub-merged world, and the capacity to conceive of it as a whole, form the essence of historical creativity..." (Prof. Bernard Bailyn of Harvard, serving in 1985 at Washington University, St. Louis, as a Lewin Distinguished Visiting Professor, in his lecture on History and the Creative Imagination); this is true not only for history.

One of R. Wescott's aphorisms (or is it apo(ph)thegms?) reads as follows: "Work produces. But only play creates" (p. 140). This work-belittling maxim is disproved by the author's own work: it has not simply produced the book — it has created it. Work and Play go hand in hand, as do Productivity and Creativity.

On Gravity and Humor

Sages of yore held that humor is the only test of gravity. Humor may not be the only test of scholarly gravity, but it certainly is the most potent test. For only true gravity can fortitudinously withstand the devastating near-omnipotence of (self-)jest and humor. Special mention should be made here of Roger Wescott's keen Wescottish sense of humor — of the variety I term "linguistic" (i. e. immediately bearing on the word, not the situation). He loves to play with words (special terms, too), aptly extracting hidden meanings — more often than not, etymological meanings. Incidentally, etymology stands R. Wescott in good stead not only when he is at play: his deep-down etymological sorties bring in a wealth of revealing evidence.

The motif of play and playfulness is highlighted — and justifiably so — in the author's remarks on Johan Huisinga's book *Homo Ludens*, "Man at Play"; "...Huizinga makes the point that a great deal of what we consider our highest cultural achievement is sportive in nature. This is equally true whether we think in terms of playing Hamlet or of playing first violin. Either way, the playfulness involved is far from trivial. Even Isaac Newton, looking back on his long and productive career, compared himself to a child

on the beach, gathering pebbles and collecting shells while the great ocean of knowledge lay unplumbed beyond him" (p. 5).

To venture a sententious phrase: Play is no joke — it is dead serious: And play, as Wescott rightly tells us, "accompanies life. Thus play as well as humor, is also a concomitant of the cognitive drive (Abraham Maslow's term), of the human thirst for knowledge (see p. 27), of that ever-present urge to know what is on the other side of the fence.

In my lectures on Phonosemantics I frequently cite A. V. Hill (*Muscular Movement in Man*): "In 1924...I gave a lecture at the Franklin Institute in Philadelphia on "The Mechanism of the Muscle"... I told the audience what I could, in the brief space of an hour, about the inner working of that beautiful and mysterious machine. ...when questions were invited, I was asked, rather indignantly, by an elderly gentleman, what use I supposed all these investigations were... For a moment or so I stumblingly tried to explain that practical results might be expected... But to prove to an indignant questioner on the spur of the moment that the work I do was useful seemed a thankless task and I gave it up. I turned to him with a smile and finished, "to tell you the truth, we don't do it because it is useful but because it's amusing..." Prolonged and hearty applause greeted my confession. My questioner retired shaking his head over my wickedness, and the newspapers next day, with obvious approval, came out with headlines "Scientist Does It Because It's Amusing". And if that is not the best reason why a scientist should do his work I want to know what is".

Embarking, at this point, on a Wescottesque etymological sortie, let us consider the verbs *to amuse* (cf. A. V. Hill's amusing) and *to muse* (both, I should note, sound-symbolic in origin). *Webster's New International Dictionary* (Second Edition) yields, *inter alia*, the following: <u>Amuse</u> v. of amuser "to cause to muse", prop. "to cause the mouth to open", from LL musus "muzzle, mouth", 1. "to occupy the attention of, to plunge in deep thought", obs... 4. "to entertain in a pleasant manner; to stir with mirthful emotions"; see muse v. (cf. amusement, in the sense "the state of being amused, as by something humorous"; <u>Muse</u> v. OF muser "to loiter, trifle, to muse, reflect", prob. orig. "to open the mouth", from ML musus "muzzle", 1. "to think closely; to meditate"; 2. "to be so occupied in study or contemplation as not to observe passing scenes"; 3. "to wonder or marvel"; 4. "to gaze wonderingly or meditatively". Walter Skeat (in his Concise Etymological Dictionary) supplies this: Muse "to meditate" — OF muse "the mouth, muzzle"; see muzzle; the image is that of a dog sniffing the air when in doubt as to the scent; cf. Ital. musare "to muse", also "to gape

about", "to hold one's muzzle or snout in the air", Florio, from Ital. muso "snout".

Humor and scholarly gravity (see above: humor as a test of gravity) go together. Theirs is a happy — and natural — marriage. Basic evidence: Wescott's cross-disciplinarian work. Supplementary evidence: the above cross-boundary discussion of that chain of phenomena/notions linked together, in bizarre interplay, by natural prototypicality: Humor — Play — Curiosity — Cognitive Drive — Musing — Amusement — Wondering — Gravity, Deep Thought, Contemplation, Meditation.

On Scholarly Tranquility

Which latter (meditation) brings us to our next topic. Any contemporary academic will dearly take to heart R. Wescott's spirited soliloquy on Academic Frenzy and Scholarly Tranquility: "... the Greek word *skholé*, from which we derive the term 'scholar', meant leisure. Yet contemporary schools, universities, and research institutes are centers of hectic activity, in which students, teachers, and administrators are subjected to a seemingly endless round of meetings and memoranda" (p. 29); "The ideal atmosphere for both learning and teaching is, of course, one of intellectual calm, in which the contemplative mind is free to range at will over an unbounded cognitive landscape" (p. 30); the author also recalls "the insistence, on the part of Zen masters and other advocates of meditation, that daily business clutters the mind, which needs periodically to be emptied of superfluities" (p. 30-31). And I would recall here the little secluded and walled-in garden enclosures in Oxford, where the academic, unhurried and unharried (at least for a time) has the wherewithal for consummate meditative detachment and peace.

Cf. Gerard Manley Hopkins' haunting paean:

When will you ever, Peace, wild wooddove, shy wings shut,
Your round me roaming end, and under be my boughs?...
...And when Peace here does house
He comes with work to do, he does not come to coo,
He comes to brood and sit.

It is this peace that is a *sine qua non* for "thinking big" and for achieving the perspective that is, in R. Wescott's words (p. 23), "the ripest fruit of scholarly detachment". A rare pleasure it is, to eke out the leisure to read and digest Wescott's book — this working leisure is forsooth a pleasure.

A Critical Note

To yield a more cogent picture, some of the links need further immediate elaboration — especially in bridging the Humanities / Sciences gap. No easy task that, to be sure: cf. the only partial success of physics, even after decades of brainstorming effort, in linking various types of fundamental interaction — strong, weak, electromagnetic and gravitational.

Despite its approaches from various angles, Chapter 3 (pp. 51 ff) failed to convince me that Evolution is indeed the Myth of Science (though of course one cannot rule out the slim chance that it might have, had the author supplemented the witty concluding paragraph by a straightforward summary of arguments in favor of his basic postulate).

In the section Our Evolutionary Prospects (Chapter 6: Frontiers of Futurism) the author writes: "At some stage in our evolution, I would surmise, conscience served the necessary function of inhibiting the most destructive forms of interpersonal aggression. But ultimately it too, I feel, must yield to more spontaneously positive motivations" (p. 136). This is indeed very plausible. However, in dealing with the first part of the contention one should be aware of the following: it is not only in the interpersonal realm that aggression requires inhibition — take cruelty to animals or phone-booth vandalism or, for that matter, water / air pollution.

I cannot persuade myself to agree with the author's belief that it is "justifiable" to treat linguistics as "a branch of biology" (p. 114).

It would seem that the different argumentatory trends in the book, widely ranging, require a final unifying statement — explicitly getting the author's arguments together.

To complete this section of my marginalia, a cautionary note. Chapter 2 (Anomalies of Scholarship) bears the apothegm "Hang loose! The thought that liberates you today may imprison you tomorrow". I would add: But not so loose as to lose the thought — or let it wander unchaperoned.

Coda

"There is art in every science and science in every art" (p.1); this book is undoubtedly twin-engined: it is a work of science and a work of art — very human, humane and humanistic. For the humanities, the world is not coming to an end; we must suffer along and learn to cope. Coping is going to be easier now that we have an inkling of how to link the humanities (to one another and to the sciences) — the inkling being of Prof. R. Wescott's making.

This is an in-depth study: ingenious, innovative and inventive. The latter term I employ here in a literal sense, meaning the Wescottesque of apt new coinages (like *anomalistics* or *HUM-bums* or *zoozification*).

Abandoning academese and reverting to blurbese, I would end by saying: "If you've got It, get it right — Get It Together". Roger Williams Wescott, First Holder of the American National Bank Chair of Excellence in the Humanities at the University of Tennessee, 1989–1990, and Professor of Anthropology and Linguistics at Drew University, has indeed gotten it together — admirably.

References

Wescott, Roger W. *Getting It Together: Linking the Humanities to One Another and to the Sciences.* Chattanooga, TN: Univ. of Tennessee, 1990.

4. REVIEW OF BULAT GALEYEV'S
MAN — ART — TECHNOLOGY:
THE PROBLEM OF SYNESTHESIA IN ART

Kazan: Kazan University Press, 1987. 264 p.

LIGHT-MUSIC IN THE SYSTEM OF THE ARTS

Kazan: Kazan Conservatory, 1991. 88 p.

Leonardo. Journal of the International Society for the Arts, Science and Technology. 1994. Vol. 27. № 5. P. 449–450.

Over the past two decades in the former Soviet Union, Bulat Galeyev has become known as the leading authority (I do not hesitate to use the definite article here) on synesthesia and light-music (the latter also known variously as audio-music, and lumina music). His numerous publications on these — and related — subjects have recently been supplemented by two books — the monograph *Man — Art — Technology* and the manual *Light-Music in the System of the Arts.*

The 1987 monograph provides an exhaustive study of synesthesia in art. The scientific and technological revolution of our age, with its technicalization of culture, brings to the fore the intrinsic value of the human factor in new "techno-artistic" areas of creativity — such as cinema, video, and light-music (which is not to say that synesthesia had previously been overlooked by scholars of belles-lettres, where synesthesia was manifested in the artistic word). The author gives a detailed critique (at times hypercritical) of the existing schools of thought regarding the nature of synesthesia and its psychological basis.

The book admirably outlines the full scope and significance of synesthesia. I would add, however, that not only is the phenomenon conducive to the review of this fields, such as, for instance, sound symbolism (of which Galeyev is fully aware: see p. 239) — but the reverse is also true. Take, for example, the other (seemingly extraneous) notion of synesthesia (a derivative of phonosemantic studies), highlighting the inexorable presence of the emotive factor in any synesthetic transfer (S. V. Voronin, "Sinestezija i zvukosimvolism", Tezisy VI Vsesojuznogo simpoziuma po psixolingvistike i teorii kommunikacii [Moscow, 1978]). Or, consider the new comprehensive linguo-psycho-physiological definition of synesthesis (M. J. Sabanadze, "Sinestezija v podjazyke muzyko-vedenija", thesis paper, the abstract of which is included in the brochure Avtoref. kand. diss. [Leningrad, 1987]). The latter appeared, incidentally, too late for the 1987 monograph. It could have been taken into account for the 1991 manual, however.

Galeyev issues a timely interdisciplinary call to psychologists, to specialists in esthetics and art, to philosophers and to linguists — an appeal to join forces in probing the essentially interdisciplinary nature of sensory interaction, notably with regard to art. As to the value of the interdisciplinary scholarly probe, compare the following: "Interdisciplinary study is fusive in nature. It merges neighboring disciplines and ideally achieves a synergistic effect through the merger." (Roger W. Wescott, Getting It Together: Linking the Humanities to One Another and to the Sciences [Chattanooga, TN: Univ. of Tennessee, 1990, p. 16].)

Reflecting the holistic features of reality, synesthesia is shown to be a complex form of sensory interaction. This phenomenon is considered an essential and fundamental property of artistic thinking. In the evolution of humanity, art has indeed been the primary source of social praxis wherein human synesthetic faculties were formed and fostered — hence, according to Galeyev, the crucial role of esthetics in getting to the core of synesthesia as a psychological entity. A new assessment of art and literature is certainly in order, if we regard the "synesthetic fund" of every consecutive cultural state as socially inheriting the fund of earlier stages. Of particular interest for the philologist is the author's well-grounded conclusion that language and literature are reliable gauges of the dynamics of the "synesthetic fund".

Also discussed are the various manifestations of synesthesia in literature (including poetry) — and functions — of (painting, music, architecture). The results are instrumental in elaborating upon the principles of audio-visual polyphonic synthesis.

The author's systemic approach enables him to delineate a sound-synesthesia-oriented classification of the arts (see especially p. 191). The basis for this is his comprehensive and detailed classification of various definitions of synesthesia (pp. 92–107) — undoubtedly a pioneering achievement and a breakthrough to fathoming the exact nature of the mystical phenomenon, synesthesia.

The book ends with an outline of possible applications — both theoretical and practical — of the author's ideas and methods.

The 1991 manual Light-Music in the System of Arts deals with the principles of classifying the arts, including newly emerging arts linked closely with modern audio-visual technology. In the author's classification, audio-visual music (light-music) adjoins the gestural arts and the dance. It is shown that light-music is, in essence and origin, the art of "instrumental luminous choreography". Historical analysis demonstrates that, on the way to its recognition, this ideal had to overcome numerous obstacles — chiefly of the mechanistic natural-philosophy variety, based on false analogies of the "spectrum–octave" type.

The roots of "musical vision" lie deep in the psychology of human perception; hence the theme of synesthesia in the book. Touched upon are the nature of this phenomenon and its function in art. Discussed further is the fundamental synesthetic element in the pioneering audio-visual musical experiments of N. Rimsky-Korsakov (Mlada, 1890), A. Scriabin (Prometheus, 1910) and W. Kandinsky (Yellow Sound, 1911).

Discarding the trivial idea of simply using light to accompany music, light-musicians arrive at the concept of audio-visual polyphony. A substantial portion of the manual is devoted to the principles of light-music synthesis — both theoretical and practical.

The student is provided with a helpful bibliographical list. To sum up: this is indeed a very useful manual for students of music and — on a wider scale — for all who appreciate the music of the spheres and audio-visual music.

II. ICONICITY

1. ENGLISH ONOMATOPES, A PHONOSEMANTIC CLASSIFICATION

(Summary)

Excerpt 1

In the gamut of challenging problems that may be qualified as *terra incognita* in the domain of the primary-motivated linguistic sign, the types and root structure of onomatopoeic words occupy a prominent position. "Stringent scholars (to quote Y. Malkiel: 1962, N 2, p. 198–219) have tended to shirk, side-track, or postpone" the discussion of onomatopoeia (together with sound symbolism and expressivism), on account of its being "fraught with the greatest number of intrinsic difficulties (sometimes called 'intangibles'), increased by a heavy accumulation of haziness on the part of generations of analysts". To postpone indefinitely the discussion of vital issues — however controversial — would surely be unwise. Hence this book, a contribution to the theory of the motivated sign and to linguistic taxonomy.

The general layout is as follows: Preface; Introduction; Chapter I — A Classification of Sound; Chapter II — A Phonosemantic Classification of English Onomatopes; Chapter III — The 'Onomatope / Referent' Correlation; Conclusions.

English onomatopes (i. e. words designating "external" sounds like *tick, toot, buzz, creak, bang*) are shown to constitute five classes: three classes (Instants, Continuants, and Frequentatives) designating, respectively, pulse-like sounds, tone or noise of appreciable duration, and vibratory dissonance-like sounds, and two classes combining features of the first three. The classes fall into 18 types comprising 30 models, or structures (the latter covering over 90 per cent of the material). The essentially universal (psycho)acoustics-based classification (the first attempt ever) has evolved as a generalization of the structural-semantic features of 700 simple-stem onomatopes (the principal English types being borne out by some 640 sound-imitative words culled from more than 70 languages).

Here are examples of onomatopes belonging to the 18 types:

(I) *tap, tick, clap, plop, chop*;

(II) *hoot, toot, beep, bleep*;

(III) *hiss, swish, hush* (as in the acoustic term 'hushing noise');

(IV) *buzz* ('a sibilant sound produced by very fast irregular pulsations; a sibilant hum' — Webster's Third New International Dictionary), *whiz(z)* ('a "singing" or rather "sizzing" noise on the wire' — Oxford English Dictionary);

(V) *crack, rap, rip, crick, jerk*;

(VI) *chirr, jar, br-r-* (a *hapax legomenon* rendering the vibrating sound of a drill or the churring of cicadas);

(VII) *creak, scroop*

(VIII) *whir(r)* 'to hurry along with a rushing or vibratory sound', *flurr* 'to fly with whirring or fluttering wings' (cf. *flurry* 'gust, squall; sudden rush of birds'), *rash* (in: "The strident rash-whish of the sharpening strake on the scythe");

(IX) *frizz* 'to fry with sputtering sound, cook with sizzling noise';

(X) *tink* 'the metallic sound with very short resonance emitted e. g. by a cracked bell struck with something light'; *ling* 'sound emitted e. g. by a small bell as the result of a single stroke';

(XI) *clash* 'the loud sound of collision made by a very heavy blow, the first impact of which is hard, but followed by a confused sound of many lighter impacts' (Oxford English Dictionary: "*clash* suggests an action produced in the same way as a *clap* or *clack*, which, instead of abruptly ending like these, results in a mingled mass of smashing or rustling sounds");

(XII) *whack, flap, whit* 'the sound of a bullet whistling through the air and striking something hard';

(XIII) *zip* 'high-pitched, abruptly terminating buzzing (as of a mosquito) or humming (as of a bullet) sound';

(XIV) *thump* 'to pound, producing a somewhat dull sound (not as dull as a thud), to thrash with a whip'; *whing* 'an onomatopoeia expressing a high-pitched ringing sound caused by a swishing movement';

(XV) *zonk* 'an imitation of a whizzing and ringing sound, abruptly terminated; *zing* 'to whizz by with a humming noise (as of a bullet)';

(XVI) *crink* 'a sound in which cricking and chinking blend'; *ring*; *brrumm* 'an imitation of the hollow rapping sound of a drum-beat';

(XVII) *crash* 'to make a loud confused noise as of many hard bodies dashing and breaking together';

(XVIII) *flirt* 'to throw with a jerk; rap; flick; to practice coquetry'.

Note that tonal nonpulses comprising (or forming part of) the sound signified by types X, XIV, XV, XVI fall into two subtypes; (a) "short" (i. e. those of shorter duration, e. g. *ting*). The types differ qualitatively, whereas differences between the subtypes of a given type are only quantitative.

Following are two illustrations (slightly simplified) of models (structures, patterns) — belonging to type I and type X (subtype (b)).

Type 1: Instants. These onomatopes designate pulses (the pulse is an instant sound like a tap or click). Cf. *tap, tick, dod, pip, clap, click, glug, plop, chop...*

In terms of phonotypes[4], the general pattern (model 1) emerging for Instants is as follows (PLOS — plosive, AFFR — affricate, VŎC — short vowel, SON — sonorant):

$$\frac{\text{PLOS} \,(+ \text{SON}^{\text{LAT/NAS}})}{\text{AFFR}} + \text{VŎC} + \text{PLOS}.$$

Type X (subtype (b)): Tonal Postpulse Instants-Continuants. These designate a complex sound — basically the combination of a pulse followed by a resonant tone (e. g. the ringing sound produced by a bell or a string). Cf: *ting, tang, tong, ping, bang, bing, twang, clang, clam, chink...*

In terms of phonotypes, the general pattern (model 18) for Tonal Postpulse Instants-Continuants (subtype (b)) is this:

$$\frac{\text{PLOS} \,(+ \text{SON}^{\text{LAT/LAB}})}{\text{AFFR}} + \text{VŎC} + \text{SON}^{\text{NAS}}.$$

Systemic investigation unambiguously points to the existence of an appreciably strict correlation between structural elements of the onomatopoeic root and those of the sound signified. It is demonstrated that (contrary to the widespread belief) it is not the phoneme (speech sound) as such but the phonotype — the acoustic phonetic type (e. g. plosive, voiceless fricative) that is of primary importance in discussing onomatopoeic root structure. Practically every single phoneme in the root possesses meaning and clear-cut sound-imitative functions (e. g. plosives render pulse-like sounds, as in *tap, click*; voiceless fricatives reflect pure

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4 On the notion of the phonotype (phonemotype) see below, Sects. II.2, IV.6.

noise, as in *hiss, swish*). Further evidence is thus produced in favor of J. R. Firth's and L. Bloomfield's revolutionary idea of the structural-semantic divisibility of the onomatopoeic root.

The conclusion is arrived at that onomatopes are not haphazard miscellany of words — they form a patently rigorous system within the framework of the English lexis.

The (psycho)acoustics-based phonosemantic classification succeeds in pinpointing that ever elusive (for many, indeed, non-existent) sound-sense link. Not unlike the periodic system of elements, the proposed taxonomy possesses significant predictory and heuristic potential. (...)

It is hoped that this book would stimulate further probes eventuating in a comprehensive theory of English onomatopoeia and the non-arbitrary linguistic sign.

2. THE PHONEMOTYPE: A NEW LINGUISTIC NOTION (IMPLICATIONS FOR TYPOLOGICAL PHONOSEMANTICS)

ABSTRACT

The problem of descriptive units is of paramount importance for any typology. Isomorphism (similarity), which prevails over allomorphism (dissimilarity) in the iconic (onomatopoeic and sound-symbolic) words of any two (unrelated) languages, cannot, as a rule, be revealed on the level of individual phonemes. The paper is a first report on the implications for typological-phonosemantics of a notion introduced earlier by the author — the notion of the phonemotype (i. e., a "semantically loaded" acoustic or articulatory type of phonemes). The phonemotype as a unit is shown to possess a number of unique features.

The emergence of the new linguistic science, phonosemantics (dealing with the iconic, i. e., onomatopoeic and sounds-symbolic, system of language), necessitates the elaboration of typological phonosemantics, or a phonosemantic typology of the world's languages [1]. Linguistic iconism is an absolute language universal, and the scope of the iconic system in language is, contrary to popular sentiment, extremely great [2]. This system does not include exclusively words that are felt to possess a phonetically motivated connection between sound and sense — it also embraces all those countless words where in the course of historical development, this

connection has become obscured but where it can be uncovered with the aid of "deep down" etymological analysis buttressed by "external" typological data.

Invading the realm of iconicity, the researcher, like Alice in Wonderland, probes a world where many things are "so different" and "so unlike", prepared to relinquish some of the hallowed age-long linguistic shibboleths and willing to work out a new set of values, the explorer presses on in his quest.

Phonetic (phonological) typology and semantic typology are venues for the study of sound and, disconnectedly, sense. The blazing gap is there — to be bridged by phonosemantic typology exploring the sound / sense connection in the lexis of different — primarily unrelated — languages.

The problem of descriptive units is of paramount importance for any typology. Isomorphism (similarity), which prevails over allomorphism (dissimilarity) in the iconic words of any two (unrelated) languages, cannot, as a rule, be revealed on the level of individual phonemes (instances like the English *ting* and Indonesian *ting*, both signifying the sound of a small bell, are very infrequent). This paper is a first report on the implications for typological phonosemantics of a notion introduced earlier by the author — the notion of the phonemotype (i. a. "semantically loaded" acoustic or articulatory type of phonemes) [3].

Taking by way of illustration a number of onomatopoeic groupings, I shall attempt to retrace the steps in arriving at the notion of the phonemotype in phonosemantic typology.

Illustration 1: Instants [4]. These onomatopes designate pulses (the pulse is an instant sound like a tap, tick, click or knock). Cf. examples from four languages (of diverse language families), viz. English (Eng.), Estonian (Est.), Bashkir (B.), Indonesian (Indon.) [5]. Eng. *tap, tick, pat, pop, click, clop-clop, chop*: Est. *tikk-takk-tikk-takk* (of a clock), *kop-kop* — imitative of tapping on the door, *klobisema* — to go clop-clop (of wooden shoes), *plogisema* — to click; chatter (of teeth); B. *tap* — instantaneous sound of hard object falling to the ground, *dök* — dull knock or tap (on the door), *gup* — sound of object striking wood, *kelt-kelt* — to tick; Indon. *tuk* — imitation of knocking, *tak* — sound of a stone striking wood, *tuk* — imitative of an object falling on a soft surface, *bak* — a pat; sound of fruit falling on the ground, *lepik* — sound of matchbox falling on the floor. Listing the initial consonants in the roots of the onomatopes cited, we find them to be: (t, p, k, k, d, b, tʃ): the root-final consonants are: (p, k, t, g, b). Here we see a great diversity of phonetic types: dentals, labials, velars;

voiced and voiceless phonemes; stops, and even an affricate. The diversity within the initials list, as also in the finals list, is thus evident — but misleading. For in this diversity there is an underlying unity (less obvious but nevertheless tangible): what unifies these consonants (both initial and final) is the fact that they belong to one and the same type, viz. plosives ([tʃ] is an affricate — but on this see below). Acoustically, plosives are essentially pulses, and it is only natural that they are used in onomatopoeic designations of a pulse. (As to affricates, the initial element here tends to be a pulse-like nature; thus affricates, too, are a natural — if somewhat less accurate — rendering of a pulse.) Hence plosives (as well as affricates) in onomatopes designating pulses are not purely phonetical, asemantic groupings — they are "semantically loaded", and charged with the delicate task of conveying meaning; whenever an onomatope designates a pulse, it is primarily the plosives that do the semantic job for the entire onomatope. Plosives in Instants are an example of what I term the phonemotype. Summing up the essential components that go to make up the onomatopes cited above, we come to the general pattern followed (with remarkably few deviations) in the formation of onomatopoeic roots designating the pulse in the most diverse languages. In terms of phonemotypes, the general pattern for Instants is as follows (for symbols, see below):

$$\frac{\text{PLOS}}{\text{AFFR}} \ +\text{VŌC}+\text{PLOS}.$$

Illustration 2: Tonal Post-Pulse Instants-Continuants (6). These onomatopes designate a complex sound — basically the combination of a pulse followed by a resonant tone (e. g. the ringing sound produced by a string or bell). Cf. Eng. *tang, ting, ping, bang, twang, clam, knell* (O. E. *cnyllan*); Est. *tinn* — high-pitched ringing sound (of a string), *plongutama* — to ring (as of a string plucked), *pumm* — powerful resonating blow (as with a fist), *till* — prolonged high-pitched ringing sound (as of a small bell); B. *tan* — sound of metal struck, *ton* — imitative of resonant sound produced by heavy object striking something hollow, *ten* — ringing sound (as of metal struck lightly), *den-den* — faint ringing sound (of a string); Indon. *letang* — sound of hammer on metal, *ting* — sound of a small bell, *bong* — imitation of sound produced by beating a large drum, *lebam* — loud sound of object falling on resonant surface, *bum* — sound of a gun or bomb. The root-initial and root-final consonants in these examples are, respectively, (t, p, b, k, d, tʃ) and (ŋ, n, m, l). The case for the initials is the same as in the abovementioned Instants: they

belong to the plosives phonemotype, and they render the initial pulse. The case for the finals is that they are all sonorants; acoustically sonorants are predominantly tonal entities; it is therefore only natural that the sonorant phonemotype is used in onomatopoeic designations of tone. In terms of phonemotypes, the prevailing general pattern for Tonal Post-Pulse Instants-Continuants is this:

$$\frac{\text{PLOS}}{\text{AFFR}} + \text{VÕC} + \text{SON}^{\text{NAS/LAT}} .$$

Illustration 3: Pure Noise Continuants [7]. These onomatopes designate pure noise — that is, various hissing, swishing, whispering sounds. Cf. Eng. *hiss, hush, huff, flush,* Est. *sahisema* — 'to rustle, *hasisema* — (dial.) to hiss, *kahisema* — to whisper gently through the leaves (of wind), to swish (of clothes), *habisema* — to whisper gently through the leaves (of wind); B. *ysyldau* — to hiss (of a goose or a snake), *bysyldau* — to hiss; to whisper, *syi* — swishing sound (caused by rapid movement), *sajtau* — (dial.) to whistle (of a bullet); Indon. *dasah* — imitation of sound of polishing; the rustling of leaves in rain, *sis* — hissing, *lesas* — a whisper, *kesik* — rustling; whispering, *kesu-kesu* — leaves rustling in the wind. A cursory overview of root-initial and root-final phonemes gives a bizarre and discouraging picture. But a closer look yields two systematic subpatterns. Subpattern one is furnished by the entire English material and part of the Estonian (*sahisema, hasisema*) and Indonesian (*dasah, sis*) material: the initials (h, f, s) and the finals (s, ʃ, f, h) — different as they are, they all fall into the category of voiceless fricatives. Subpattern two does not have fricatives for both initials and finals, but it does consistently have one fricative — either initial or final — coupled practically with any other final consonant (as in Est. *habisema,* B. *syi*) or, respectively, any other initial consonant (as in Est. *kahisema,* B. *ysyldau*) or, no final / initial consonant whatever (see Indon. *kesu-kesi,* B. *ysyldau*). The zigzag puzzle of the subpatterns resolves into the following comprehensive general pattern:

$$\frac{\text{FRIC}^\wedge}{\text{FRIC}^\wedge} + \text{VÕC} + \frac{\text{FRIC}^\wedge}{(\text{CONS})}$$

The purport of this is that for the "portrayal" of pure noise at least one voiceless fricative (initial or final) is obligatory in the onomatopoeic-roots of a given language (though some languages, like English, evince the

redundant feature of employing even two voiceless fricatives, initial and final). The voiceless fricative phonemotype, in itself acoustically pure noise, is the echoic correlate of pure noise designated by onomatopes of this kind.

It is hoped that illustrations 1, 2 and 3 help to trace the logic in isolating the notion of the phonemotype.

One of the fundamental principles at work in the domain of onomatopoeia (and, *mutatis mutandis,* sound symbolism) is the principle of homogeneity: structural acoustic elements of the referent sound (i. e., the sound designated) are iconically rendered, in the corresponding onomatope, by structural phonetic elements belonging to the acoustic type. Phonemes in the onomatopoeic root are thus correlated with the elements of the referent sound — but indirectly, via the phonemotype, the latter acting as a go-between or intermediary [8].

Given the acoustic structure of the referent sound (together with the known phonetic peculiarities of the language in question) we can safely predict (in approx. 80–90 per cent of all cases) the phonemotype pattern of corresponding onomatopoeic roots (though not its concrete phonemic realization). The crucial unit in an onomatope's structure is, then, the phonemotype — and not the phoneme.

* * *

The articulatory phonemotype in sound-symbolic words, though differing somewhat from the acoustic phonemotype of onomatopes, is fundamentally the same entity as the one outlined above (a detailed analysis calls for discussion in a separate paper).

* * *

The phonemotype in the iconic vocabulary of languages possesses a number of highly specific features. To name just a few:

— The phonemotype is a semanticized entity.

— It is a two-faceted entity, both phonetical and semantic. (Here one might even be tempted to introduce the sesquipedalian term "phonemo-semotype", or rather "phonosemotype").

— The phonemotype is able to dissect phonological space in a manner impossible for phonemes, a manner peculiar only to itself; cf. The phone-motype of labials 'in designations of rounded shape: the fundamental phonetic dichotomy of consonant / vowel is here irrelevant [9].

— The phonemotype is a psycholinguistic reality.

— It is, further, inter-disciplinary in essence.

— The phonemotype is a cross-linguistic phenomenon. (

— Being basically an ontological entity, it may be, and is, employed as a methodological instrument.

Further evolvement of the notion entails discussion of such problems as fuzzy sets and language as choice and chance.

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The notion of the "semantically loaded" phonemotype (coupled with that of onomatopoeic patterns) leads us to realize the intrinsic limitations of the longstanding belief that root morphemes, though divisible phonetically or semantically, are allegedly indivisible phoneto-semantically. Root morphemes can to a large extent be structured in terms of phonemotypes.

As demonstrated by recent research, units like the phonemotype are proving themselves adequate instruments not only in language-specific phonosemantics, but also in typological phonosemantics [10] as well as in typological paleolinguistics. For the latter, cf. Prof. R. Wescott's view:
"...sound correlations in... language families of great internal time depth must be formulated either subphonemically, in terms of articulatory or acoustic features, or transphonemically, in terms of morphophonemes" [11].
This transphonemic reference is, as has been shown, the very essence of the phonemotype, instrumental in tapping the largely untapped iconic (onomatopoeic and sound-symbolic) resources of the world's languages.

Symbols

CONS — (any) consonant

PLOS — plosive

AFFR — affricate

SON — sonorant

NAS — nasal

LAT — Lateral : [l]

^ — voiceless: FRIC^ voiceless fricative

VŎC — short vowel

() — brackets for optional components

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3. THE UNIVERSAL CLASSIFICATION OF ONOMATOPES TWENTY-FIVE YEARS ON[5]

Summary

Based on a psychoacoustic classification of sounds, the Universal Classification of Onomatopes (UCON) was evolved more than twenty-five years ago (Voronin, 1967; 1969; 1980; 1982; 1983; 1987). UCON comprises 5 classes of onomatopes: Instants, Continuants, Frequentatives; Instants-Continuants, Quasiinstant-Continuant Frequentatives. These five reflect the three chief classes of psychoacoustic events: Pulses, Nonpulses, Dissonances, as well as the two chief classes of psychoacoustic event combinations rendered in onomatopoeia: Pulse-Nonpulse, Quasipulse-nonpulse, Dissonance. Cross-linguistically, the number of classes was found to be invariably five, while the number of types hitherto established slightly varies from language to language, e. g.: 18 in English and Estonian, 19 in Georgian, 17 in Russian, 15 in Bashkir, 14 in Tatar, 13 in Indonesian.

Over the quarter-century, UCON has been proven to possess significant predictory and heuristic potential.

1. Introduction

Due to its unruly linguistic behavior, onomatopoeia never had been the darling of the language theorist — all the more so in Saussurean linguistics, where it was (and is) regarded as an unmanageable and unwelcome exception defying de Saussure's fundamental tenet of the *signe arbitraire*. If, however, the arbitrary is manageable and orderable, perhaps the nonarbitrary would tend to be even more susceptible to some kind of orderliness (albeit in its own quaint way)?

Now what better way to establish law(s) and order(liness) than via taxonomy, via classification?

Classification, yes. But what kind of classification? Largely subjective, walled in by self-imposed purely linguistic (semantic) barriers and riddled with overlapping classes/types, traditional classifications had more to do with referent sources than with the referents themselves, never reaching out to crucial properties of the type of sound designated. One and the same

[5] In press. Abstract published in: Tenth Meeting of the Language Origins Society // Abstracts. Berkeley, p. 35–36; also: Fundamentals for a Universal Classification of Onomatopes // Abstracts of the Tenth International Congress of Phonetic Sciences. Dordrecht, 1983. P. 713.

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onomatope — e. g. *roar* — would typically be classed under several headings: sounds produced by animals ("the roar of a lion"), sounds produced by humans ("the roar of an infuriated man"), sounds of industry ("the roar of steam escaping under pressure").

If onomatopoeic words designate sound, and if there is an acknowledged link between their phonetic form and their meaning, and the former is ultimately determined by the kind of sound designated, the logical move would be to evolve an objective classification of onomatopes based on a psychoacoustic classification of sounds.

With English onomatopes as the basic material and examples available from more than 70 other languages, notably those traditionally regarded as unrelated — such a classification was evolved more than twenty-five years ago (Voronin, 1967; 1969; 1980; 1982).

2. Classification of Sounds

2.1. Sound Parameters

The main psychoacoustic parameters relevant to sounds comprising onomatopoeic referents are: I. Pitch; II. Volume; III. Time; IV. Periodicity; V. Harshness, or Dissonance (Voronin, 1969).

2.2. Sound Types

In accordance with Parameter I (Pitch), sound may be quantitatively classed as 'low' or 'high'.

In accordance with Parameter II (Volume), sound may classed (also quantitatively) as 'loud' or 'soft'.

Parameter III (Time) enables us to outline qualitatively classes of sound:

```
              Sound
            /       \
        Pulse      Nonpulse
```
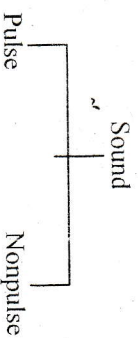
When applied to nonpulses, this parameter involves the quantitative distinction between sounds of short and long duration.

According to Parameter IV (Periodicity), nonpulses split into two qualitatively distinct groupings — tone and noise, or tonal nonpulse and noise nonpulse. The noise nonpulse is either pure noise (e. g. hissing or 'white noise') or tone-noise (e. g. buzzing, which is essentially noise with elements of tone):
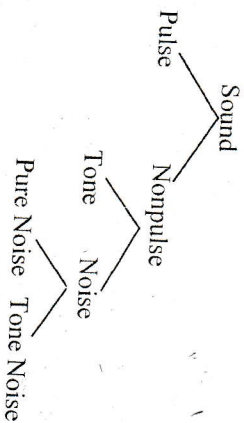
Analyzing sound in terms of the Time parameter, we come out with two large and distinctly opposed classes: the pulse and the nonpulse. The pulse, however, may be regarded as a nonpulse of 'hypershort' duration (the duration being so short that that the human ear, not having sufficient time to evaluate it on the temporal scale, interprets the sound as nothing more than a pulse, or click); as to the nonpulse, it may be regarded as a 'hyperrapid' series of pulses — so rapid, in fact, that our ear fails to register separate pulses, the latter perceptually fusing into one uninterrupted durative sound: cf. the smoothening of the envelope curve that parallels the increase in modulation frequency of acoustic stimuli (see Voronin, 1967).

Now between the two polarities of pulse and nonpulse there is a vast terrain of intermediate events, all comprising interrupted nonpulse sound, or to put it the other way round, a rapid series of pulses — too rapid for the human ear to single out the individual clicks but not rapid enough to fuse (perceptually) into one uninterrupted nonpulse; the rapid alternation of pulses causes intense irritation to the ear; the perceptual effect of the pulse series described above is that of a dissonance (ibid.).

The dissonance (pulse series) — together with its antithesis, the nondissonance, which covers both the pulse and the nonpulse — is constituted in accordance with Parameter V (Harshness):

```
           Sound
          /     \
      Pulse     Nonpulse
                /     \
             Tone     Noise
                 Pure Noise  Tone Noise
```

```
              Sound
            /       \
   Nondissonance   Dissonance
      /     \           |
  Pulse   Nonpulse   Pulse Series
```

We have now arrived at the 3 classes of sound: A. Pulse (Nondissonance); B. Nonpulse (Nondissonance); C. Pulse Series (Dissonance).
Or, to be more succinct:

A. Pulse;
B. Nonpulse;
C. Dissonance.

In perceptual experiments involving two consecutive pulses (clicks) it has been found that, when presented in rapid succession — with very small intervals (less than 1,5 msec) — the two pulses produce the impression of being one single click. In the 1,5 — 10 msec interval range the two pulses are still heard as one — but as a 'bulging', 'two-humped', harsh (raucous, dissonant) pulse tending to split in two (the harsh, raucous quality of the sound being an indirect psychoacous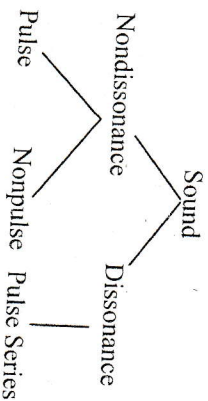tic indication of the actual presence of two pulses). With a further increase of the interval (over 10 msec) the pulses are clearly heard as distinct (Volokhov and Gershuni, 1935; Chistovich, 1958: 12–14, 44, 51 fig. 2.8). Thus a sound that we psychoacoustically interpret as a single pulse may acoustically comprise a short pulse series (the minimum number of pulses being two) spaced by intervals of exceedingly short duration. With an increase of interval duration this short pulse series would still be interpreted by our ear as pulse — though not as an 'ordinary' pulse but as a harsh, raucous, jarring, dissonant pulse, i. e. as a pulse-like dissonance; to this type of sound I would assign the term 'quasipulse'.

If the pulse series is long enough to be taken as a durative sound, and if it is too rapid for the ear to distinguish the individual clicks though not rapid enough to perceptually merge into one unbroken nonpulse — this would be the case of the pulse series proper, i. e. the pulse series perceived as such; this type of sound is what may be termed 'pure dissonance': cf. (Voronin, 1967) on the characteristic phases of beats.

With the increase in rapidity of the (relatively long) pulse series, the sound gradually loses its harsh, jarring dissonance, and the pulse series fuses into a smooth uninterrupted nonpulse, i. e. a nondissonant nonpulse.

Frequently the sound may be of a complex nature, combining the pulse series proper (pure dissonance) with perceptible elements of nonpulse; this kind of sound is what could be called the 'quasinonpulse'. Like the nonpulse, the quasinonpulse can be either tonal or noiselike, of either short or long duration. The noise quasinonpulse is either a pure noise or a tone-noise quasinonpulse.

There are thus three kinds of dissonance (pulse series): 1) quasipulse; 2) pure dissonance (pulse series proper); 3) quasinonpulse.

Considering the factors stated above, we arrive at **9 types of sound:**
I. Pulse; II. Tonal Nonpulse; III. Pure Noise Nonpulse; IV. Tone-Noise

Nonpulse; V. Quasipulse; VI. Pure Dissonance; VII. Tonal Quasinonpulse; VIII. Pure Noise Quasinonpulse; IX. Tone-Noise Quasinonpulse.[6]

The infinite variety of sounds that we encounter in our daily experience can basically be reduced to (a) the 3 classes of sound discussed above, and (b) various kinds of sequential combinations of sounds (i. e. combinations of two or more successive sounds).

Theoretically the number of the latter is very great; but the analysis of the entire universe of psychoacoustically feasible types would carry us too far beyond, and I confine myself here to pointing out only those sequential sound combination types that are reflected in one language. For a variety of reasons the language chosen is English.

As evidenced by our material, English onomatopeia reflects 9 types of sequential sound combinations: X. Tonal Postpulse-Nonpulse; XI. Pure Noise-Postpulse-Nonpulse; XII. Pure Noise-Prepulse-Pulse-Nonpulse; XIII. Tone-Noise-Prepulse-Pulse-Nonpulse; XIV. Pure Noise-Pulse-Tonal Prepulse-Postpulse-Pulse-Nonpulse; XV. Tone-Noise-Pulse-Tonal Prepulse-Postpulse-Pulse-Nonpulse; XVI. Tonal Postpulse-Quasipulse-Nonpulse; XVII. Pure Noise-Postpulse-Quasipulse-Nonpulse; XVIII. Pure Noise Prepulse-Quasipulse-Nonpulse.

The sesquipedalian terms **postpulse** (resp. **prepulse**), **quasipulse-nonpulse** (resp. **pulse-nonpulse**) denote the simple fact that the sound signified is not just a pulse or a quasipulse but a pulse or a quasipulse (the 'principal' sounds) coupled with another sound (of an 'accessory' nature) immediately following and/or preceding the 'principal' sound. The prepulse is either pure noise or tone-noise, whereas the post-pulse may be pure noise or tone.

Thus, English onomatopoeia covers a total of 18 types of referents, 9 of them being sound types, and 9 sound combination types.

The 9 types of sound belong to the 3 classes outlined above: A. Pulse; B. Nonpulse; C. Dissonance (Pulse Series) — of which the first two are essentially polarities, the third being intermediate between the pulse and nonpulse.

9 types of sound combinations may be grouped into 2 classes:
AB. Pulse-Nonpulse;
CAB. Quasipulse-Nonpulse Dissonance, the AB class possessing features of both the pulse and nonpulse sound classes (pulse features being

[6] For examples of sound types I-IX, see above, Sect. II.1: the referent sounds comprising the semantic content (meanings) of English onomatope types I-IX.

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dominant), and the CAB class blending the traits of all three sound classes (quasipulse dissonance features dominating).

3. Classification of Onomatopes
3.1. The Universal Classification of Onomatopes (UCON)

UCON comprises 5 classes: Instants, Continuants, Frequentatives; Instants-Continuants, Quasiinstant Continuant Frequentatives. These five reflect the three chief classes of psychoacoustic events: Pulses, Nonpulses, Dissonances, as well as the two chief classes of psychoacoustic event combinations rendered in onomatopoeia: Pulse-Nonpulse, Quasipulse-Nonpulse Dissonance.

Cross-linguistically, the number of classes was found to be invariably five, while the number of types hitherto established slightly varies from language to language, e. g.: 18 in English and Estonian, 19 in Georgian, 17 in Russian, 15 in Bashkir, 14 in Tatar, 13 in Indonesian. (A detailed presentation of these will be given in a forthcoming paper.)[7]

3.2. Onomatope Types in English: Illustration (...) [See above, Sect. II.1]

3.3. Cross-Linguistic Patterns: Illustrations (...) [See above, Sect. II.2] Instants, and Tonal Post-Pulse Instants-Continuants.

In addition to the examples from 4 languages cited, cf. also illustrations from 2 more languages: Kalmyk *tug-tug* "knocking or pulsating sounds", Georgian *bak-ur-i* "to walk on hard surface stamping ones feet".

4. Conclusions

My chief conclusions are as follows:
— In any language there are 5 classes of onomatopes. This is one of the major phonosemantic universals.
— The number of classes is the same in any language, whereas the number of types (the saturation, the complexity of classes) is a mild variable.
— In languages of the world, onomatopes never are a chaotic jumble of elements: they form a subsystem within the phonoiconic system of language.

Over the quarter-century, the Universal Classification of Onomatopes has been proven to possess significant predictory and heuristic potential.

[7] For examples of sound combination types X-XVIII, see above, Sect. II.1: the referent sound combinations comprising the semantic content (meanings) of English onomatope types X-XVIII.

Apart from English, it has been applied — with invariable success — to gauge onomatopoeia in quite a number of diverse languages: Zulu (Kazakevich, 1975a), Samoyed (Kazakevich, 1975b; 1988), German (Glukhareva, 1976), Indonesian (Voronin and Bratus, 1976; Bratus, 1976), Bashkir (Voronin and Lapkina, 1977; Lapkina, 1979), Estonian (Veldi, 1988), Georgian (Voronin and Kankia, 1988; Kankia, 1988), Kazakh (Khusainov, 1988), Russian (Shliakhova, 1991), Tatar (Voronin and Tcherkassova-Bird, 1994).

[Also in Bamana, a mande or mandingo language, the latter a branch of the Niger-Congo languages: see Jibril Diakite, 1989. The Ideophonic Vocabulary in the system of Parts of Speech (Bamana Material). (in Russian: Ideofoničeskaya leksika v sisteme častej reči (na materiale jazyka Bamana). Avtoref. kand. diss. Moscow — a dissertation written under the guidance of B. V. Zhurkovsky)].

Further application of the Universal Classification of Onomatopes to the world's languages (with emphasis, inter alia, on onomatopoesis in archaic communities) would, I hope, broaden the perspective for language typology and deepen the retrospective for glossogenetic studies.

Acknowledgments

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Voronin S. V. and Tcherkassova-Bird F. 1994. A Classification of Onomatopes in Tatar. Paper read at Tenth Annual Meeting of the Language Origins Society. July 1994. Berkeley, Cal.

4. A CLASSIFICATION OF ONOMATOPES IN TATAR

(In collab.: F. Tcherkassova-Bird)

1.0. Ononatopoeia is a universal linguistic phenomenon, manifested — together with sound symbolism — in the most ancient strata of vocabulary. It is precisely these that demonstrate the telltale link between sound and sense in the linguistic sign. Studies in this field may thus be of significant importance for probing the very essence of language, its origins and evolution.

2.1. Based on the universal phonosemantic classification of onomatopoeic words evolved in a number of studies (Voronin 1969; 1982; 1994; Voronin, Ašilova 1983), a first-ever classification of Tatar onomatopoeia was recently proposed (Tcherkassova 1992: unpublished MS, in Russian).

2.2. Tatar onomatopes (our material includes 286 formations) comprise 5 classes. These are subdivided into types, the number of which in Tatar was found to be 14.

2.3. Following are some illustrations.

2.3.1. Type I: Instants (designating pulses — instantaneous sounds like tapping, knocking, ticking). The predominant root model here is:

$$\frac{PLOS}{FRIC(<PLOS/AFFR)} + V\breve{O}C(+SON^{LAT}) + PLOS$$

(PLOS — plosive; FRIC — fricative; < — 'stemming from'; AFFR — affricate; VŎC — short vowel; SON^LAT — the lateral sonorant l).

EXAMPLES: **tukyldau** 'to knock, tap'; **tup(-tup)**itu 'the patter of a child's feet'; **kakyldau** 'to cackle (of geese)'; **šaptšop** (š < tš) 'imitation of a repeated or uneven knock'; **sugu** (s < t) 'to knock, pat, beat'; **kelt** 'to tick'; **bult (-bult)** 'the sound of water bubbling'.

2.3.2. Type III: Pure-Noise Continuants (designating continuous noise — like hissing); typically:

$$\left(\frac{FRIC^{\wedge}}{PLOS} +\right) V\breve{O}C + FRIC^{\wedge}$$

(FRIC^ — voiceless fricative).

EXAMPLES: **šyšyldau** 'to hiss'; **yš** 'to hiss (of steam)'; **ys** 'the hissing of geese or snakes'.

Type IV: Tone-Noise Continuants (designating continuous noise with an

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$$\left(\frac{FRIC^{\vee}}{CONS} +\right) V\breve{O}C + FRIC^{\vee}$$

(FRIC^∨ — voiced fricative; CONS — any other consonant; arrows indicate possible metathesis).

EXAMPLES: **bezeldau** 'to buzz'; **dyz** 'a bee buzzing'; **güž** 'to buzz (of insects, also of a crowd)'; **vyzyldau** 'to buzz'; **vyžyldau** 'to buzz, to hiss'; **yz** 'the buzz of flying insects'; **žu** 'a buzzing sound'.

2.3.4. Type X: Tonal "Postpulse" Instants-Continuants (designating abruptly arrested or drawn-out resonant sounds following a pulse):

$$\frac{PLOS}{AFFR} + V\breve{O}C + SON^{NAS}$$

(SON^NAS — nasal sonorant).

EXAMPLES: **doNk** 'abruptly arrested resonant sound of a heavy blow on a hollow object'; **doN** '(ding-)dong'; **šeyN** 'the ringing of a small bell ("ting")'.

3.0. The proposed classification will, it is hoped, contribute to a better understanding of the universalistic and language-specific features of onomatopoeia across time and space.

5. PLURALITY AND ICONISM: THE MALAY/INDONESIAN -ER- INFIX IN A TYPOLOGICAL SETTING

The universal functional-semantic category of plurality, or multiplicity (Xrakovskij 1989) is expressed by a variety of lexical and grammatical means.

One of the best known among these is reduplication (alias doubling, duplication, repetition, multiplication), which has been studied at some length (see e. g. Brandstetter 1917; Gonda 1950; Uhlenbeck 1953; Yelovkov 1977; Alieva 1980). Reduplication as an absolute language universal (cf. Greenberg 1966) has long been found to be iconic (Sapir 1921; Gonda 1940;

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Makarenko 1970; Jakobson 1971; Gazov-Ginzberg 1974; Long Seam 1975; Ogloblin 1980).

There is, however, another universal (albeit, it seems, non-absolute) that, like reduplication, expresses plurality. This is what I call 'RL-formatives' (Voronin 1980): (*inter alia*) the frequentative English *-er-*, *-le*, Dutch *-eren*, *-elen*, Bashkir *-γr*, *-γl*, Indonesian *-er-*, *-el-*.

I contend that RL-formatives are, in origin, iconic (cf. Voronin 1982: 118).

Presented in the paper is a detailed analysis of the Malay/Indonesian infix *-er-* (in its different manifestations), with parallels from diverse languages.

(...)

6. TOWARDS A PHONOSEMANTIC TYPOLOGY OF RL-MULTIPLICATIVES
(A CASE STUDY OF ICONICITY IN GRAMMAR)

40 лет петербургской типологической школе. / Ред. В. С. Храковский, А. Л. Мальчуков, С. Ю. Дмитренко. М.: Знание, 2003.

The workings of **iconicity** in lexis and text (especially in poetry) have been studied in extense, whereas its workings **in grammar** can claim only a limited number of studies. Few grammarians, aware of the importance of iconicity, have accorded the problem its due. Of these few, mention should be made here of A. A. Xolodovič (Xolodovič 1954: 191f), conducive to launching G. A. Pak's dissertation (Pak 1958) on Korean onomatopes and sound-symbolic words, V. S. Xrakovskij (Xrakovskij 1989: 26, 28 n.19 – cf. 1997: 28, 63 n. 19), citing some of the findings of phonosemantics, D. M. Nasilov (Nasilov 1989: 129–133), discussing Turkic aspectology and iconic verbs, and I. B. Dolinina (in 1989, 1999). Generally the none-too-numerous attempts to pick up the unorthodox hot potatoes of iconicity in grammar were met with hostility, suspicion and inept criticism or were high-handedly bypassed in silence.

Special research has shown, however, that cases of iconicity in grammar are **numerous**, and they deserve serious consideration. It is no freak of fate that when the issue of "natural classification" (i. a. in grammar) arises, the issue of iconism would be lurking there, waiting to be dealt with. So in the "natural classification" of the system of meanings belonging to the universal functional/semantic category of plurality — a classification evolved by V. S. Xrakovskij and his colleagues in the ground-breaking monograph *Typology of Iterative Constructions* (1989 — in Russian; 1997 — in English).

According to G. P. Melnikov (Melnikov 1989:19), typological conceptions proclaiming the primate of solely formal or solely contensive characteristics are aspectival, and it is approaches aiming at uncovering the laws of "matching", of interdependence, **implicative relations** in the system that are conducive to synthesis of newly discovered and earlier amassed knowledge. I hold that ignoring possible **iconicity** we basically ignore **implicative relations**, we ignore **causality**. Exclude probing iconicity — and you largely exclude in-depth understanding, the cognitive retrospective (causality) and the cognitive perspective (heuristics).

RL-multiplicatives (i. e. iterative verbs with *r* or *l* as formatives) are a graphic illustration of iconism in grammar (Jespersen 1928; Gonda 1940; Gazov-Ginzberg 1965). In Modern English, for instance, almost three fourths of its RL-verbs are in origin onomatopoeic or sound-symbolic, and *-er-*, *-le* are not (contrary to the standard opinion) dead suffixes — they are living suffixes, still fairly productive; witness N. Bartko (2001). As V. S. Xrakovskij (1997: 28) notes, "One of the universal features of lexical multiplicatives (and semelfactives)... is that they are predominantly, if not solely, onomatopoeic by origin..." The authors approach this problem from a grammatical point of view. Earlier I approached this from a general typological point of view (Voronin 1980; 1982; 1998; cf. Voronin, Bartko 1999), I now approach this specifically from the vantage point of phonosemantic typology.

Literary sources usually point out the fact that these formatives are connected with the sphere of onomatopoeia and sound symbolism. Wilmanns (1896: 93f), for instance, states that German verbs in *-ern* chiefly denote repeated, rapid and brief movements, and aural and visual impressions of such movements, and "a large number of them are onomatopoeic formations (*plätschern* "splash", *stottern* "stutter", *glitzern* "glitter")". Kluge (1913: 10) observes that Old Germanic verbs with the suffix *-arōn* as in OHG *flogarōn* "flutter") always denote movement, noise and light.

The significant role of iconicity in RL-formatives is noted i. a. by Paul (1959: 119, 121), Schmidt (1960: 117f), Fleischer (1976: 322) for German, Hummelstedt (1939: 133), Wessén (1970: 110), Viberg (1978: 212), Edlund (1987: 116) for Swedish, Rijpma, Schuringa (1971: 147), for Dutch, De Vooys (1967: 247), in his study of Dutch onomatopoeic and sound-symbolic expressivism, writes that "frequentatives" (iteratives) "could have been, from the very beginning... a product of what Paul called *Urschöpfung*".

Thus the sphere of Germanic iterative RL-formatives is vocabulary that in origin is iconic (words like those for sound, movement, light, speech,

physical and emotional states are a prominent and universally acknowl-edged part of the iconic lexis), and the stems of RL-iteratives are in origin iconic.

However, the iconic nature of the stem in these verbs is not sufficient ground to pass judgement on the nature and origin of the RL-formatives themselves. Some authors speak of their inherent iconicity. Marchand, for instance, observes: "Words in -er are compounds of several iconicity ele-ments, one of which is final -er" (Marchand 1969: 273); "Like -er, -le is not a derivative suffix proper from existing roots. (...) Many verbs have proba-bly never had a simple root without the /l/ element..." (Ibid: 323).

It is usually noted that modern Germanic RL-suffixes go back to West-Germanic and Scandinavian secondary suffixes (a result of metanalysis) with the determinatives -r-, -l-: OS, OHG — arō-, alō-; Olcel -ra, -la (Gux-man 1966: 201); it is also noted that determinatives that belong to the com-pound secondary suffix are, in origin, — and this is important — part of the underlying stem — they actually are its final consonant (Belyayeva 1965: 128). We thus have in evidence two facts of the utmost importance: the it-erative RL-formative is, in origin, part of the underlying stem; this stem is iconic in nature.

All this brings us to the conclusion: Germanic iterative RL-formatives are iconic in origin, and their nature is iconic.

Surprisingly enough, this conclusion, so evident for the unbiased — and objectively the only one feasible — had not been formulated earlier, clearly and unambiguously.

Our conclusion re the Germanic RL-formatives is corroborated by "ex-ternal" data from various other languages.

The cross-linguistic geography of RL-formatives is indeed impressive, all of them honouring one and the same macropattern.

Ramstedt (1952: 220) stresses the fact that "Word formation in Altaic languages evinces a strong preference for onomatopoeic renderings." Ramstedt cites i. a. verbs in -ra, -la, -kira: Turkic jiltire "to glimmer, flicker", burka "to burn", titire "to tremble"; Mongolian birilä "grumble" sis-kire "to whistle" (ibid.).

For Turkish, Dmitriev (1962: 64f) discussed ul//ül//~il//il, ır//ir~ir//ir (e. g. in zïrï̈ "the purling or murmur of water" and čigir "the crunching of snow") as — again: nota bene — "final syllables of disyllabic mimemes" (i. e. iconic words. — S. V.). Importantly again, Fazylov (1958: 41, 70) for Tajik, observes: "In origin, -arı/-irı/-ur are undoubtedly part of the iconic stem" as in guldur/r/"rumbling" (with no *guld attested).

In general it seems that Turkic tradition tends to regard verbs ending in r, l as disyllabic, and essentially underived (see e. g. Xaritonov 1954: 167; Išmuxametov 1981: 344-346; Ščerbak 1987: 129).

For Buryat, Tsydendambayev (1958: 143) stresses that "in onomato-poeic words all endings... act as word-formation suffixes". For Nanaian, Kile (1973: 43) points out: "The interesting feature about the final sounds of simple-stem iconic words is that they are as it were prototypes of word-formational suffixes. (...) In the word-formational suffixes -r-, -riä-a -riok and -riä-u we see the common element r, spawning all these variants".

In extensive RL adventures across world languages I came across a striking case of the R-formative in Karanga (Shona, a Bantu language). Its continuative verb forms take the suffix -ra/-irä/-era, reduplicated -rara/-irira/-erera: pota "go (in a curve) — potera "go round" — poterera "go round and round". The Karanga verb also has a "destructive", or "undoing" form in -ura, -urura: futa "swell" — futura "stretch out", pfura "knock, kick" — pfurura "knock out, scatter". Discussing some of F. Marconnés' material, I. S. Aksionova (1972: 66) appropriately cites V. Mathesius (1931: 427, 432) on the fact that intensity may be expressed not only in the force of the action within a given period but also in the duration of the ac-tion, whether interrupted or uninterrupted. I would add here this snippet from Marconnés, with his telling examples: "Like the Destructive ... the Projective (i. e. Continuative. — S. V.) -aira is intensive, and denotes a very long duration... (Cf.) pfunda "make a knot" — pfundaira "knit one's brow, frown" — pfundarara "puff out one's cheeks"... (Marconnés 1931: 198). The Karanga R-formative — not just the root — thus adopts various guises to suit iconic variation.

Jespersen (1928: 28) paid attention to the extremely important nature of the difference between monosyllabic iconic words, which express single sounds and movements, and disyllabic iconic words, denoting continuous sounds and movements; the latter are very often formed with suffixes -er and -le, employed thus in a multitude of languages, even outside the Aryan world. A similar observation was made, for Yakut, by Xaritonov (1954: 167): "... in monosyllabic onomatopoeic roots, their very monosyllabism is a form of expression for momentary sounds. (...) Quantitive complexity of sound, as well as its arrangement on the time scale, is rendered by augment-ing the root". Cf. Gazov-Ginzberg (1965: 159).

Gonda (1940: 201f), in analyzing Malay/Indonesian onomatopoeic and sound-symbolic words with the iterative infixes -er- and -el-, proposes a comparison of the latter with English and Dutch formations in, respectively, -er-, -le and -eren, -elen.

bolism, Gonda nevertheless arrives at the conclusion that the Malay/Indonesian -er-, -el- infixes are not grammatical morphemes — they are concomitant to imitating sounds or movement, and their source (or at least one of their sources) may be a significant number of iconic words (ibid.).

In Sundanese, RL-formatives are an expression of the category of plurality — for verbs, adjectives, and sometimes nouns: dink "to sit (sg.)" — "child" — barudak "children".

As I showed earlier, mostly for English, r in the onomatopoeic root is always (no exceptions) iconic, fulfilling onomatopoeic function of rendering "pure dissonance" — vibrating, intermittent sounds, i. e. a series of rapid pulses (Voronin 1969: I, 394; 1998: 76f, 81, 88–91, 100, 154). A special series of studies on Indonesian onomatopes (Voronin, Bratus 1976; Bratus 1976, Voronin 1980) demonstrated i. a. that the same is true for r in the Indonesian root: see the CandPhi by Bratus (1976: 105) written under my supervision. Data (Voronin 1982: 115–118) based i. a. on RL-verb semantics as given in Bratus (1976), point to the fact that in more than one third of the instances the R-formative fulfils only the above-mentioned one function. E. g. ker(e)lap "report (of a gun), explosion": one complex sound ("vibrant pulse") — the infixal r's function is onomatopoeic, the same function of rendering pure dissonance as that of the root in e. g. ar "creak; trampling".

In a great number of cases we have the infixal r fulfilling the sound-symbolic function of simple repetition: gertuk "sound of tapping, knocking" (as compared to tuk "knock").

Broadening the perspective, it was expedient to gauge the RL situation in some language typologically different from English and Indonesian. Closely linked to a series of typological studies (e. g. Voronin, Lapkina 1977; Lapkina, Voronin 1979; cf. Voronin, Lapkina 1989), was the CandPhil dissertation by Lapkina (1979), a postgraduate of mine, discussing onomatopoeia in Bashkir (as compared to English). As in other Turkic languages, R-formations are a significant part of Bashkir onomatopoeic vocabulary. Usually the R-formative is seen in Turkology as conveying plurality, iteration, intensity (e. g. Ašmarin 1928; Xaritonov 1954; Sevortian 1962; Xudajkuliev 1962; Išmuxametov 1970; Serebrennikov 1977), thus imparting to the onomatope only a subsidiary, quantitative characteristic (not unlike the formative in English). Phonosemantic analysis, however, shows that, at least for Bashkir, this sound-symbolic function of r in the formative largely makes way for the qualitative onomatopoeic function of

rendering pure dissonance. Consider thus supyr "(dial.) to bubble" denoting essentially an iteration of the instant sound of a stone going plop into the water, the latter rendered by the onomatope sup; the r's function is sound-symbolic; as opposed to this consider typyr in the sense "the rattling sound of machine-gun fire" the r's function is onomatopoeic (like in tur "vibrant sound", with r part of the root).

Studies in a number of Germanic (English, German, Dutch), and Turkic (Bashkir, Kirghiz, Yakut, Chuvash) languages, as well as Malay/Indonesian, and Samoyed (Selkup) languages demonstrate that these formatives comprise a phonosemantically valid part of the iconic word.

The evolution of RL is related to the process of denaturalization (the erosion of iconicity) in RL-formatives. This is best seen in r (the phonosemantically more powerful of the two sonants), discussed in the present paper. In root onomatopoeia, r is an important qualitative feature of the referent; it comes forth as the constituting element of an entire class of onomatopes ("frequentatives"), first elicited in (Voronin 1969). It is the qualitative idiosyncrasy of r that encompasses the very possibility of its development towards an element of nothing more than a quantitative characteristic of the referent: "dissonance, vibration, roughness, staccato nature, intermittence" -> "iteration, plurality, prolongation, intensity". And this possibility is widely used by the most diverse languages. The quantitativeness of the r-element in the iterative R-affix geminates from the qualitativeness of the r-element in the phonetic structure of the onomatopoeic root word. What happens is the transformation of r from concrete qualitative characteristic of the referent, its "downgrading" to an abstract quantitative characteristic (a de-qualification of r's semantics, together with its quantification).

Thus, studies in a typological multeity of languages — i. a. Indo-European (notably English, also Tajik), Uralic (Selkup), Turkic (notably Turkish, Chuvash, Bashkir, Yakut), Mongolian (Buryat), Tungus-Manchu (Nanaian), Malay/Indonesian (discussed at some length in this paper) — warrant the conclusion that RL-formatives, in origin part of a simple disyllabic iconic root word, comprise a potent iconic frequentalia in the sphere of expressing verbal plurality (multiplicativity). A detailed phonosemantic typology of RL-formatives is on the agenda.

I now conclude. Typologists have an impressive record of penetrating research in phonetic, semantic, functional-semantic, functional-grammatical typology. I suggest that they no longer turn a blind eye to cross-linguistic grammatical iconicity and phonosemantic typology. Mainstream linguistics will then — I warrant this — encounter a world hitherto unseen — a vast and mysterious world waiting to be unravelled.

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7. ON PHONOSEMANTIC UNIVERSALS

Phoneticians have frequently displayed awareness of the semanticity of speech sounds. It is this semanticity that is dealt with in **Phonosemantics**, which explores the vast domain of phonic iconism (see: *S. V. Voronin. Fundamentals of Phonosemantics.* Leningrad, 1982 — in Russian). With the growing tree of Phonosemantics branching out, offshoots like **Typological Phonosemantics** come into being. In a paper presented at the Tenth ICOPhS I discussed some of the relevant problems.

Strangely enough, despite the ubiquity of phonosemy among the world's languages, its universal features never received the attention they merit. In this paper I propose to speak of **Phonosemantic Universals** (whose status is on a par with phonetic / phonological, as well as semantic, universals).

Discussed are (a) Absolute Universals, and (b) Near-Universals. Instances of (a) are: in any language the phonoiconic system includes two subsystems: onomatopoeic and sound-symbolic; any expressive word is iconic (the reverse is not necessarily true); cross-linguistically, similarity in iconic words dominates over dissimilarity; the structural pattern of the onomatopoeic root is predictable, given that the structure of the sound designated is known; — in any language the number of onomatopoeic classes is invariably 5; — designations of pure noise contain at least one voiceless fricative; in words designating round objects, the appearance of labials is significantly above the average frequency; etc. Instances of (b) are: designations of 'gloom' tend to contain dark vowels; pejoration tends to be linked with labiality; iterative RL-affixes tend to be iconic in origin, etc.

8. SYNESTHEMIA, OR SYNESTHESIA REVISITED
(In collab.: M. Sabanadze)

1.0. With only a few exceptions (e. g. Benedetti, 1973; Gorelov, 1977; Voronin, 1982; Allott, 1989), synesthesia has rarely been linked to the problem of language origins, though it has been argued that man's capacity to form intermodal associations is conducive to the emergence of language (Benedetti, 1973: 172), the richness and potentialities of crossmodal linking being illustrated by synesthesia (Allott, 1989: 9, 24–26).

2.1. Now what is *synesthesia?* The restricted notion of the phenomenon limiting it to photisms and phonisms does not cover enough ground: synes-

thesia is now known to be an absolute universal, largely invariable, whereas photisms and phonisms are largely variable cross-individually — if present at all. Even broader notions still current are hardly satisfactory, ignoring, as they do, emotion — which is an ever present component in synesthesia. The new notion (Voronin, 1978, 1980, 1983) takes into account the fact that synesthesia is not limited to the sensory sphere; the emotive sphere has a say, too. Emotion in synesthesia is either (a) an auxiliary background element (mediator, common-denominator, tertium comparationis) in the transfer from one sensation to another or (b) a full-fledged independent element in the transfer from a sensation to an emotion. Hence the proposed term synesthemia, literally "co-sensation plus co-emotion" (Voronin, 1980). The notion thus acquired a suitable term, both notion and term, however, remained undefined.

2.2. What follows is a *definition* of synesthemia — in effect, a slightly amended version of first comprehensive definition of synesthesia evolved fairly recently (Sabanadze, 1987).

Synesthemia is a complex senso-emotive two-level psychophysio-linguistic phenomenon, where a sensation of one sensory modality brings about a secondary sensation (of a different modality) or an emotion; on the psychophysiological level the result is a transfer of sensory quality, the result on the linguistic level being a transfer of meaning.

3.0. In its forays into outlying areas, the quest for the essence of sound symbolism entails precision-check visits to quite a number of old notions. One such notion is synesthesia. Revisited and definitively precision-checked, it turns out to be none other than synesthemia.

9. CHALLENGING AN ENIGMA: THE BASIS OF SOUND SYMBOLISM

Summary

The brief paper presented is an attempt to determine the psychophysiological basis of sound symbolism. This is found to be synkinesthemia: synesthemia (~synesthesia) cum synkinemia (gesture), with kinesthesis (motor control) at the hub.

1. Introduction

Sound symbolism harbours a number of megamysteries heretofore unsolved. One of these is the **psychophysiological** basis of the phenomenon.

Just what is sound symbolism based on? As in many other interdisciplinary cases, Ludwig von Bertalanffy's (1956) brilliant brainchild, the **systemic approach**, helps to find the solution.

2. Synesthemia

Discussing "Panchronistic Tendencies in Synaesthesia", S. Ullmann notes: "Intersensorial transfer... is so rich in panchronistic implications that it automatically suggests itself as a test-case. From whatever angle we approach synaesthesia, we are struck by its borderline nature and its width of scope. (..) The tendency to combine, unify and synthesize the various sensory domains is so fundamental and so deeply rooted that its consequences are ubiquitous, and a number of sciences have to concern themselves with them... Mahling argued that at least seven great provinces are interested in its explanation: mathematical physics, anatomy, physiology, psychology, aesthetics, education, and research into occult phenomena (Mahling 1926:177). Two further avenues of approach should be added to this list: literary criticism and semantics" (Ullmann 1957: 266f). I propose to add still further avenues of approach: **phonosemantics** (dealing with onomatopoeia and sound symbolism, and the sound:: sense link in a word) (Voronin 1980; 1982), and **glottogony**.

Synesthesia and sound symbolism have a long record of mutually independent research along parallel lines. It is only fairly recently that psychologists, psycholinguists and linguists started matching the two (Kronasser 1952; Brown 1958; Peterfalvi 1970).

I. N. Gorelov (1976; 1977) proposed that sound symbolism is conditioned psychophysiologically — at least in part, by synesthesia.

Early restricted notions of synesthesia as nothing more than photisms or phonisms do little to single out the actual basis of sound symbolism: the latter is an absolute universal, largely invariable, whereas photisms and phonisms are non-universals, and are largely variable (cross-individually).

Later notions of synesthesia are universalistic, but limited only to the sensorium. Cf.: "The appearance of sensation of a certain modality under the influence of a stimulus belonging to an entirely different modality" (Velichkovsky, Zinchenko, Luria 1973: 56); "Co-operative action (of senses. — S. V.), with qualities of one sensory modality (e. g. auditory) transferred to another modality (e. g. visual)" (Luria 1975: 19). Features common to definitions like these would include the following: one stimulus calls forth two sensations, not one; one sensation is adequate, while the other is non-adequate, secondary, induced; there is intersensorial transfer of

sensory quality; synesthesia is the norm; synesthesia is restricted solely to the sensory sphere.

The latter restriction is hardly justified, for there have long been indications of common 'motional tone', 'emotive coloring', 'affective elements', 'emotive factors' in synesthesias (Rubinstein 1946; Brown 1958; Deriabin 1974; Létourneau, Artizzu 1974; cf. Ertel 1969). The emotive factor's significance is all the more vivid in the light of findings telling us that the effect of acoustic stimuli on 'color hearing' depends on their emotive positive or negative (see Kravkov 1948).

As has been said, the **new notion** takes into account the fact that synesthesia is not limited to the sensorium — the emotive sphere has a say, too (Voronin 1978). Emotion in synesthesia is either an auxiliary background 'element' in the transfer from one sensation to another or an independent 'end' element in the transfer from a sensation to an emotion. Hence the term *synesthemia*; for a detailed discussion see (Voronin 1982).

We repeat: *synesthemia* is a complex phenomenon, where a sensation of one sensory modality brings about a secondary sensation or an emotion; on the psychophysiological level the result is a transfer of sensory quality, the result on the linguistic level being a transfer of meaning (Voronin, Sabanadze 1994).

One elucidation needed by the definition today would perhaps be this: "...a secondary sensation (different in modality, identical in emotive sign) or an emotion (identical in emotive sign)...".

Challenging the enigma of sound symbolism's basis, we thus find that synesthemia belongs to this basis. Research, however, shows that it covers only part of the ground. What about the other part?

3. Synkinemia

This covers various **kinemes**, i. e., **gestures** (including facial expression). The topic of gestures being much more straightforward than that of synesthemia, I refer the reader to works like (Darwin 1872; Leonhard 1976) — with ample bibliography, and I venture here only two or three remarks relevant to the basis of sound symbolism.

A classification of kinemes evolved in (Voronin 1982) comprises (a) reflectory and expressive movements accompanying internal non-phonic processes (sensory, emotive, volitional, mental) in man, and (b) 'sympathetic movements' serving as mimetic renderings of external non-phonic objects (their form, size etc.). Gesture/articulation and sound are combined in the peculiar borderline type of phonointrakinemes (sniffing, puffing, swallowing, etc.).

All these were given a detailed overview from the standpoint of sound symbolism in ten different languages in A. M. Gazov-Ginzberg's (1965) wide-ranging study.

The phylogenetic trek from bodily movement to hand/arm gesture to articulatory gesture to word was ably demonstrated by R. Allott: "The origin and evolution of language was the result of a transfer of motor patterning from that controlling bodily movement generally to the articulatory organs... Elementary motor programs specifically control all the precise ballistic and targeted movements of the hand and arm.... Gestures of the hand and arm... are structured by the contours of perceived objects... Every gesture structured by a perceived object or action or by a recalled object or action can be redirected to produce an equivalent articulatory action... Speech/sounds, and beyond them aggregations of speech sounds in words, are equivalent to, homeomorphic with, gestures structured by perceived or recalled objects or actions" (Allott 1994: 1).

4. Synkinesthemia

Synesthemia and synkinemia — how do these two entities, **so unlike** one another, come under one roof? Where are we to look for their common denominator? Apparently, this **common denominator** is **kinesthesis** (Voronin 1988), the **motor control** system.

This would follow from B. Galeyev's pioneering work on synesthesia. Underscored is the important role played by the **kinesthetic sensory system** in the formation of synesthesias:

"This kinesthetic analyzer is unique in that it is an invariable 'accompanist' to the operation of all other sensory organs. Developing I. M. Sechenov's ideas on the role of the **'muscle sense'** (emphasis mine. — S. V.)... psychologists discovered a feature characteristic for any exteroceptive process: this involves a 'likening' of the process to the properties of the outside acting agent. And this holds not only for the tactile sense, where the sensory organ in its movements is 'obliged' to follow the contours of the object, or for sight, where the eye scans the object — this holds even for hearing, where one of the links in the reflectory loop is the vocal organ's motor reaction: actual or silent 'singing out' of the sound perceived...(Leontiev 1983: II, 28). (...) It is the perception of movement (the latter intimately linked to praxis) that can serve as a **link** (emphasis mine. — S. V.) for any sensations (whatever their modality); this throws light on the multifarious and covert manifestations of synesthesia involved here" (Galeyev 1987: 105f).

The idea of the **common denominator** for synesthemia and synkinemia study of language origins (Allott 1989), follow from R. Allott's fundamental and persuasive of **motor control** in behavior:

"The motor system is seen as the indispensable **mediator** (emphasis mine. — S. V.) between different modalities, and particularly between language and perception" (p. 9);

"A motor theory of language origin implies that, internally, every significant feature of language can be approached in motor terms. There should, on this view, be a relation between motor control and perception, between motor control and perception, in so far as the motor system is assumed to be the essential intermediary between the different sensory modes and languages" (p. 27);

"In the cross-modal abilities... what is apparent is the involvement of the motor system, the expression of cross-modal linkings in action of some kind or other, whether the result is imitation of a facial expression or bodily movement, production of sound or speech... This is not really surprising in view of the **central role** (emphasis mine. — S. V.) of motor control in behaviour; motor control seems to be the primordial ability of the organism..." (p. 25).

Cf. from M. Donald's in-depth volume: "The primacy of motor evolution is central to any credible phylogenetic account of language" (see Donald 1993: 740).

With motor control or kinesthesis as the hub, the pivot of synesthesia/synesthemia and gesture, we come back to cross-modality: "Die Geburt der Sprache wird also ermöglicht durch die menschliche Fähigkeit, intermodale Assoziationen zu bilden" (Benedetti 1973: 172).

5. Conclusions

To sum up: synethemia and synkinemia (i. e. essentially synesthesia and gesture) thus form together the psychophysiological **basis of sound symbolism**, which is **synkinesthemia** (Voronin 1988). Intermodal in nature, the latter is in its turn based on the supramodal human faculty of imitation.

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10. THE PHONOICONIC SYSTEM: DEFINITIONS

This paper was read at the Third Symposium on Iconicity held in Jena, Germany, 2000.

1. Introductory

In *Fundamentals of Phonosemantics* (Voronin 1982) it was demonstrated that onomatopoeia and sound symbolism are two subsystems within the phonoiconic system of language.

Now what exactly is the phonoiconic system?

A fact too often underrated is that it is not only the word that is a linguistic sign — gesture is, too. There are two basic modes of the linguistic sign: the kinesic sign (i. e. the gestural sign, gesture) and the phonic sign (i. e. the "sounding" word). I subdivide iconic signs into kineiconic, 'miming' non-sounds by gesture, and phonoiconic, 'miming' sounds (onomatopoeia) and non sounds (sound symbolism) by the 'sounding' word. It is the phonoiconic signs that comprise the phonoiconic system. Advanced in this paper are definitions of the system.

2. Phenomenology

Properties

In systems theory, Uyomov (1978b: 154-174) proposes 26 characteristic properties/parameters that would serve to single out different kinds of systems. A number of these served as the starting point in determining the typical features of the phonoiconic system (Voronin 1982: 158-165). Today I submit an elaboration of this, with 4 of Uyomov's properties ('open', 'de-

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termined', 'centered', 'stable') and 27 phonoiconic systemic properties elicited independently in my research. With further probes into iconicity, there will of course be modifications in the composition and number of the 31 properties.

These properties are listed below in table form with a brief commentary on ones that are more in line with the present Symposium. It stands to reason that all properties except the system-forming property would be shared, in varying degrees, with those of various other systems, linguistic or non-linguistic.

Properties of the Phonoiconic System

(1) Dynamic	(17) Gestaltlike
(2) Self-Organizing	(18) Right-Hemispheric
(3) Self-Tuning	(19) Expressive
(4) Synergistic	(20) Centered
(5) Complementary	(21) Peripheral-Central
(6) Semiotic	(22) Relatively Non-Stationary
(7) Linguistic	(23) Stable
(8) Natural	(24) (Hyper)anomalous
(9) Flexible	(25) (Hyper)variable
(10) Open	(26) Relatively weak
(11) Determined	(27) Stochastic
(12) Non-Arbitrary	(28) Universal
(13) Motivated	(29) Multi-Level
(14) Iconic	(30) Extra-Intralinguistic
(15) Imagic	(31) Phonetically (Primarily)
(16) Metaphoric	Motivated

Properties (1)–(10) and (21)–(31) hardly need any comment in the present context; a brief commentary to properties (11)–(20) follows.

(11) Determined. The peculiarities of form in simple-stem words onomatopoeic or sound-symbolic in origin are fundamentally determined by properties of the referent.

(12) Non-Arbitrary. (13) Motivated. These are a direct sequel of (11).

(14) Iconic. According to Charles Sanders Peirce (1932), an icon is a non-arbitrary intentional sign, i. e. a designation that bears an intrinsic resemblance to the thing it designates. A system of icons is thus iconic.

(15) Imagic. A most important distinction made by Peirce (1932: 2. 247, 277–282) in his theory of signs is that of what may be termed 'imagic' and 'diagrammatic' iconicity. An iconic image is a sign which resembles its referent in some particular feature(s) (e. g. photographs, portrait paintings;

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iconic — i. e. onomatopoeic and sound-symbolic — words). An iconic diagram is a systematic arrangement of signs (not necessarily resembling their referents), whose relationships to each other reflect those of their referents (e. g. technical diagrams; 'non-iconic' reduplicated words). As we now see it, Peirce's *iconic images* correlate with the iconic system's *elements*, whereas his *iconic diagrams* correlate with the *relations* in this system.

(16) <u>Metaphoric</u>. The vivid picturesque nature of onomatopoeic and sound-symbolic words (cf. the Russian descriptive phrase *slova-kartinki* 'picture words' and the term *obraznye slova* 'image words' (for the latter cf. (15) *Imagic* above) is fertile ground for all manner of metaphor. It is noteworthy that Fónagy's classic *Die Metaphern in der Phonetik* (Fónagy 1963: 39-41, 58 *et passim*) discusses the symbolism of various speech sounds, with references to widely known sound-symbolic studies, as in Plato's *Kratylos*, and in Lomonosov, Westermann, Jespersen, Piaget. Langdon (1994: 102) observes that 'noise words' (i. e. onomatopes) in Guarani "seem to be particularly prone to metaphorical extension... While many of the basic meanings describe noises produced in nature, by inanimate objects, or involuntarily by human bodies, it is often possible to use these verbs to refer to human emotions, expressing a whole range of types of anger ... [cf.] *perere* 'to be angry, make sounds like a bull, but not totally out of control', *mbururu* 'to be angry, make noise like a flapping chicken', ..."

(17) <u>Gestaltlike</u>. Discussing a number of cognitive science issues, Feldman (1985) mentions that the human brain is an information processing system, but one that is quite different from conventional computers; the basic computing elements operate in the millisecond range and are about a million times slower than current electronic devices. Taking up this issue, Levin (1985: 561f, 564) points out that the human brain is simply too slow to convert incoming signals into binary feature bundles (as merely the first step in a series of operations of comprehension), and then produce an appropriate response; Levin suggests another model — Gestalt perception (pattern recognition), which is instantaneous; "as it turns out, any token identified through Gestalt recognition is an icon...."

(18) <u>Right-Hemispheric</u>. The right hemisphere of the brain is responsible for the production of signs characterized by the following features: concrete, metaphoric, prelogical, emotional, expressive (cf. Chernigovskaya 1995); now these are precisely the features typical of the (nascent) iconic sign (Voronin 1998).

(19) <u>Expressive</u>. One of the absolute phonosemantic universals formulated in (Voronin 1980: 41) reads as follows: "An expressive word is always iconic..." The iconic nature of expressive vocabulary in colloquial

speech and in literature has been discussed at length i. a. in (Grammont 1901; Lehmann 1949; Ullmann 1951; Carr 1966; Fudge 1970; Difflloth 1976; Jakobson, Waugh 1979; W. G. Mueller 1999; Naenny, Fischer eds. 1999).

(20) <u>Centered</u>. In modern synchrony, the 'center' of the language system belongs to 'regular', 'non-anomalous' non-iconic words (cf. Zhivov, Uspensky 1973), and the phonoiconic system's 'center' is on the periphery of language as a whole. The periphery of the phonoiconic system belongs to iconic (especially, sound-symbolic) words with the sound-sense link largely obscured or to all appearances totally lost in the course of evolution.

Phenomenological Definition

The discussion of properties typical of the phonoiconic system permits the formulation of a phenomenological definition. By the latter I mean a definition obtained inductively as a result of examining the properties of the system (outward, 'symptomatic' or, on the contrary, inner, fundamental, essential). In defining a notion we delineate the boundary setting apart the object in question from other objects. In doing so we do not have to longlist all imaginable properties of the object — a shortlist of a few of the more important 'highlights' will suffice:

Phonoiconic System: a non-arbitrary, iconic, metaphoric, gestaltlike, right-hemispheric, universal, extra-intralinguistic, phonetically (primarily) motivated language system.

3. Ontology

"System": A General Definition for Systems Theory

In the original Russian text (Voronin 1980: 35; 1982: 175) I proposed the following general cross-disciplinary ontological definition of the notion: System (S): A set of objects (m) possessing a certain common property (P) and a totality of relations (R), and belonging to a higher-order set of objects (M).

Today, I would offer a revised version of this, which i. a. seems somewhat more economical. But first, some preliminary remarks.

Re the terms 'object' and 'element'. When we speak of an entity that is something to be studied, we mostly use the term 'object' (as in "object of study"); when discussing an entity from the point of view of it specifically being a component part of a system, the term 'element' in most cases would perhaps be preferable.

Re the terms 'elements' and 'relations'. In any system there is basically nothing but elements and relations (i. e. links, ties, connections) between

them. Fundamentally correct, this statement would, however, be an over-simplification if we are to attempt a precise definition of what a system is.

First, in a particular system we do not have just *any* kind of elements — we have *homologous* elements: ones that possess a certain fundamental property common to them all. This is the *'system-forming property'*, one property that is basic for a particular system: take another system-forming property — and we have a different system.

Second, what is most important for/in a system is not just 'individual' relations between the homologous elements (i. e. relations taken 'piece-meal', separately) — what matters is the relations in their cumulative total-ity, the 'web' (net, grid) of these relations, which may be (and usually is) called 'structure'. Structure is what 'organizes' ('orders') the set of ele-ments into a system; structure is essentially what makes a system a sys-tem — without structure, a multeity of elements is just a set.

With these remarks in mind, and with Bertalanffi's (1969: 30), Uyo-mov's (1963; 1978a: 96f; 1978b: 122), Urmantsev's (1972: 295; 1974: 60) definitive systemological deliberations as a methodological backdrop, I herein propose the following general cross-disciplinary ontological defini-tion for systems theory:

System: a structured set of homologous elements.

"Phonoiconic System": Ontological Definitions

Also proposed are three ontological definitions for the phonoiconic sys-tem (differing in the degree of elaboration).

The two slightly simplified versions, centered on the word as the sys-tem's pivotal element, should be:

– A structured set of iconic (onomatopoeic and sound-symbolic) words;

– A structured set of phonetically motivated words.

I emphasized this earlier (Voronin 1980; 1982; 1992), but persisting misconceptions as to what iconic words are compel me to reiterate: iconic words are not only words that are felt to possess a phonetically motivated bond between sound and sense — iconic, too, are all those countless words where in the course of historical development this bond has become ob-scured but where it can be discovered with the aid of the method of phonosemantic analysis, involving 'deep down' etymological analysis but-tressed by 'external' typological data (i. e. data from interphyletic compari-sons). This broad concept leads us to realize the true scope of linguistic iconism, and the actual balance of iconic and non-iconic elements in lan-guage.

I finally propose a detailed version of the ontological definition:

Phonoiconic System: a structured set of language elements whose sys-tem-forming property is a regular causal relation between the phonetic form of a (non-derivative) word and the underlying motif of nomination (naming).

4. Conclusion

Roger Williams Wescott (1980: viii) remarks that despite abundant evi-dence for iconism, "a majority of linguists maintain a blanket scepticism concerning it." My guess is that, with advances in iconic theory, this cosy whole-piece blanket may soon wax to frayed patchwork.

Appendix p. 166–169 to: С. В. Воронин. Фоносемантика и этимология // Диахроническая германистика. СПб., 1997. С. 131–171.

II. SOUND-SYMBOLIC ETYMOLOGIES: A CONCISE DICTIONARY
(Project)

Foreword

(...) It is a well-known fact that sound-symbolic words are *seldom ade-quately represented in dictionaries* — or labeled or etymologized. This in-adequacy has been pointed out by a number of authors, including etymolo-gists (Y. Malkiel, V. I. Abayev, A. A. Yuldashev, S. V. Voronin). Y. Mal-kiel called for a "cool-headed re-examination" of the situation, while V. I. Abayev bluntly called the etymologists' "inattention to sound symbol-ism" a "big mistake".

Sound-symbolic (onomatopoeic, *expressive*) origins used to be assigned to a word only as a last resort. This was of course correct — but only until all other resources were tapped to (near-) exhaustion. The time has now come to pick at the last resort ("*Give sound symbolism a chance*. Test it — and see for yourself"). Over the years, our own research has consistently shown that the ground covered by dictionary entries labeled "*origin un-known*" or "*etymology obscure*" turns out to be *largely sound-symbolic* (in one particular case, over thirty per cent of the material).

Hence the need for an etymological dictionary of sound-symbolic words.

The proposed dictionary possesses a number of important "*first-ever*" features:

– *Brought together* for the first time are: data from *etymologists* (as re-flected chiefly in etymological and historical dictionaries) and *results*

obtained by those who did research *specifically in sound symbolism*, onomatopoeia, expressivism (e. g., H. Wedgwood, O. Jespersen, E. Sapir, S. Ullmann, H. Marchand, R. Jakobson, R. Wescott, J. Ohala, G. V. Smithers, R. Allott, E. C. Fudge, and the present author).

– Employed for the first time on a *large scale* is the *Method of Phonosemantic Analysis* evolved by this author. Far from being simply a projection of the investigator's intuition, Phonosemantic Analysis is a consistently systemic method involving *seven operations* (stages) and incorporating a set of *objective criteria* (including phonetic and morphological criteria). The method has been tested, with satisfactory results, for diverse languages (English, Indonesian, Bashkir, Estonian, Georgian, Lezghian).

– Presented for the first time in easy-to-find *dictionary form* is a sizeable portion of attested English sound-symbolic words.

– Last but not least: this would be ... the first Etymological Dictionary (albeit Concise) of English Sound-Symbolic Words — with *no analogues* yet the world over.

The number of entries exceeds 800 — words like: anger, anxiety, awe, bale, ball, bloomer, bogey, boulder, buzz, clash, click, cough, crack, cup, dither, flap, flash, flirt, flutter, glide, glitter, good, grin, grudge, jab, jerk, lick, lump, nip, nose, pommel, pout, quay, quiver, rattle, rustle, sip, slide, smile, sneer, squelch, supper, tramp, tremble, twinkle, whiff, zip, etc., etc.

This dictionary will be of interest to psycholinguists, psychologists, anthropologists, to specialists in general linguistics, phonetics, semantics, lexicology, children's speech, poetics, translation, as well as to the steadily growing number of academics and students probing/studying sound symbolism in the United Kingdom, USA, Russia, France, Germany, Japan, and elsewhere.

Sample Entries

BOB a bunch or cluster; a knob; also used for various roundish objects (grub, larva, knot of hair, etc.). Mostly labelled "of unknown orig." (e. g., in ODEE); *bob* is, with its labial sounds, a typical sound-symbolic word designating rounded objects: roundness is naturally (iconically) rendered by rounding the lips and articulating labial sounds — a highly universalistic feature in world languages. See Persson 246f, 252f; Abaev 1979 s. v. *tymbyl*; Gazov-Ginzberg 76–79; Voronin (1982) 98–102; Slonitskaya 200f — with numerous examples and a discussion of the sound/sense link.

BREW to make (ale, etc.) by infusion, boiling, and fermentation. — OE *breowan*; — CGerm. (exc. Goth.) *breu(w)an*, f. IE *bhreu-*, *bhru* Cf. broth. Sound-symbolic: Wedgwood, Illič-Svityč s. v. bur'a.

CHAMP to chew by vigorous and noisy action of the jaws; to munch. *Cham, champ* appear to belong to a primary *champ*, app. closely connected or identical with *jam (jamb)*, and *jamble* 'squeeze with violence, crush'. Possibly the group is an instance of recent onomatopoeia: Wedgwood gives instances showing that *cham(b)*, *jam(b)* are natural representations of the action or sound of the jaws in diverse and distant languages (OED). The imitative nature of *champ* is also noted in Klein, Skeat, ODEE, Marchand 334, Fröhlich 128, Voronin (1969) 453.

CLASH the loud sound of collision made by a heavy stroke or blow, the first impact of which is firm and hard, but is followed by a confused sound of many looser and lighter impacts; the kind of blow or stroke which yields this sound, appears to be onomatopoeic; arising in the main from an instinctive association with classes of pre-existing echoic words; the initial element is that of *clap, clack*, etc., the final that of *dash, splash, smash*, etc., or perh. a direct imitation of sound common to these; *clash* thus suggests an action produced in the same way as a *clap* or *clack* which instead of abruptly ending like these, is broken down as it were into, and result in, a mingled mass of smashing or rustling (OED). Sound-symbolic: Marchand 325, Fröhlich 130, Voronin (1969) 305.

CLIQUE a small and exclusive party or set; a term of contempt. Fr. *cliquer* 'to click, clack, clap', orig. the same as *claque* (SOED); cf. *click*. For the sense-development cf. *claque*. Sound-symbolic.

CLOCK a bell; the gong of a striking watch; an instrument for the measurement of time. MLG, Mdu *klocke*, corr. to OE *clugge*, OHG *glocka* (G *Glocke* 'bell': G — medL *clocca* 'bell' (whence F *cloche*). The OED notes that, wherever it actually arose, it was prob. echoic, imitating the rattling made by the early handbells of sheet-iron and quadrilateral shape, rather than the ringing of the cast circular bell of later date. Sound-symbolic: Marchand 325, Voronin (1969) 156.

COP (sl.) to capture, catch. Prob. var. of *cap* 'arrest, seize'. — OF *caper* 'seize'. — L *capere* 'take' (cf *capture*); hence *cop, copper* 'policeman' (ODEE). — IE *ghabh-/kap-* 'seize, take' is sound-symbolic: Walde; Gonda 161; Johannesson 4; Hubschmid 128f, 132; Illič-Svityč; Voronin (1982) 154; Klimova 166f. Semantic development: 'seize' with the mouth — seize with the hands', the mouth's microgesture mimetically rendering the macrogesture of the hands.

FLIRT sneer; to throw with a jerk; to rap, fillip; to flick; to play at courtship. Onomatopoeic; cf. *flick, flip, flerk, spurt, squirt* (OED). Cf.: to flirt a fan — open and close it with a jerk, wave it smartly (see OED, s. v. *flirt* v.,

sense 3). Sound-symbolic: Marchand 328; Fröhlich 129; Voronin (1969) 358.

HURRY commotion or agitation; excited or impetuous motion; rush. The sound-symbolic nature of *hurry* is attested in OED ("of onomatopoeic origin... the element *hurr* being naturally used in various languages to express the sound of rapid vibration, and the rapid motion which it accompanies"); Marchand 340; Smithers 146; Voronin (1969) 252.

JUMP to make a spring from the ground, etc. App. of onomatopoeic origin; cf. bump, etc. (OED). Prob. imit. of the sound of feet coming to the ground; cf. *bump*, *thump* (ODEE). Sound-symbolic in origin: see Klein; Marchand 263, 334; Voronin (1969) 285.

JUT strike, knock or push against smth; push, thrust. The sound-symbolic nature of *jut* is stated in OED ("app. onomatopoeic, expressing both in sound and feeling the obstructed action in question"); see also Voronin (1969) 456.

TWIRL to rotate rapidly, to spin; to be whirled round or about to whirl. Orig. obscure; perh. imitative, after *whirl* (SOED). Sound-symbolic: Wedgwood; Marchand 329; Fröhlich 33; Klimova 153.

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12. ETYMOLOGICAL PHONOSEMANTICS AND GLOSSOGONIC RESEARCH

PHONOSEMANTICS as a linguistic science (Voronin 1980; 1982) has for its aim 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 modern synchrony, in diachrony, in genesis). A fledgling linguistic science, phonosemantics nonetheless has, to date, a number of attainments to its credit [See also below. Sect. III. 4]: The concept of the dual nonarbitrary-cum-arbitrary nature of the linguistic sign (as opposed to Saussure's *signe arbitraire*); The broad concept of the nonarbitrary primarily motivated linguistic sign — the iconic word (onomatopoeic or sound-symbolic); The universal classification of onomatopes; Cross-linguistic onomatopoeic patterns (models); The phenotype, or phenomotype (acoustic or articulatory); Identification criteria for sound-symbolic words; Chief groupings of sound-symbolic words; Typological phonosemantics, or phonosemantic typology; phonosemantic universals; Synkinaesthemia: basis of sound symbolism; Method of phonosemantic analysis; Diachronic (evolutionary, historical) phonosemantics; Genetic phonosemantics; Phonosemantic component of

linguistic competence (ontogeny)); Iconic theory of language origin (phylogeny).

The features listed above pertain to three different planes: modern synchrony, diachrony (evolution), genesis. Etymological phonosemantics would primarily belong to the genetic plane (with upshots weaving into diachrony). Etymological phonosemantics is a nascent branch. Its beginnings were in the etymology of English iconic words (Voronin 1969, 1980), Nostratic (Voronin 1977) and Germanic (Voronin 1981) lexemes and, again, English iconic material (Voronin, Klimova 1986; Klimova 1986, Ponomariova 1991); and the formulation of the method of phonosemantic analysis (Voronin 1990). Many other important formulations still have to be made, but even today etymological phonosemantics is able to pinpoint great numbers of arbitrary formations and traditional instances of 'origin obscure' as thoroughly camouflaged cases of iconicity.

III. GLOTTOGENESIS

1. APPROACHING THE ICONIC THEORY OF LANGUAGE ORIGIN

In: Ninth Meeting of the Language Origins Society. Abstracts. Oranienbaum, 1993. P. 42–44.

1. (...) Born of this absolute [Saussure's principle of arbitrariness in post-Saussurean times] are at least three myths denigrating the actual role played by iconic words (including sound-symbolic words and onomatopes): the Myths of Very Limited Potential (semantic and morphological), Very Limited Scope, and Very Limited Numbers. (...)

2. The present paper discusses some ideas fundamental to the Iconic Theory of Language Origin.

2.1. The Iconic (Natural) Sign Law: The linguistic sign — and language — are originally iconic (natural, nonarbitrary).

2.2. Wherein the evidence supporting the above-mentioned law? The evidence is perforce circumstantial — but the sheer number and significance of the various quarters it comes from achieves a 'critical mass' that brings forth a persuasive cumulative argument for iconicity. Let us look at some fundamentals (a detailed systematic discussion of what I call the Circumstantial Evidence Chain will be given elsewhere).

2.3. The Biogenetic Law (a proposed rethink — notably with regard to glossogonics): For a given order, phylogenesis is essentially echoed in: (1) normal individual ontogenesis (e. g., child language); (2) paranormal individual actogenesis (e. g., dream speech, aphasia, schizophrenia); (3) paranormal group actogenesis (e. g., archaic societies); (4) normal lower-order actogenesis (e. g., communication in primates). (...)

[For 2.4. The Homeomorphism Law and 2.5. The Multiple-Choice Nomination Laws see Sect. III.2 below.]

3. And now, back to the beginning. In the beginning was the sign. The Iconic Sign.

2. APPROACHING THE ICONIC THEORY OF LANGUAGE ORIGIN: PERTINENT LAWS AND TENDENCIES FROM PHONOSEMANTICS

Summary

The paper discusses 15 semiotic laws and tendencies established by Phonosemantics and fundamental to the Iconic Theory of Language Origin. One of these is the Iconic Sign Law: "In origin, the linguistic sign is iconic (natural, nonarbitrary)."

1. Introduction

Roman Jakobson and Linda Waugh open their seminal work, *The Sound Shape of Language* (Jakobson and Waugh, 1979), with Edward Sapir's penetrating remark: "What fetters the mind and benumbs the spirit is ever the dogged acceptance of absolutes" (*vide* Sapir, 1949).

It is now becoming increasingly clear that the principle of the *signe arbitraire* is one such absolute. Indisputably operational within certain limits, Ferdinand de Saussure's principle of arbitrariness had been hypergeneralized in post-Saussurean times — only to become an absolute that ignored the *sound-symbolic* and *onomatopoeic* element in the vocabulary of the world's languages. 'Ignored', however, may be too mild an estimate. Robin Allott prefaced his paper delivered at the St. Petersburg meeting of the LOS (Allott, 1993) with the words: "There is a widespread hatred of iconicity in language — in particular by linguists". Let us try to be guided by facts and reason, not vituperatory emotion.

Born of this absolute are at least **three myths** denigrating the actual role played by iconic words (including sound-symbolic words and onomatopes): The Myths of Very Limited Scope, Very Limited Potential (semantic and word-formational), Very Limited Numbers. Special research, however, demonstrates that the majority of iconic words are capable of developing the most abstract meanings and of being highly productive in word-formation; their scope is shown to be much broader (even to the extent of making inroads into the vocabulary of terminology); their number is demonstrated to be far in excess of earlier estimates.

It should be emphasized that iconic words are not only words that are felt to possess a phonetically motivated bond between sound and sense —

iconic, too, are all those countless words where in the course of historical development this bond has become obscured but where it can be discovered with the aid of the method of phonosemantic analysis, involving 'deep down' etymological analysis buttressed by 'external' typological data (i. e. data from interphyletic comparisons). This broad concept (Voronin, 1980) leads us to realize the true scope of linguistic iconism, and the actual balance of iconic and non-iconic elements in language. [See also Voronin 1993] Iconism turns out to be no insignificant side-issue — it is a problem in its own right, providing insights into fundamental issues like the nature of the linguistic sign, language typology, child language, aphasia, language in archaic societies, communication in primates, and the origin of language.

The present paper discusses a number of semiotic laws and tendencies established by Phonosemantics and fundamental to our Iconic Theory of Language Origin.

2. Some Laws and Tendencies

2.1. The Conformity Law

One important feature of all that exists is the comprehensive tendency of form and content to conform to each other. Curiously enough, however, it is commonly postulated that this tendency is non-operational in a vast range of phenomena exceptionally important for man — in semiotic (sign) systems, including language. This was noted by Zhuravlev, who in his fundamental work on sound symbolism came to the conclusion: "...it would hardly be possible to find arguments that warrant withdrawing the sign from the sphere of the general tendency of form and content conforming to each other" (1974: 6).

What follows is a slightly revised version of my earlier **Conformity Law** for the simple (non-derived) nascent sign (cf. Voronin, 1982: 180):

- The primary linguistic sign is in a certain type of conformity with the referent.

The modality of representation (reflection, depiction) here is conformity (correspondence), not identity (sameness) — if only by virtue of the different physical nature of the represented and that which represents. This general and most fundamental law of sign formation (and the iconic system of language) ensues from the fact that the sign is a representation (reflection) of an entity. Being highly generalized, this law needs to be specified: the required specification is provided in the following.

2.2. The Homeomorphism Law

There are two versions in the wording of this (Voronin, 1980: 38):

• The primary linguistic sing is in homeomorphic conformity with the referent;

• The primary linguistic sign is homeomorphous with its referent.

The notion of homeomorphism we adhere to involves the one-to-many correlation (cf. Korshunov, 1979: 28). The representing (reflecting, depicting) entity never repeats the entity represented in every detail; the former is always only an approximation of the latter; the model is always poorer ("more void") than its original (and the form of the sign is, like its contents, a model of the referent). We would thus have here a one-to-many, i.e. homeomorphic, correlation, not a one-to-one, i.e. isomorphic, correlation.

Surprisingly enough, this homeomorphism, as well as the momentous consequences involved, was hardly ever noticed — and never appreciated. Which is regrettable. The non-rigidity of correlation, the flexibility of the tie between sign and referent are, partly, the basis for the relative autonomy of sign from referent and form from meaning — an autonomy which contributed to that Great Illusion, The Sign's Basic Arbitrariness. The tenet of arbitrariness is at variance with the Homeomorphism Law. A potent aid in establishing the homeomorphism discussed is the Method of Phonosemantic Analysis (Voronin, 1990a).

2.3. The Multiple-Choice Nomination Laws

2.3.1. The Laws

An expanded version of my earlier MCN Law (cf. Voronin, 1980: 43, 1982: 189–190) follows.

General MCN Law

• In nomination (naming), there is a many-to-many (M::M) correlation in the Sign-Referent dyad.

Specific MCN Laws

(1) One sign may name (represent) more than one referent, or more than one referent may be named (represented) by one sign.

(2) More than one sign may name (represent) one referent, or one referent may be named (represented) by more than one sign.

The M::M correlation includes the one-to-many (1::M) and many-to-one (M::1) correlations.

The Multiple-Choice Nomination Law (in abbreviated form: MCN, or MultiNom) is a logical sequel to the Homeomorphism Law discussed

above, MultiNom treating a more complex phenomenon: essentially double, bidirectional homeomorphism — not just unidirectional multiple-choice representation but the twofold multiple correlation "sign::referent", "referent::sign".

This complex crisscross M::M correlation was another factor contributing to that Great Illusion, The Sign's Basic Arbitrariness.

2.3.2. The Myth ("1::1 Correlation")

In discussing MultiNom, it is imperative to speak out against a widespread delusion, one extremely common among arbitrarianists — I call this delusion "The Myth of 1::1 Correlation" (cf. Voronin, 1980: 40).

The most 'devastating' arguments frequently voiced by arbitrarianists are these: the existence of synonyms; the very existence of different languages; the fairly frequent dissimilarity of iconic (onomatopoeic and sound-symbolic) words in different languages of the world. Here are some typical statements:

"Inner and essential connection between idea and word... there is none, in any language upon earth. (...) The essential difference, which separates man's means of communication... from that of the other animals, is that, while the latter is instinctive, the former is... arbitrary and conventional. (...) It is fully proved by the single circumstance that for each object... there are as many names as there are languages in the world... (...) Even when the onomatopoeic or imitative element is most conspicuous — as in the cuckoo... — there is no tie of necessity but only of convenience; if there were a necessity, it would extend equally to other animals and other noises; and also to all tongues; while in fact these conceptions have elsewhere wholly other names" (Whitney, 1867: 32, 282).

A century on, with total disregard to contrary evidence piling up from the study of brain functional asymmetry, speech ontogeny, from palaeolinguistics, phonosemantics, etc., the basic arbitrarian arguments remain unchanged. Cf.: "What is important ... is the independence of sound and meaning as emphasized in different languages by different words" (Herdan, 1964: xi). Cf. also: "...had words indeed risen from the nature of things and their properties, all the names for things and all the notions about them in different languages would have been the same; in this case there would have been no need for a multitude of different languages" (Whitney, 1867: 32, 282).

Differing in detail, these statements have one fundamental feature in common: they are all based on a *quid pro quo*, on substituting the more general notion of "correlation" (between sign and referent) by the narrower

notion of "one-to-one correlation". This 1::1 correlation is implicitly assumed to be the only possible means of nomination.

What comes of it all is that arbitrarianists, justly coming out against "this [1::1] correlation", tend to throw the baby away with the bath water (the former being the very feasibility of nonarbitrariness). Wrongly ascribing the naive principle of "one referent one sign" ("one thing one name") to iconic theory, advocates of arbitrariness wage a relentless battle against "1::1". Good for them. The only point is that there is nothing to battle against: "1::1" does not exist, and nonarbitrarianists never said it does. What does exist, though, is the M::M correlation.

The existence of synonymy, of different languages, and of differences in iconic words the world over — all these cannot be accepted as arguments against the basically nonarbitrary nature of the sign; they are simply manifestations of the multiple-choice nature of nomination, the M::M correlation, and MultiNom.

2.4. The Homeomorphic Dominance Law

Cross-linguistically, differences in the structure of iconic words have always been exaggerated. Differences (allomorphic features) do exist (chiefly due to the multiple-choice nature of nomination and motivation; for the latter, vide infra: 2.6); but they turn out to be heavily outweighed by similarities (homeomorphic features) and even identical traits (isomorphic features) — isomorphism coming to the fore if we view the structure of the iconic root in terms of phonemotypes (or, more exactly, phonotypes), not concrete individual phonemes (cf. Voronin, 1969, 1987).

What follows is the **Homeomorphic Dominance Law** — a slightly revised version of my earlier Isomorphic Dominance Law (Voronin, 1980: 41, 1982: 189):

• Cross-linguistically, homeomorphic features in iconic systems dominate over allomorphic features, or: In the iconic systems of any two contemporary languages, homeomorphic features dominate over allomorphic features.

2.5. The Motif::Form Law

In different languages, iconic signs similar (or even identical) in meaning are most frequently similar (or even identical) in form, too: their motifs — i. e. salient features of the referent (object) chosen as the basis for its naming — are identical. The less frequent cases of dissimilarity in form are essentially due to the signs having been coined on the basis of different motifs.

The **motif**, or motivating feature, is the basis of nomination (naming), comprising a salient feature of the referent, chosen in the act of nomination to represent the entire referent.

By 'features' I mean not only "built-in", inherent features of the referent, but also those formally "outside" the referent but indispensable to it: e. g. expressive movements (often acting as the basis for naming sundry emotions).

There is no way for nomination to get through to its referent other than via the motif: the motif is the bridge spanning the great divide between thing and name; the very feasibility of this latter hinges on the motif. Nomination is the What; motivation is the Why — explanatory and leading us to comprehend the workings of that mysterious phenomenon, Naming.

It would be expedient to introduce here two new notions (and terms). One notion is that of **isomotivates**: homeo- or iso-semantic iconic signs (i. e. synonyms) coined on the basis of one and the same motif. The other notion is that of allomotivates, which differ from the above in that they are coined on the basis of different motifs. As to the procedure for establishing the motifs, see Voronin, 1990a. I propose here the **Motif::Form Law**:

• Isomotivates are homeomorphic/isomorphic, whereas allomotivates are allomorphic.

This is valid both cross-linguistically and intra-linguistically. Taking this law into account, one arrives at a better understanding of the fundamental fallacy in, inter alia, Whitney's, and Vostrikov's reasoning (vide supra: 2.3.2).

2.6. The Multiple-Choice Motivation Laws

I propose here three MCM laws:

General MCM Law

• In motivation, there is a many-to-many (M::M) correlation in the Sign-Motif-Referent triad.

As in MultiNom (vide supra: 2.3), this correlation includes the 1::M and M::1 correlation.

Specific MCM Laws

(1) One motif (comprising a salient feature shared by more than one referent) may serve as basis for coining a sign naming more than one referent.

(2) More than one motif (comprising more than one salient feature of one and the same referent) may serve as basis for coining more than one sign naming one and the same referent.

2.7. The Iconic Sign Law
2.7.1. General Considerations

Coming into existence as an iconic, nonarbitrary entity, the linguistic sign (and language as a whole) initially develops within the framework of iconicity — up to a point (or rather level) where the iconic resources have served: "(though never completely) been tapped. As Avetian shrewdly observed: "...progress in the sign turns out to be regress in the unity of sound and sense..." (1968: 55).

Cf., from a slightly different angle, in Brandon and Hornstein: "From a synchronic point of view the sign-signified relation may appear to be purely arbitrary ... Diachronically, however, one can trace an evolutionary relation between the sign and what it signifies. In those cases where a sign can be described as phylogenetically iconic (and where we can trace the actual phylogeny) the relation between the sign and the thing it signifies — which synchronically viewed appears arbitrary — can be explained." (1986: 171-172).

In semiosis, what habitually is labelled "non-motivated" (or "unmotivated") and arbitrary, is in reality by and large de-motivated (that which in evolution has become non-motivated) and, respectively, arbitrarized (that which in evolution has become arbitrary).

Baindurashvili points out that there had to be an *immediate* and direct *understanding* of the 'first' words of human speech; non-motivated designations (words) would preclude immediate understanding, making leeway only for understanding on the basis of a convention between members of a sociium; however, in assuming the possibility of *convention*, the scholar (as noted by T. Pavlov) is confronted with *a logical contradiction*: for speech to emerge, the humans had to have come to some sort of understanding — for which they had to have been in possession of fairly developed speech — (Baindurashvili, 1966).

The **general system theory** posits features that are invariably retained when in the chain 'live nature — society' some links are superceded by others (Urmantsev, 1978). It is important, I believe, to stress the fact that many characteristics belonging to the communicative systems of man's animal ancestors and man are among just those "invariably retained features". Cf. in this connection Maslov on "the probable genetic relation of primeval communicative signs with some 'natural signs', symptoms of reactions in the protohuman organism" (1967: 284).

2.7.2. The Sign's Dual Nature

The germ of denaturalization (deiconization) is present (if latent) in the sign *ab ovo*. A vital fact to be realized is that *the sign is born "out of" representation (reflection) — but "for" communication, not representation* (Voronin, 1990, 1991): the most essential function of language is the communication function. Apart from being the motive power for development, this *ab initio* **dual**, conflicting *nature of the sign* was fraught with momentous and far-reaching consequences for its evolution. In the sign as a representation entity, the leading role is played by its homeomorphism with the referent (*vide supra*: 2.2), whereas in the sign as a communicative entity this homeomorphism is of little consequence. With the sign evolving — in keeping, shall we say with its predestination — predominantly as a communicative entity, its representational nature, eroded and blurred, recedes into the background. Fundamentally nonarbitrary, the sign acquires arbitrary (conventional) features.

2.7.3. The Sign's Evolution
2.7.3.1. Abstraction

Opponents of the principle of nonarbitrariness argue that the processes of abstraction — and semantic development in general — taking place in the linguistic sign are testimony to the sign's arbitrariness. According to the widely held view, abstraction is possible "only because the material facet of language units... represents objects... to which it bears no essential... resemblance" (Panfilov, 1977: 47). Abstraction is thus linked to the (allegedly) arbitrary nature of the sign, and the abstraction problem is viewed as a derivative of the problem of arbitrariness/nonarbitrariness. Indeed, arbitrariness may — at advanced stages of language evolution — be conducive to the abstraction process.

I would contend, however, that abstraction is basically indifferent to whether the sign is (already) arbitrary and demotivated or it is (still) nonarbitrary and motivated. This is best witnessed by the fact that the initial nonarbitrariness of sound-symbolic words does not impede their rising to the very summits of abstraction in their semantic evolution; cf., for instance, the cross-linguistically widely attested sense development: 'imitation of breathing → life; spirit; age; eternity' — see, *inter alia*, Voronin 1982: 152-156.

I thus propose to view this problem, abstraction, as a derivative not of the sign's arbitrariness/nonarbitrariness, but of something still more fundamental — the semiotic ('sign') nature of language.

It is hardly fortuitous that the very substitution of one object for another — which is the crucial feature of the sign (cf. Vetrov, Gorsky,

Reznikov, 1962: 177) — is abstraction (albeit elementary): it occurs in animals (providing, among other thing, the basis for the formation of condi-tional reflexes), and, as for man, such representation finds expression in signs (Rozov, 1970).

Fundamentally, abstraction in language stems from the very fact that language uses signs — as representatives (of objects) and models (of the same); the basis of abstraction is thus not the (alleged) arbitrariness of sign.

Hence the 'abstraction argument' is no testimony against the essential nonarbitrariness (iconism) of the linguistic sign.

2.7.3.2. The Phasic Law

A slightly revised version of this law (cf. Voronin, 1980: 41, 1982: 187) follows:

• The linguistic sign develops in stages (phasically): iconic, or natural; natural-conventional; conventional-natural.

2.7.3.3. The Dual Tendencies

I shall now touch upon that peculiar dual system of checks and balances ensuring the semiotic homeostasis of language — the opposing tendencies of iconicity retention and erosion: the sign's evolution is largely governed by the intricate interplay of these two tendencies.

2.7.3.3.1. The Iconicity Retention Tendency
2.7.3.3.1.1. Introductory Remarks

This is the weaker — and harder to discern — of the two tendencies. 'Weaker', however, does not mean 'insignificant'. The significance of this tendency is due to a number of factors. Factor one: the creation of primary onomatopoeic and sound-symbolic formations (Urschöpfung) is not limited only to the dawn of language; new formations are coined in later periods (Paul, 1937). Factor two: special research demonstrates the great potential and scope of iconic words — see, *inter alia*, Marchand (1960), Gazov-Ginzberg (1965), Levitsky (1973), Zhuravlev (1974), Gorelov (1987), Vo-ronin (1999b). Factor three: the largely covert process of the sign's renatu-ralization (reiconization) discovered by Afanasyev (1984); in a broader context, this semiotic renaturalization is of particular interest in the light of "the reversibility of language changes" (Ogloblin, 1993) and the inertia of the iconic function (*vide infra*).

2.7.3.3.1.2. The Tendency

I propose here a formulation for the Iconicity Retention Tendency:

• In evolution, the iconicity of the linguistic sign tends to be retained.

2.7.3.3.1.3. The Iconic Inertia Law

A slightly revised version of this law (Voronin, 1980: 43, 1982: 189–190) follows:

• In phonetic development, iconic function is retained longer than pho-netic quality, or in diachrony, the result of phonetic change of an iconic sound may retain the iconic function of its source.

2.7.3.3.2. The Iconicity Erosion Tendency
2.7.3.3.2.1. The Tendency

In evolution, the iconicity of the linguistic sign tends to be eroded (Vo-ronin, 1980:41, 1982:187).

2.7.3.3.2.2. Elucidatory Remarks

This is by far the stronger (and easier to observe) of the two tendencies. I would hypothesize that the erosion (impairment) of the sign's iconicity is psychophysiologically based, in part, on what I call the process of *reverse verticalization* (Voronin, 1982: 187). The essence of the latter is clear from Luria's and Vygotsky's law pertaining to the hierarchic structure of cortical zones comprising the brain's unit responsible for information reception, processing and storage (*vide* Luria, 1978: 129–130). An illustration of this law is the correlation of primary, secondary and tertiary cortex zones, achieving an ever more complex synthesis of incoming information. The relations between zones, however, undergo a change in the process of onto-genetic evolution. *In early childhood*, successful operation of secondary zones requires the primary to be intact, and the formation of tertiary re-quires the secondary zones (supplying the material for comprehensive cog-nitive syntheses) to be sufficiently well formed. Early-age lesions in lower zones thus ensue in underdevelopment of higher zones and, according to Vygotsky, the main direction in zonal interrelations is *"from bottom to top"*. Conversely, *in adulthood* (with the higher psychic functions fully formed), prime of place goes to the higher cortical zones. The highest (tertiary) zones begin to control the secondary zones (subordinate to them), and vicariate in case of secondary zone lesions: for adulthood, the main direction in zonal interrelations is *"from top to bottom"*, and it is mostly the lower (modality-specific) zones that are now dependent on the higher zones, not vice versa (Luria, 1978).

Cf. Werner's *genetic principle of spirality* (Werner, 1957). A quotation from Werner and Kaplan would be in order: "...with the attainment of higher levels, lower levels of functioning are not lost. Under normal cir-cumstances such lower levels... are subordinated to more advanced levels...

they may come to the fore again, under special internal or external conditions, for example, in dream states, in pathological states, under intoxication further, Jonker: "During vertebrate evolution new structures emerged without replacing the older ones which, moreover, largely retained their function" (1991:47).

Though powerful, the denaturalization process in the sign is only relative: it never achieves anything like the complete demolition of iconism.

As pointed out earlier (in a discussion of the complementarity principle), the archaic, primordial features of nonarbitrariness (primary motivation) are never erased completely in language evolution — they are retained, albeit in eroded form, together with features of that potently burgeoning evolutionary neoterism, arbitrariness (cf. Voronin, 1988).

Approaching icons in terms of Peirce's dual classification (images and diagrams), we observe the following: images (operating chiefly in the lexis) are holding sway in expressive speech (their *éternel printemps*); as to diagrams (rampant in grammar), they never actually caved in to this process of relative denaturalization.

There is yet another twist to this: an aspect seldom if ever noted. The development of language is never confined to that surface stream of overt conscious effort — there are always the workings of a subsurface stream of covert *subconsciousness*. Linguistic iconism belongs to both streams. The fairly limited number of new iconic formations being coined in present-day languages should not mislead us into exaggerating, on the basis of this surface *prima facie* evidence, the scale of iconicity erosion in language: we have no evidence suggesting that the subconscious stream is running dry. Consider, for instance, never-waning 'mysterious' phenomena like synesthesia, secondary sound symbolism or the paronymic tendency for words of like sound and sense to flock together, consider, too, the sound-colour pattern of poetic texts: for this, *vide* Zhuravlev (1982). The problem *Language and the Subconscious*, with its implications for language origin and evolution, calls for global cross-semiotic and cross-linguistic interdisciplinary study.

2.7.4. The Sign's Genesis: The Iconic Sign Law

And now, reversing the direction (from 'down' to 'up', i. e. from 'modern synchrony' → 'genesis' to 'genesis' → 'modern synchrony'), we arrive (cf. Voronin, 1980:31) at the law formulated for the *in statu nascendi*:

• In origin, the linguistic sign is iconic (natural, nonarbitrary).

With its pivotal element, the sign, evincing iconic origins, language itself can be none other than *iconic in origin*.

3. Conclusion

The present paper hardly needs a special rubric like this, for the chief conclusion essentially was the **Iconic Sign Law** (2.7.4). A few remarks, however, may be in order.

The **15 laws and tendencies** formulated within the framework of *Phonosemantics* (5 of them presented for the first time) help pave the approaches to the Iconic Theory of Language Origin.

Apart from the laws and tendencies discussed, where is the evidence supporting the theory? The evidence is perforce circumstantial — but the sheer number and significance of the various quarters it comes from achieves a 'critical mass' that brings forth a persuasive cumulative argument for iconicity; a detailed systematic discussion of what I call the Circumstantial Evidence Chain will be given in a forthcoming paper.

Phonosemantics of course accounts for only half the picture of the Iconic Theory. The other half (and, glossogonically, the better half) is accounted for by *Kinesemantics* (cf. Voronin, 1982: 195; on this, in further publications). Both halves are an integral part of what may be called *Linguosignosēmantics* (*Signosēmantics*), a science-to-be, treating of the link between the linguistic sign, in both its phonic and gestural forms, and its referent.

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3. IN DEFENCE OF THE PAN-PHYSEISTIC THEORY OF LANGUAGE ORIGINS

XVIeme Congrès International des Linguistes, Paris, 1997.
Language Origins Research: State of the Art as of 1997.
Convolute of Abstracts for a Workshop organized and chaired by Gyula Décsy.
Occasional Papers of the International Paleolinguistic Society. Facs. 1.
Bloomington, Indiana, 1997. P. 13.

Theseistic (conventionalistic, arbitrariness-oriented) theories either side-step the pivotal issue of language origins proper (discussing mainly *the conditions* of language origins) or skip it, landing one step up and passing on to the discussion of language evolution and not language origins. Arbitrarianism never actually tackles the problem: it evades the issue, not pervades it. (...)

Physeistic (iconic, natural, non-arbitrary) theory, erstwhile discredited, is now rallying — resuscitated by the manifold nature and the sheer mass of crucial new evidence pointing to iconic origins. Among the mass of fresh evidence is the cerebral asymmetry: right hemisphere is more archaic in origin and is responsible for iconic production. (...)

Long overdue now, a "Paris Reassertion" (vs. the Paris Prohibition) is possible. (...)

4. THE ICONIC THEORY OF LANGUAGE ORIGIN: GENERAL CONSIDERATIONS

1. Introductory remarks

Homo sapiens 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 glosso-gonic beverages was forbidden by an article in the constitution.

Officially the Paris Prohibition lasted for twelve years (1866–1878); un-officially, it is still alive and kicking — kicking hard. Though here, too, there is an inkling of perestroika. This inkling is the Language Origins Re-

search 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...

* * *

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 *Osnovy 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 (see e. g.: Bertalanffy, 1968; Sadovskij, 1974; Solntsev, 1977; Ujomov, 1978; Melnikov, 1978) was a prerequisite of paramount importance for the emergence of Phonosemantics. See also 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; 1990c).

The aim of Phonosemantics as a linguistic science *sui generis* is the study of the phoniconic (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 sys-

tems and (b) systems differing chronologically (in origin, in evolution, in modern synchrony). (...) [For the phonoiconic systems chief property, see Voronin 1980: 8f, also Sect. V. 1 in this volume.]

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).

Phonosemantics has, to date, a number of attainments to its credit: Systems theory for primary semiosis; Laws and tendencies in primary semiosis; The principle of the dual nonarbitrary-cum-arbitrary nature of the linguistic sign (as opposed to de Saussure's *signe arbitraire*); The broad synchrogenetic concept of the nonarbitrary primarily motivated phonic linguistic sign — the iconic word (onomatopoeic or sound-symbolic); [See on above in Sect. II.1]; Genetic phonosemantics (treating the sign in *statu nascendi*); Kinephonosemantic component of linguistic competence (ontogeny); Iconic theory of language origin (phylogeny).

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; Bratus, 1976; Lapkina, 1979; Klimova, 1986; Sabanadze, 1987; Slonitskaya, 1989; 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 sing, the origin of language (to name but a few) [Cf. below Sect. III.2].

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).

This idea was elaborated by A. M. Gazov-Ginzberg: "...on the other hand, classical Marxist works, while defining the conditions of the emergence of speech, did not actually touch upon problems like the origin of language material or the formation mechanism for the sound-sense link. (...) It would thus be hard to regard as fully justified the approach that had gained currency in our... literature (Introductions to Linguistics, encyclopedias) — an approach setting the above-mentioned pre-Marxist theories on a collision course with "Marxist views on the origin of language", views that patently leave unanswered the question of language material origin, of the formation of the sound-sense link" (Gazov-Ginzberg, 1965: 4). I would sum this up as a clear case of cohplementarity ("A." plus "B.", in my scheme, above) not contrariety ("A." versus "B.").

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 of 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 the 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, 1989: 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? [See above, Sect. III.3]

A graphic illustration is the stance taken by F. de Saussure's arbitrarian 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? Arbitrarian 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 arbitrarians 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 pre-supposition, 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 meta-phoric 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, Synkinaesthemia (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 lexico-statistics; protolinguistics; etymology; typology; method of phonosemantic analysis; iconic sign potentialities: 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 works on language (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

A detailed critical analysis of theseist arguments will be undertaken in a further publication. In the present paper, I address 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 sound sequences. A single element cannot be variated. 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, also Appendix 4, section 4.2 below).

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

Sign \	Function		Formation (coinage)		Diachrony	Form	
			Non-Arbitrary (motivated)		Arbitrary (demotivated)		
Time (stages)	Representation	Communication	Primary (iconic, natural)	Secondary (morphological and semantic)		Gesture	Word
Origin							
Evolution — Earlier							
Evolution — Later							
Modern							

The Sign in Time: A Non-Arbitrarian Function. The germ of relative denaturalization (deiconization) is present in the sign ab ovo. What should be realized and borne in mind is that [as has been shown earlier, see sect. 2.7.2] 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, 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 predominantly in its communication function, its representational nature 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. Non-arbitrariness in general and iconism in particular are inherent features of the sign, 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 further. 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 non-motoric steering center in the

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			Primary (iconic; natural)	Secondary (morpho-logical and semantic)			
Origin — Earlier							
Evolution — Later							
Modern							

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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. Non-arbitrariness in general and iconism in particular are inherent features of the sign, 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 further. 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 non-motoric steering center in the

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IV. SEMIOSIS

1. THESEI THEORY AND SAUSSURE'S ARBITRARINESS

Thirteenth Meeting of the Language Origins Society. Abstracts. Pilsen, 1997, p. 16.

Now what do the two have to do together, under/in one heading? — Not much, at first glance. Quite a lot, on second thoughts. Why?

Of the set of principles proposed by Ferdinand de Saussure for linguistics, number one is his Principle of the Signe Arbitraire: the linguistic sign is seen to be arbitrary, non-motivated, conventional. Of course this was primarily meant for modern linguistics/languages, but approach this from semiogenesis and language origins — and there you have it: that very "language as convention" thesei theory of olden times.

Thus Saussure *de facto* lent his support, with his authority in the linguistic world, to the thesei side in the eternal physei-thesei debate. And badly did the theseists, or arbitrarianists, need such like support.

They needed it in the face of the ever rising (if seldom acknowledged) tide of evidence for iconism (primary gesture, onomatopoeia, sound symbolism) (in)advertently playing into the hands of the physeists.

Why the great arbitrarian/theseist illusion of the linguistic sign's fundamental arbitrariness? Discussed are some aspects of semiosis that, in my view, contributed to this (e. g. multiplicity of choice in nomination and motivation: gestaltlike nature of nomination and motivation, the sign's dual nature: representation versus communication: denaturalization, i. e. partial deiconization of the sign). In today's linguistics, arbitrarianism and theseism are two cornerstones come loose. The paper looks at the what, the how, the wherefore (...)

2. ICONISM'S SEVEN HURDLES

Материалы XXXII Международной конференции преподавателей и аспирантов филологического факультета СПбГУ. Вып. 25. Секция фоносемантики. 11–15 марта 2003. СПбГУ, 2004.

There are at least **two cornerstones** to semiotic **arbitrariness**: one "genetic", one "contemporary". The former is thesei theory, the latter is Saussure's Principle One — *l'arbitraire du signe*. ...the **physeists'** theory, erst-

while discredited, is now rallying — resuscitated by the manifold nature and the sheer mass of crucial new evidence.

Evidence for iconism (both genetic and contemporary) was painstakingly amassed regardless of mainstream linguistics. No: not 'regardless of' — *in defiance of* mainstream linguistics. I am not aware of any other problem fated to run against such an unprecedented combination of singularly **unfavourable factors** as was linguistic iconism.

Let us look at **Iconism's Seven Hurdles.**

Hurdle 1: Masking of Iconism in the course of relative deiconization of the sign. (Deiconization, or denaturalization, is the process of the original similarity features between sign and referent; it is the erosion of the original sign becoming an arbitrary-like, conventional sign not readily displaying its natural, iconic features.) As cited earlier, Brandon and Hornstein observe: 'From a synchronic point of view the sign :: signified relation may appear to be purely arbitrary... Diachronically, however, one can trace an evolutionary relation between the sign and what it signifies" (Brandon, Hornstein 1986: 171–172). Though powerful, the deiconization process in the sign is only relative: it never achieves anything like the complete demolition of iconism. What it does achieve is masking — the thorough camouflaging of a sign's iconic origins. And arbitrarians seldom search beyond the superficial layers of what **only** **appears** to be **arbitrary** (this is, in a way, understandable: why bother about something that is — purportedly — based on chance and has no causality). **Hurdle 2: Plato's** misguided idea that the naming of things is based on essential features of the latter. In reality it is the non-essential outward, salient 'eye-catching' features, as stressed later by Ludwig Feuerbach (the exception here is of course scientific terminological systems). **Hurdle 3: Discredit** brought on the entire **field of iconism** by early simplistic studies, bungling and dilettantish. **Hurdle 4: The Paris Prohibition** (the Société de Linguistique's 1866 ban on accepting papers dealing i. a. with language origin: the iconic physei branch was thus effectively chopped off the tree of language origins research). **Hurdle 5: The Junggrammatiker** conservative tradition in **etymology**, with its sound laws that know no exceptions (onomatopoeic and sound-symbolic words, hyperanomalous and hypervariative, hardly fit the "ausnahmslos" pattern). **Hurdle 6: "Wrong ideas".** A specifically Soviet factor: work on iconism was considered to be a sign of adherence to "those wrong philosophical ideas" typical of the "rotting capitalist West". **Hurdle 7: Saussure's principle of arbitrariness** of the linguistic sign, dominant in modern linguistics.

A formidable array of overtly or covertly adverse factors! And it is these (and other) daunting hurdles that iconists (i. e. non-arbitrarians) have to clear on their way. As big as life and as real, these are, ironically, based on something irreal and illusory.

Now **why** the great **illusion** of the linguistic sign's fundamental **arbitrariness?**

In today's linguistics, 'genetic' and 'contemporary' arbitrariness are **two cornerstones come loose.**

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3. THE SOUND/SENSE RIDDLE: EVIDENCE FROM GERMANIC LANGUAGES

Paradigmatic and Syntagmatic Investigations in Germanic Languages Abstracts. Vilnius, 1989. P. 109–110.

1. As J. R. R. Tolkien remarked, "the riddle-game was sacred art of immense antiquity". (The Hobbit. Ch. 5: Riddles in the Dark). The sound/sense riddle, to be sure, is no game. But it is undoubtedly of great antiquity (cf. Plato's Kratylos). And since F. de Saussure it has undoubtedly become something of a sacred cow — in a curious lop-sided and biased way, the bias in modern linguistics coming to rest heavily on the 'arbitrary' part of the 'arbitrary :: non-arbitrary' dichotomy of the linguistic sign. Despite the prodigious — and steadily accumulating — evidence from diverse language families, the Saussurean (or quasi-Saussurean) sacred cow of the 'arbitrary sign' tenet is loath to give ground.

2. The paper discusses evidence (etymological, psycholinguistic, ontogenetic and c.) from a number of Germanic languages pointing to the fact that the role and scope of onomatopoeia and especially sound symbolism in language is such that it necessitates a complete reappraisal of the nature of the linguistic sign.

3. The riddle is there — whether we like it or not. In itself a dead end, the 'arbitrary' solo has proved to be no solution to the sound/sense riddle. In the quest for the true nature of the sign, the solution is to be sought in a balanced two-pronged approach giving arbitrariness its due but concurrently fully appreciating the prodigious stock of non-arbitrary iconic formations — in Germanic languages, and in the entire Language Universe.

4. THE LINGUISTIC SIGN: BOTH NON-ARBITRARY AND ARBITRARY (A RETHINK OF SAUSSURE'S PRINCIPLE ONE)

Ferdinand de Saussure's fundamental Principle One — 'The linguistic sign is arbitrary', i. e. non-motivated — sidetracked, from the very start, the motivated vocabulary, motivated element in the lexis, belittling the role of primary-motivation.

However, extensive research in the highly unorthodox field of primary-motivation, or iconicity (e. g. O. Jespersen, M. Grammont, E. Sapir, R. Stopa, R. Jakobson, I. Fonagy, A. M. Gazov-Ginzberg, R. Wescott, J. Ohala, I. N. Gorelov, A. P. Zhuravlev, V. V. Levitsky, R. Allott, W. Koch, J. Nyikos, S. V. Voronin) unearthed the fact that, contrary to popular scholarly lore, onomatopoeic and especially sound-symbolic words develop the most abstract meanings and are highly productive in word-formation, their scope is much broader and their number is far in excess of earlier estimates (*Voronin S. V.* Osnovy fonosemantiki. Leningrad, 1982 — Fundamentals of Phonosemantics, in Russian).

Parallel to this, research in the perfectly orthodox field of secondary motivation (e. g. F. Dornseiff, B. Quadri, G. O. Vinokur, Yu. S. Stepanov, G. E. Melnikov, R. A. Budagov, A. I. Moiseyev, E. S. Kubryakova, V. N. Telia) leads us to conclude that the scope of semantic and morphological motivation is immense.

What is left for possible arbitrariness is the relatively few simple-stem non-derived lexemes. Quite a number of these are labelled 'origin unknown', the latter increasingly found to be iconic in origin. We see the field of possible arbitrariness in the lexis shrunk to a minuscule patch. Surely this is too small a foothold to support a principle's claim to fundamental universality. Necessitated then is a drastic rethink of F. de Saussure's Principle One.

The Linguosemiotic System (i. e. the Semiotic System of language) turns out to be a contradictory unity of two complementary sets of signs: (A) Non-Arbitrary, Motivated and (B) Arbitrary, Non-Motivated (either Demotivated or Not Known to be Motivated) (cf. Voronin 1988). Set (A) includes two subsets: subset (A1) Primary-Motivated (Onomatopoeia and Sound Symbolism) and subset (A2) Secondary-Motivated (Semantic Motivation and Morphological Motivation). Important features pertaining to (A1) are: Iconic, Right-Hemispheric, Earlier Origin (Older), Gestaltlike, Metaphoric; for (B), these are: Non-Iconic, Left-Hemispheric, Later Origin (Younger), Non-Gestaltlike, Logical. Depending on the evolution period

and/or tasks performed, a particular set/subset would come into prominence, the iconic elements never dying out.

Superseding the old principle ('The linguistic sign is arbitrary'), the new principle I herein propose is (cf. Voronin 1989):

The linguistic sign is both non-arbitrary and arbitrary.

The linguosemiotic system includes, as we know, two basic forms of sign: (1) the phonic ('sounding') word and (2) gesture. Saussure's formulation was restricted to (I) The new principle is valid for both (1) and (2). A detailed discussion of the gestural (kinemic) sign will be given elsewhere.

According to Th. Kuhn (The Structure of Scientific Revolutions), science follows a three-fold process of paradigmatic development, expansion, and refinement — a paradigm being a set of assumptions about theory and procedure shared by a majority of the members of a scientific community. Having run its course, a paradigm is, in most cases, replaced by a new paradigm, based on a different set of assumptions. This replacement is referred to as a scientific revolution. One of the primary factors precipitating a scientific revolution is the gradual accumulation of anomalies: data that fail to fit that paradigm might provide the raw material for a new and different paradigm (R. Wescott).

But this is precisely the type of situation building up in the theory of the linguistic sign! I am thus compelled to come up with the following statement/prediction:

Linguistics is on the threshold of a scientific revolution: the solo Arbitrary Sign Paradigm will, in the foreseeable future, be superseded by the duo Nonarbitrary-cum-Arbitrary Sign Paradigm. [Cf. below, Sect. V. 4.].

Note: The original text of the abstract had the following table, which for technical reasons did not appear in print.

The linguosemiotic system

(A) Non-Arbitrary, Motivated		(B) Arbitrary, Non-Motivated (either Demotivated or Not Known to be Motivated)
(A1) Primary Motivated (Onomatopoeia and Sound Symbolism)	(A2) Secondary-Motivated (Semantic Motivation and Morphological Motivation)	
Iconic Right-Hemispheric Earlier Origin (Older) Gestaltlike, Metaphoric	Non-Iconic	Non-Iconic Left-Hemispheric Later Origin (Younger) Non-Gestaltlike, Logical

Notes to Table:

1. Information on the respective features of the intermediate (A2) is as yet insufficient.

2. A crucial evolutionary characteristic of the right hemisphere is its earlier origin — as opposed to the left hemisphere (Balonov, Deglin 1976). Right-hemispheric, iconic signs are in origin (evolutionarily) earlier (cf. Chernigovskaya 1995) — which does not preclude the emergence of new iconic formations at later stages in the history of any particular language.

5. ENGLISH ONOMATOPES: A PHONOSEMANTIC CLASSIFICATION

(Summary)

Excerpt II

This book was due to appear some twenty-five years ago. It did not. Not under soviet rule. Mainstream linguistics doggedly persisted in inhibiting the rise of phonosemantic heresy.

Updated, the book appears now — thanks to St. Petersburg's Institute of Foreign Languages. (...)

The Preface, written in 1997, includes definitions of the phonotype (introduced by the author in 1969). (...) The Preface also includes a first formulation of the basic *Iconic Sign Structure Law* (for simple-stem formations): "The iconic sign is a function of the motif type". A possible formulation for the onomatopoeic phonoiconic sign — i.e. the onomatope — would be "The structure of the onomatope is a function of the acoustic motif type's structure" (...)

6. THAT ELUSIVE PHONOTYPE: A DEFINITION, AT LAST

Fifteenth Meeting of the Language Origins Society.
Abstracts. Naples, 1990. P. 17–18.

1. A systemic cross-linguistic study of over 10,000 phonoiconic (i. e. onomatopoeic and sound-symbolic) words in more than 100 languages (mostly those traditionally considered unrelated) yielded *inter alia* a universal classification of these words, as well as over 200 absolute phonosemantic universals (Voronin 1969; 1980; 1982; 1994). Among those listed were the following: — phonoiconic words form a system; — there is a regular natural correlation between the phonoiconic word and its referent; — given the motif-type of nomination (naming), we can predict at least one phonotype (phonemotype, speech sound type) in the phonoiconic root; — at least one phonotype in the phonoiconic word is of a nature identical with the word's referent-type.

2. Established empirically and presented only with explanatory examples (Voronin, 1969; 1982; 1987; 1992), the phonotype, a category central to the onomatopoeic and sound-symbolic word, long eluded theoretical definition. The intrinsic complexity of precisely defining a sophisticated novel category, egregiously unorthodox in nature, precluded any speedy solution to this knotty problem.

3. We are now, however, in a position to submit a definition for that elusive category. Here are its detailed and succinct versions, whose first Russian and English formulations appeared in the 1997 Preface and Summary to a book published a quarter of a century after its completion (Voronin 1998: 9, 196; 2004: 10, 190).

Phonotype (acoustic or articulatory): speech sound type containing a phonetic feature type (acoustic or articulatory) homeomorphous with (i. e. similar to) the referent feature type (acoustic or non-acoustic) serving as basis for phonoiconic (onomatopoeic or sound-symbolic) nomination; *Phonotype*: speech sound type containing a phonetic feature type homeomorphous with the motif type.

4. The Object (i. e. thing denoted) is imprinted in the Word — generally speaking, yes. If, however, we are to be more specific, we would say that The Object is imprinted in the Phonotype, and The Phonotype is an immediate gestalt imprint of the Object. (It is not now clear if we should stop short of claiming that, perceptually and linguistically, the Phonotype is the Object fossilized — a fossil preserved for human communication across time and space).

V. VARIA

1. PHONOSEMANTICS AND TRANSLATION

For translators, *linguistic iconism* (onomatopoeia and sound symbolism) has always been something of a stepchild. Translation theory was never aware of it as a problem in its own right. But then maybe it is not — and so serves it right? In point of fact, it is — a great problem, virtually unexplored, and meriting all the attention it can be accorded. This is becoming increasingly clear with the rise of Phonosemantics (see Voronin, 1982), a new branch of linguistics dealing with the bond between sound and sense. This article is a first approach in discussing the relation of Phonosemantics to Translation Theory (and Practice). But first, Phonosemantics: the Why? the Wherefore? the What? (...)

Phonosemantics investigates the vast domain of linguistic iconism (as instanced by onomatopoeia and sound symbolism), and — taken from somewhat different angles — primary motivation (the sound/sense link in a word, expressive speech). From the point of view of the iconic system's chief property, the aim of phonosemantics would be the study of iconism as the indispensable, essential, recurrent and relatively stable non-arbitrary phonetically (primarily) motivated tie (relation, bond) between the phonemes of a word and the property of the *denotatum* that serves as the basis for nomination/motivation. (...)

A crucial problem in translation theory/practice is that of *equivalence* (translational adequacy). Let us examine some implications of phono-semantics in relation to this — as a first step (most elementary and thus most lucid), on the level of individual onomatopes (onomatopoeic words).

Onomatopes in a Source Language (SL) are largely regarded as having no equivalents in a Target Language (TL); they thus belong to the non-equi-valent ("equivalentless") stratum of the vocabulary (this is the contention e. g. in Vlakhov and Florin, 1986: 314–317); this is explicitly postulated for interjectional root-formations; as to derivatives — verbs or nouns — we are, however, left in doubt about these. For a detailed discussion of this

point, see the by now published (Voronin and Yermakova, 1991); see also (Bartashova, Voronin, Yermakova, 1990; Yermakova, 1993).

The non-equivalency argument is based on the widespread belief that onomatopes *differ drastically* from language to language. Do they? They do — and they do not. The isomorphism (similarity) that prevails over allomorphism (dissimilarity) in the iconic words of any two (unrelated) languages cannot, as a rule, be revealed on the level of concrete individual phonemes (instances like the English *ting* and Indonesian *ting*, both signifying the sound of a small bell, are very infrequent). (...) [See above: Sect. II.3, II.4).

Let us abstract ourselves from the largely random minutiae of concrete individual phonemes; let us try and see if they fall into some non-random recurring pattern. Let us think big: *Magna curare, parva neglegere* (think big — but not too big: patterns like "consonant + consonant" would be too generalized, and would lack the desired predictive clout). The obvious diversity I mentioned is misleading: in this diversity there is an underlying unity...

To come back to the query: Do onomatopes differ drastically from language to language? They may — if viewed from the traditional individual phonemic standpoint. They do not — if viewed from the proposed phonemotypic (or, more precisely, phonemotype-pattern) vantage point. In sum, the "*drastic difference*" turns out to be *a myth*. I thus find it hard to agree with S. Vlakhov and S. Florin when, citing onomatopes designating intense sounds caused by a stroke or shot — like the English *bang!*, Chinese *dun!*, Rumanian *bam!* — they find these formations to have nothing in common (see Vlakhov and Florin, 1986: 316).

Cognition and semantics start "*way below*" the lexemic level; it is not the word that is the first stage in verbalized cognition — it is the phonemotype. I would venture the hypothesis that, in terms of cognitive semantics, the phonemotype is, on the sub-lexemic level, an analogue of the prototypical "basic-level" word. Thus the phonemotype, stemming from phonosemantics (and being its potent instrument), may also be of value to *cognitive semantics* (or should we say: cognitive phonosemantics?). Cognition is knowledge, and this also embraces "knowledge in advance", i. e. predictive (prognostic) and heuristic knowledge. This tallies with the predictive and heuristic potential that is a salient feature of the phonemotype, or, to be more precise, phonotype (for the latter, see Voronin, 1989b; 1999; see also sect. IV.6 above).

The phonotype/phoneme duality of onomatopoeia (and of iconism as a whole) should, I believe, be seen as a parallel to the *universal/specific*

duality of the cognitive-semantic organization of language, which latter is, to quote Barbara Lewandowska-Tomaszczyk, "shaped by a set of universal preconceptual structures, which are specified and expanded by socio-cultural and experiential factors".

Such a model of meaning "accounts for the common cognitive core (nota bene! — S. V.) in the semantic structure of translated texts while, at the same time, it is responsible for the meaning asymmetry between the Source and Target languages in the form of deletions, additions, or figure-ground alterations" (Lewandowska-Tomaszczyk, 1992).

Translated into translational terms, the panlinguistic universal/specific duality is mirrored, in part, in what I would call the problem of *shared knowledge vs. skewing*.

The problem of *skewing* (e. g. asymmetries in the lexis, including meaning 'loss and "lexical holes"') has always been centrefield for the translator. And no wonder: gastronomically speaking, it really is a fascinating task — trying to match the yummy wafers of SL and TL: as you nibble at them, you perceive that only some layers in those crunchy hierarchically organized wafers are equithick/equithin, other layers being hopelessly skewed; cf. (for grammar and semantics, and with no gastronomic overtones): "the skewing found in one language does not match that found in another language" (Larson, 1990).

In contrast to that, the problem of *shared knowledge* (including knowledge that language users would not necessarily be aware of) never got much attention from translators. But we are now coming to realize that the patently universalistic tendencies in linguistic iconism — as well as the cognitive-semantic organization of languages — may facilitate (if taken into consideration) the Herculean labours of the translator.

Discussing George Dunbar's illuminating paper at the Colloquium in Lodz (Dunbar, 1990), I noted that psycholinguistics had done a lot to demonstrate the great role played by onomatopoeia and sound symbolism in the world's languages. I then asked if in G. Dunbar's psycholinguistic comprehension theory there would be a place for *iconism* as a smooth natural *go-between in translation*. Significantly, the answer was Yes. Incidentally, this is also borne out by my own practice of teaching translation (undergraduate students, English Department, Leningrad, now St. Petersburg, University).

The "*shared knowledge*" element in *onomatopoeia* lies fairly close to the surface. But what of sound symbolism? That element is there, too; but it is much less tangible — so much so, in fact that it takes extensive experimental probing to establish the fact.

I adduce here a *synopsis* of some of the more significant *experimental evidence*, as given in Robin Allott's in-depth study of *sound symbolism* (Allott, forthcoming). Müller (1935) attempted to meet the difficulty that sound symbolism of natural words might be peculiar to a single language, a cultural artifact, by testing with children whether words drawn from remote languages (Samoan, Bantu, Eskimo) were felt to be appropriate. He chose such words as *tumba* "swelling" and *ongololo* "centipede", where the appropriateness seemed apparent — but his results could have been vitiated by unconsciously biased selection of the words used. Tsuru and Fries (1935) followed a different plan. Tsuru compiled a list of 36 pairs of Japanese antonyms ("hot-cold", "high-low", etc.) and used as experimental subjects 57 native English-speakers with no knowledge of Japanese. The subjects were asked to match the English pairs of antonyms. A chance result would have been that they should guess correctly in 50% of cases; they guessed correctly significantly more often than this and therefore must have been offered some clue to the right answers by the form or sound of the Japanese words. These results suggested (since Japanese is taken to be a language unrelated to English) that they must have been relying on some universal phonetic symbolism. Roger Brown (1958) commented that even this experiment is subject to the criticism that there may have been selection by the Japanese experimenter of words which happened to bear some relation to the corresponding English forms, or that there may in any case be coincidences between forms in Japanese and English which would lead to apparently better than chance results. Allport (1935) sought to evade these criticisms by translating Tsuru's set of antonyms into Hungarian (unrelated to Japanese or English) so that any unconscious selection would be nullified. Nevertheless, the Hungarian words were guessed by the experimental subjects with more than chance success. Black, Brown and Horowitz (1955) did an experiment with pairs of words translated into Chinese, Czech and Hindi which 85 subjects had to guess. The results again were above chance. R. Brown commented on these experiments that English-speaking subjects matching words with Japanese, Hungarian, Chinese, Czech, Hindi and Croatian languages, were always right more than half the time, which suggests that there are resemblances between sound and meaning apparent to men everywhere and that these have played some part in the development of all natural languages with the result that semantic rules in totally unfamiliar languages do not seem to us to be quite arbitrary. Ertel and Dorst (1965) found confirmation for expressive sound symbolism in twenty-five languages. They asked native speakers to make tape recordings of terms of emotion in the different languages. The subjects

who listened to the tape recordings had to decide whether the sound sequence had a "positive" aspect (good, happy, etc.) or a "negative" aspect (bad, sad, etc.). Such a matching succeeded in all languages with a probability in excess of chance. ... So much for shared knowledge in sound symbolism (so much, indeed).

To sum up: the problems discussed above lead us to believe that Phonosemantics may have a say in Translation (and vice versa); the two are confronted with quite a number of issues that are common ground for them. A more detailed discussion would be the subject of a further study.

Translation is adventure. Translation is fun. It is that ever-present urge to know: to know what is on the other side of the fence or the barrier — the language barrier. You cannot tear down that barrier like the Berlin Wall; the barrier will be there as long as different languages exist. But you can provide steps for a stile in the fence that is the divide between the two pastures green.

One of Roman Jakobson's classics was that work of intrinsic value, "Quest for the Essence of Language" (Jakobson, 1971), wherein he dwelt on diverse phonosemic issues. Today, *the translator-cum-phonosemanticist* presses on in his *Quest for the Essence of Translation*.

Acknowledgements

I would like to acknowledge my debt of gratitude for the stimulating discussions on phonosemantics I had in London with Robin Allott, and on translation theory — in Lodz — with Barbara Lewandowska-Tomaszczyk and Marcel Thelen, likewise in Leningrad and Guilford with Peter Newmark.

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Yermakova N.M., 1993. The pragmatics of translating English phonoiconic words into Russian (In Russian) // Fonosemantica i pragmatika. Ed. by Ju. Sorokin. Moscow. P. 48–49.

2. PHONIC ICONISM IN THE FAIRY-TALE
(THE EVOLUTIONARY DIMENSION)
(In collab.: M. V. Ivanova)

It has long been noted that in their speech smaller children use phonic iconisms (onomatopoeic and sound-symbolic words) much more profusely than bigger children or adults do. This feature, we assumed, should find reflection in literary work meant for children (cf. Voronin and Ivanova, 1987).

To test this hypothesis, we analyzed 35 fairy-tales belonging to 25 different English-speaking authors (cf. Ivanova, 1990).

Employing methods of statistical analysis we found that our hypothesis is borne out of facts, the lower the age of the child the book was intended for, the greater the number of iconisms in it, and the greater their frequency of occurrence.

Books for bigger children (ages 8–10) yielded an average concentration of 50 iconic word occurrences per total of 1000, while fairy-tales for smaller kids (ages 3–5), had a much higher concentration: 75. In other words, the number of phonic iconisms in fairy-tales for children aged 3–5 is more than 1.5 times their number in those for children twice their age.

The degree of text iconicity is thus inversely proportional to the age bracket the children's book was intended for. In a more generalized way, the formulation (also borne out by evidence outside the scope of our study) would be: Iconicity is inversely proportional to age.

These results are not surprising. As fairy-tales are created for children, they should be easy for them to understand. Being very expressive, emotional and picturesque, phonic iconins are used (deliberately or not) by children's authors to create a simple but vivid, lively, figurative narrative that appeals to a child's imagination and corresponds to the level of his/her emotional, mental and linguistic development.

3. SOUND SYMBOLISM IN THE CLASSROOM

(...) Breaking through the barriers of some deep-rooted myths, special research demonstrates that the majority of sound-symbolic words are capable of developing the most abstract meanings and of being highly productive in word formation; their scope is shown to be much broader (even to the extent of making inroads into the vocabulary of terminology); their number is demonstrated to be far in excess of earlier estimates. As Prof. Roger Wescott remarked, "Language is replete with iconicity".

Browsing through the Selection of Frequent Terms in Recent English, adduced by Prof. Barnhart in his illuminating paper at the Conference, I came across 25 items (out of 76) containing at least one component that was sound-symbolic in origin (as "anxiety" in "anxiety attack", "scratch" and "sniff" in "scratch-and-sniff", etc.). I have reasons to surmise that further research would show this percentage to be even greater. Incidentally, a substantial portion of the 800-odd words from my Concise Etymological Dictionary of Sound-Symbolic Words in English (in preparation) is productively active in my EFL classes with graduate students.

Sound-symbolic words are not only words that are felt to possess a phonetically motivated bond between sound and sense; sound-symbolic are all those countless words where, in the course of historical development, this bond has become obscured but where it can be discovered with the aid of "deep down" etymological analysis buttressed by "external" typological data (i. e. data from "unrelated" languages) (sec: S. V. Voronin. Osnovy fonosemantiki. Leningrad, 1982). These lexemes are seldom adequately represented in dictionaries. This has been observed by a number of scholars. Y. Malkiel suggested a "cool-headed re-examination" of the situation, while V. J. Abaev bluntly called the etymologists' "inattention to sound symbolism" a "big mistake". I may add that sound symbolism has received too little attention in foreign language teaching.

Prototypicality, as discussed in Prof. Dr. Werner Hüllen's instructive paper The Didactic Potential of Cognitive Grammar, may be considered to be a close relative of sound symbolism. We are now coming to realize that the universalistic tendencies in sound symbolism coupled with the prototypical element in the cognitive-semantic organization of languages may facilitate the work of teachers of English and in a more general sense of teachers of foreign languages.

The above leads me to suggest that sound symbolism (and phonosemantics) may — and should — have a say in the classroom, in ELT, and (to quote Prof. Robert Blair's pacemaking paper at this Conference) in that "very central concept" of "subordinating teaching to learning".

4. TOWARDS PHONOSEMANTICS IN FOREIGN LANGUAGE TEACHING

Many of us are presumably familiar with that BBC programme, Words of Faith. The opening remarks in this paper will be my Words of Faith dedicated to Professor Lev Rafailovich Zinder, recently deceased. Professor Zinder was a phonetician — a true phonetician. Bur above all he was a linguist, whose classic monograph General Phonetics was a landmark in the curriculum vitae of General Linguistics. On a much more personal note, my Words of Faith and Grateful Remembrance go to Professor Zinder for his warm support (years and years ago) — together with my late tutor and friend Natalia Nikolayevna Amosova — of my work on phonetic motivation in the vocabulary of English. This work eventually led to establishing the new linguistic science of Phonosemantics, which explores the sound-sense link in the linguistic sign. The new science has grown to be a bridge spanning the great divide between Phonetics and Semantics.

Phonosemantics brings us to realize that linguistics is on the threshold of a scientific revolution (cf. Thomas Kuhn's Scientific Revolutions). I make so bold as to come up with this prediction: the outdated solo Arbitrary Sign Paradigm (F. de Saussure's *singe arbitraire*) will, in the foreseeable future, be superseded by a duo Arbitrary-cum-Nonarbitrary Sign Paradigm (cf. my paper The Sound/Sense Riddle, in: Paradigmatic and Syntagmatic Investigations in Germanic Languages. Vilnius, 1989). [Cf. above Sect. IV.3]. Special research shows that the semiotic system of language today is a contradictory unity of arbitrary (conventional, secondary, "rational", non-iconic) and nonarbitrary (natural, primary, emotional, iconic) elements complementing each other (cf. Niels Bohr's Complementarity Principle).

Cognitively, the "rational" (intellectual) component is just as universal (universally understood) as the emotional (expressive) component: man's thinking and emotions are largely the same the world over. Linguistically, however, the "rational" component is at a disadvantage: its vocabulary is less transparent, it is more denaturalized, it requires much prior background knowledge (not always available). Conversely, the emotional component is more transparent, it is closer to the global natural roots of human language, it requires little prior background knowledge, it is more universal not just in content (sense) but in form (sound), too: cross-linguistically, iconic (i. e., onomatopoeic and sound-symbolic) words evince great similarity; all this facilitates their acquisition immensely. In grappling with a foreign language, the emotional component is much more the smooth, easy-going natural middleman. In an exchange with the present writer at the Language Origins Society's Meeting in Oranienbaum (July 1993) Professor James Cooke Brown, inventor of Loglan (see his pioneering book: Loglan L., Gainesville, 1966), agreed that the emotional/expressive element of iconic words would not be an unwelcome supplement to his international logical language.

Emotional/sensory memory is, as we know, the most vivid and tenacious type of memory. A vivid picture/image is easily stored, and is retained longest. But so is the *pittoresque* vividness of the Iconic word, whose primary realm is precisely the emotional and the sensory (cf. i. a., *anger, boast, sob, booby, clash, glitter, grumble, hobble, jerk, jog, rip, shock, stib, snap, sob, totter, whirl* — every one of them a word picture in itself).

Iconic vocabulary is thus a welcome easy-to-remember addition, to the frequently insipid, colourless "rational" portion of the learner's foreign word-stock. An occasion to remember...

And we would do well to remember that Phonosemantics has a direct bearing on Foreign Language Teaching (including ELT) — in such key areas as Vocabulary Building, Acquisition, Diversification and Retention.

APPENDIX

1. Relevant Publications by the Author

Listed below are the most important publications by the author (in Russian) immediately connected with the problems discussed in the book.

1. К обоснованию объективной классификации ономатопов // Материалы научной конференции ленинградских аспирантов-филологов. Л., 1967.

2. Ономатопы-диссонансы // Вопросы структуры английского языка в синхронии и диахронии. Вып. 1. Л., 1967.

3. Некоторые замечания о звуке /r/ в английских ономатопах // Там эже.

4. К обоснованию объективной классификации ономатопов // Доклады республ. конф. по вопросам германской, романской и классической филологии. Вильнюс, 1968.

5. Пограничные явления словообразования и фонетики // Филологические науки. 1968. № 1.

6. Английские ономатопы (Типы и строение): Автореф. канд. дис. / Ленингр. ун-т. Л., 1969.

7. О звукоизображениях кавитации // Вопросы структуры английского языка в синхронии и диахронии. Вып. 2. Л., 1969.

8. Диграф wh- в английских ономатопах // Там же.

9. Словообразование и ономатопея // Исследования по английской филологии. Вып. 4. Л., 1971.

10. Звукоизображения щелкающих и дентальных артикуляций // Там же.

11. Об одном случае звукового символизма // Вопросы структуры английского языка в синхронии и диахронии. Вып. 3. Л., 1973.

12. Протетическое /s-/ в английских ономатопах // Труды Самарканд. ун-та. Вып. 243. Самарканд, 1973.

13. К истории и методологии изучения английской ономатопеи // Романское и германское языкознание. Вып. 4. Минск, 1974.

14. Об особой разновидности акустических ономатопов // Романское и германское языкознание. Вып. 6. Минск, 1976.

15. Инстанты как класс английских акустических ономатопов // Английская филология. Краснодар, 1976.

16. Английские звукоизображения дуновения ртом // Труды Самарканд. ун-та. Вып. 291. 1976.

17. Английская ономатопея: некоторые итоги и перспективы изучения // Проблемы мотивированности языкового знака. Калининград, 1976.

18. Типология континуантов в индонезийском и английском языках. (Соавтор И. Б. Братусь) // Тез. дискуссии "Типология как раздел языкознания" / Ин-т востоковедения АН СССР. М., 1976.

19. Английские тоновые континуанты и некоторые лингвистические универсалии. Деп. ИНИОН АН СССР, № 1200, 22.2.1977.

20. Типология тоновых инстантов-континуантов в английском и башкирском языках. (Соавтор Л. З. Лапкина) Деп. ИНИОН АН СССР, № 1201, 22.2.1977.

21. Дескриптивные праформы в Ностратическом словаре (т. 1) В. М. Иллича-Свитыча // Конф. "Ностратические языки и ностратическое языкознание". Тез. докл. / Ин-т славяноведения и балканистики АН СССР. М., 1977.

22. Английские чисто шумовые континуанты и некоторые лингвистические универсалии // Исследования структуры английского языка. Ижевск, 1978.

23. Синестезия и звукосимволизм // Тез. VI Всесоюзного симпозиума по психолингвистике и теории коммуникации / ИЯ АН СССР. М., 1978.

24. К символизму лабиальных. (Соавтор Е. А. Дубинская) // Функциональные особенности лингвистических единиц. Краснодар, 1979.

25. Структурные особенности одного типа английских звукоизображений (в сопоставлении с башкирскими). (Соавтор Л. З. Лапкина) // Структурно-семантические исследования на материалах западноевропейских языков. Барнаул, 1979.

26. Аномалии аномальной системы // Системное описание лексики германских языков. Вып. 3. Л., 1979.

27. Принцип произвольности языкового знака в свете ленинской теории отражения. 1. Языковой знак как отражательная категория // Вестн. Ленингр. ун-та. 1980. № 8.

28. Основы фоносемантики: Автореф. докт. дис. Л., 1980.

29. К проблеме типологии звукоизобразительных систем (Индонезийские и английские континуанты). (Соавтор И. Б. Братусь) // Вестн. Ленингр. ун-та. 1980. № 20.

30. Германские итеративные RL-форманты и звукосимволизм. (Звукосимволизм в грамматике) // Вопросы структуры английского

языка в синхронии и диахронии. Вып. 4: Взаимодействие языковых структур в системе. Л., 1980.

31. Древнегерманские abstracta: фоносемантический этюд // Системное описание лексики германских языков. Вып. 4. Л., 1981.

32. Символизм английских обозначений понятия округлого. (Соавтор Е. И. Кузнецова) // Там же.

33. Интрасинтагма в звукоизобразительной системе языка // Контекстуальная семантика. Рига, 1982.

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37. К проблеме филогенетической эволюции языкового знака // Деп. ИНИОН АН СССР, № 13715-Д83.

38. Синестезия и звукосимволизм (Гл. 7 в коллективной монографии) // Психолингвистические проблемы семантики / Ред. А. А. Леонтьев, А. М. Шахнарович / ИЯ АН СССР. М.: Наука, 1983.

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2. Relevant Courses (unpublished MSS)

1. Английские ономатопы / English Onomatopes.
2. Основы фоносемантики / Fundamentals of Phonosemantics.
3. Проблемы мотивированности языкового знака / The Linguistic Sign Both Non-Arbitrary and Arbitrary (Proposed New Principle Challenging Saussure's *signe arbitraire*).
4. Фоносемантическая типология / A Course in Phonosemantic Typology.
5. Элементы фоносемантики / Elements of Phonosemantics.
6. Актуальные проблемы современной лингвистики / Principal Problems of Modern Linguistics.
7. Методологические проблемы современной лингвистики / Problems in Philosophy of Modern Linguistics.

Программы трех последних курсов см. в книге "Санкт-Петербургский государственный университет... Кафедра английской филологии: Учебные программы" (СПб., 2000).

3. S. V. Voronin. Postgraduate supervision

Specialities:

10.02.04 — Germanic Languages
10.02.07 — Finno-Ugric Languages
10.02.18 — South-East Asian Languages
10.02.19 — General Linguistics

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24. Бартко Н.В. Английские звукоизобразительные RL-глаголы: Фоносемантический анализ. 10.02.04., СПб, 2002.

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4. On Language Origins Research:
Workshop at XVI International Congress of Linguists

XVIème Congrès International des Linguistes
Paris, France July 20-25, 1997

Language Origins Research: State of the Art as of 1997
Convolute of Abstracts for a Workshop Organized and Chaired
by Gyula Décsy

Time: Tuesday, July **22** 1997, 16:00-18:00 (i. e., 4:00 P.M. to 6:00 P.M.)
Place: Palais des Congrès (for room number see General Program).
[Information by B. Caron as of 24/04/1997]

Contents

CONVOLUTE OF ABSTRACTS

1. Chronological Frame (10 minutes, until 16:05)

Presented as Introduction by Gyula Décsy, Goodbody Hall 141, Indiana University, Bloomington, Indiana 47405, USA.

Universe: 12-15 billion years
Earth: 4 billion years
Life: 2 billion years
Noise production: as old as air and motion (pre-pulmonary noises/sounds)
Mammal pulmonary sounds: 60,000 years; phonemically H/E
Humans: 4 or 5 million years
Bipedality: 3.6 million years; causes sinking of Larynx
Unarticulated single-sound production with targeted call semantics (G. Révész) in imperative mood appears (indicativization of communication): 200,000 years

Soundsequentialization (birth of syllable); *non-timbric* soundsequences/ables). Main speech communicative elements of Neanderthal Instinct-based reasoning: 70,000-80,000 years; time (tense) and modality

Intensive sinking of Larynx: 35,000 years (Cro-Magnon)

Timbric sounds (oldest: u, i, a, j, w + nasal/nasalized velar consonants) 25,000 years.

Chances for real iconicity given from this time on.

Perfection of pharyngovelar closure (anatomically, human [Cro-Magnon] only!): 20,000 years

m, p, and t: (production of labials and stops becomes possible) 15,000 years (see diagram on p. 25 below)

Bifurcation of voiceless media: (p/b, t/d, k/g) 12,000 years

Monosyllabic units (CV) in large number with clear concrete semantics: 11,000 years

Red Marble Block products: (I/you [my/yours], light/dark, here/there, stay/go, good/bad [God/devil]) 10,000 years. Note: concepts now *reasoning-based*; as instinctively subhuman, they may be more ancient

Beginning of abstraction ability on a broad base mainly by introducing the 3rd person: 9,000 years

Multilingualism begins

Unfolding individualized-separate soundsequence production in local isolated clans: 8,500 years

Multisyllabicity (Polysyllabicity). Little professor at the campfire (inventionalism): 8,000 years

Protolanguages (Indo-European, Uralic, Turkic, Mongolic, Semitic, Austro-Tai, etc.) in their final shape: 8,000-7,000 years

Abstract vocabulary: 4,000 -1,500 B.C.

logy: 7,000-6,000 B.C. Syntax and Morphology

Linguistic Sophistication 500 B.C.

2. Phylogenesis of Mankind and Language Origins (20 minutes; until 16:25)

2.1. Biology and Language Origins

Presented by Mai J. Daniel III, Ph.D., Professor of Biology, East Carolina University, Greenville, NC 27834, USA. Adjunct Professor of Anthropology,

Since the 1960s, biological investigations have provided significant information on the evolutionary origins of human linguistic behavior. Studies on comparative vocal tract, auditory/vestibular as well as brain anat-

omy/physiology, have enabled an understanding of how these structures and their functions relate to the phylogeny of speech/language production and perception. In addition, studies on mother-infant interactions, categorical perception and developmental gender differences have added to our corpus of knowledge of the ontogeny of human communication. Finally, studies of animal behavior and signification have provided major pieces to the long-time played puzzle.

Biological contributions to language origins should be briefly summarized at a Workshop on Language Origins Research. As a professor of Biology and Anthropology who has studied and taught the Evolution of Human Communication as well as "Animal Behavior and Communication for over 25 years, I would very much enjoy summarizing biology's contribution to human language origins.

Time needed: 5 minutes or less

2.2. The Hardy/Morgan Aquatic-Ape Theory of Hominid Origins and Evolution of Speech: a Neurolinguistic Evaluation

Presented by Karl C. Diller, Professor of Linguistics, University of New Hampshire, Durham NH 03824, USA (Tel. 603-862-3996; e-mail: karl.diller@punh.edu)

The late Oxford professor of marine biology Sir Alister Hardy first proposed the idea that the human ancestor went through a semi-aquatic phase at the time that it diverged from Chimpanzees — which explains the hairless skin and especially the layer of subcutaneous fat that is typical of marine creatures but not of terrestrial creatures (e. g. whales with their blubber, and fatty ducks vs. lean chickens). In 1929, when Hardy returned from a marine biological excursion to the antarctic, he read a statement in Wood-Jones' *Man's Place among the Mammals* that "The bed of subcutaneous fat adherent to the skin, so conspicuous in Man, is possibly related to his apparent hair reduction; though it is difficult to see why, if no other factor is invoked, there should be such a basal difference between Man and the Chimpanzee." Hardy recognized immediately that these were both aquatic features. The list of features which humans share with aquatic creatures also includes salt tears, elongated posture (leading to bipedalism), face-to-face copulation, and swimming and diving. Elaine Morgan, in her books amplifying Hardy's theory, has added human speech, which is analogous to controlled vocalization by aquatic creatures but is so much in contrast to the chimpanzee's inability to mimic speech sounds. Anthropologists have been more willing to concede an arboreal phase in pre-human evolution on the basis of the structure of the human shoulder, because there is corroborating

fossil evidence. The aquatic theory has no direct fossil evidence to back it up, so it is in a position like that of Saussure's laryngeal theory for proto-Indo-European before Hittite was deciphered and provided documentary evidence of the laryngeals. The aquatic theory is based on a physiological argument that is rather similar to the linguistic methodologies of the comparative method and internal reconstruction.

This paper reviews the current state of the aquatic ape theory in relation to the accumulating *pre-homo sapiens* fossil evidence and work on historical geology and climate that, according to La Lumiere, could have isolated proto-humans on an island corresponding to the present Danakil Alps near the Red Sea, providing the appropriate aquatic environment. The argument presenting speech as an aquatic feature is analyzed in relation to available evidence on the evolution of Broca's area in the human brain.

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2.3. Relevance of Recent very Ancient Fossil Finds for Language Origins Theories

Presented by Professor Dr. Marge E. Landsberg, University of Haifa, 1, Shikmona Street, Bat-Galim, Haifa 35014, Israel.

I would like to discuss the significance of the discoveries of the oldest fossil of human ancestors to be found together with stone implements and animal bones in northern Ethiopia by American, Ethiopian and Israeli scientists (this discovery is believed to be 2–3 million years old, cf. William Kimbel & Erella Hovers & Yost Rak, in the December 1996 issue of the *Journal of Human Evolution*), and Mary Leakey's announcement that their fossil discoveries in Tanzania and Kenya indicated that man's evolution began in East Africa far earlier than had been believed (cf. report on foot-

prints found in volcanic ash that showed early hominids walked upright 3.5 million years ago), for a theory of language origins. Fortuitously, of course, these findings prove my own and P. V. Tobias' theories as having been correct at the time....

[A pre-print version of the article (not to be quoted without author's consent) is available on request.]

2.4. Die Sinne dienten ursprünglich der Orientierung im Raum. Die Echoortung als Basis der Sprache und der Sprachhörfähigkeit

Presented by Hans Fründt, Oberbaselweg 51, D-79576 Weil am Rhein, Germany.

Bevor linguistische Phänomene untersucht werden, ist es bei der Sprachursprungsforschung zunächst erforderlich, herauszufinden, woher die akustischen Anlagen kommen, bzw. welchem Zweck sie im Urzustande des Lebens gedient haben. Die Existenzbegründung muss gegeben sein.

Ich gehe bei meinen Untersuchungen davon aus, dass alle Sinnessysteme im frühen Zustand des Lebens der Orientierung gedient haben können. Von ihren physikalischen Prinzipien her sind sie dazu durchaus in der Lage. Versetzen wir uns zurück in den Urzustand des Lebens, so ist es denkbar, dass für einfache Organismen der Aufstieg zu höheren Lebensformen nur dann gewährleistet ist, wenn sie sich perfekt orientieren können. Die Organismen in ihrem Werdevorgang bewegen, tasten, fühlen, riechen, schmecken, hören und sehen sich in diese Welt hinein, die sich ihnen ja als fremdes oder gar als feindliches Umfeld darstellt. Sie "sinnen" sich in diese Welt hinein. Damit Sinne entstehen und auch funktionieren können, müssen sie ein *neuronales Funktionsmodul* im Gehirn entwickeln. Jeder Sinn hat also ein Gehirnmodul mit Kennern der im jeweiligen physikalischen Prinzip liegenden Signale. Bei den nichtoptischen Sinnessystemen spielt der akustische Sinn für Lautgeben und Hören eine wesentliche Rolle. Auf Grund seiner komplexen Form kann angenommen werden, dass er einen sehr hohen Stellenwert hatte, aus einem Prinzip mit höherem Zweck hervorgegangen ist und der Orientierung gedient hat. In der Natur gibt es keine Signale, Laute oder Töne, die in der Lage waren, zur Bildung eines Gehörsystems zu führen, wie wir es heute bei den finalen und fertigen Formen des Lebens vor uns haben, es sei denn, diese werden von den Lebewesen selbst produziert und verarbeitet, wie das bei der Orientierung mit Schall der Fall ist. Kein tierisches Signalsystem hat eine derartige Systematik und Logik wie wir sie im Prinzip Echoortung finden. Auch gibt es aus der tierischen Natur heraus keine Veranlassung dazu, ein differenziert ansteuerbares System werden zu lassen, das die

Sprache zum Ziel hatte. Also muss es in der Natur des Lebens liegen, dass die früheren Lebewesen dazu veranlasst werden, Signale selbst zu produzieren und als Echo wieder zu empfangen, damit aus einer Dynamik und stetigen Übung heraus akustische Anlagen angelegt und geprägt werden, die in einem späteren Zustand des Lebens zu allen fähig sind. Es resultieren nach meinen Untersuchungen daraus die allgemeine tierische Lautgabe und die Sprachfähigkeit des Menschen. Zu berücksichtigen ist auch, dass die akustischen Anlagen bei den höheren Wirbeltieren, speziell den Säugern, immer vergleichbar sind. Das Aussenden eines Signals ist eine Frage an die Umgebung, das Echo ist immer eine Antwort. Echosignale sind deformiert von angepeilten Objekt und somit Bedeutungsträger, sie haben also für das peilende Tier einen Bedeutungsinhalt. Peilsignale haben diskrete Stukturen und Echosignale stellen das angepeilte Objekt dem peilenden Tier direkt dar. Es besteht ein direkter naturgegebener Zusammenhang zwischen Objekt und Echosignal. Das peilende Tier macht sich durch Signale, die an das Selbst gerichtet sind, das Objekt hörbar — sprich: akustisch "sehbar". Diese Art der Prägung von akustischen Systemen für das Lautgeben und Hören aus Zwang und Notwendigkeit hat biologisch gesehen Bildungscharakter weil sie lebensnotwendig ist. Wo gibt es sonst diese Stetigkeit, Zuverlässigkeit, Präzision und Dynamik?

Genau das aber ist die denkbare natürliche Basis der Sprache. Gesprochene Worte haben für den Hörenden eine Bedeutung. Das Wort hat Bedeutungsinhalt und der Hörende erkennt aus dem akustischen Bedeutungsträger — dem Wort —, was der Sprechende vermitteln will. Bei der Echoortung ist das Echosignal mit dem Objekt direkt vergleichbar, bei der Sprache werden immer Metaobjekte verwendet, aber die neuronale Verarbeitung ist immer die gleiche. Der Mensch denkt bildhaft und in akustischen Begriffen. Entwicklungsgeschichtlich gibt es hiernach, seit der Existenz des Fernsinns Echoortung, eine "natürliche Entwicklung" der Sprachen bei Benennung der Dinge. Sprache, so scheint es, ist erst auf einem sehr hohen akustischen Niveau der Instrumentarien und Integrationszentren möglich. Wenn es einen Urschrei gab, dann bestand er aus Lauten zur Orientierung; das allerdings sind auch Naturlaute. Folgerung: Hiernach kann mit grosser Wahrscheinlichkeit angenommen werden, dass die Vorfahren der Menschen und der höheren Wirbeltiere, sich mit Schall orientieren könnten.

2.5. Recapitulation of the Phylogenesis by Ontogenesis

Ontogenesis has a different developmental rhythm (time spans for language acquisition) than phylogenesis.

Stages of Language Acquisition

Synoptic diagram with statistics based on 4 million years of phylogenetic age of mankind (left column), 35.000 years of language ability of man (also left column), and 70 years average human life-span (right column, ontogenesis).

Improved version after Semiotica 78:3-4 (1990).353. We assume 35.000 years for development of the human language ability (from 35,000 B.C. to 2,000 A.D.) For technical reasons, data somewhat different from the chronological frame on p. 3-4 of this convolute. Ontogenetic data based on Peter A. Reich's book *Language Development*. Englewood, New Jersey: Prentice-Hall 1986, 387 pp., see my review in: *Ural-Altaische Jahrbücher/Ural-Altaic Yearbook* 61(1989).174. Months on the ontogenic side are regarded as 1/12 of year (12 months); year fragments are 0.4= three months, 0.6 half a year, etc., on the ontogenesis side).

	Phylogenesis (4 million years)	%	Ontogenesis (70 years)	%
Subhuman/Prehuman	till 35,000	99.75%	(−0)−0.6(0.2)	0.28%
With language	35.000 years	0.27%	69 years	98.72%
Separate timbric sounds	25,000(10)	28.57%	0.5−0.8(0.4)	0.6%
Soundsequences (timbric)	24,000(2)	2.85%	0.8−1.0(0.4)	0.6%
First 50 words	22,000(2)	2.85%	1.0−1.5(0.2)	0.3%
300 words, phrases, inflection	20,000(2)	2.85%	1.5−2.3(0.8)	0.7%
Creative constructions	10,000(10)	28.57%	2.3−3.0(0.7)	0.7%
Syntax	post-5,000(3.5)	14.28%	3.6−6.0(2.5)	3.8%
Abstract vocabulary	1,500 B.C. (2)	10.00%	6.0−10(4.0)	5.7%
Linguistic sophistication	500 B.C.	7.14%	10−25(15.0)	21.4%

3. Gestural Origins of Language (5 minutes; until 16:30)

3.1. The Wundt-Principle: a Basic Observation (Chair)

Basic observation formulated as early as 1922 by Wilhelm Wundt in his *Völkerpsychologie*: The sound is gesture (Der Laut is ein Gebärde). Details Décsy 1983.102. 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 (Brocka/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.

3.2. The Arthromic Theory

Presented by Robert Lafont, Professor Emeritus of the Université Paul Valéry, 238, Ave. d'Occitanie, 34090 Montpellier, France.

I am the initiator of a theory-praxis called praxematic linguistics, which is fairly well known now in a number of countries and which has led to organized research and publications, among which are *Les Cahiers of Montpellier,* published at the university where I taught.

This linguistic approach is called "anthropological." Relative to this you will find a review of my latest work by the philosopher André Jacob in the journal *L'Homme et la Société.*

In the course of my study I began to examine the systematic connection between gesture and word. Using the two consonants of the Indo-European root, I established a symbolic table of equivalence between the *arthrome* (the unit of gestural meaning) and the phoneme. My intention was to show how gestural arthrology, established by the somatic erection, enters into the organs of phonation. We arrive thus, through the example of a linguistic family taken at its reconstituted archaic level, at the very origins of meaning, and we refute the validity of the reigning dichotomy of motivation and arbitrariness.

I should like to be able to rapidly inform linguists participating in the *Congrès* of this line of research, in the absence of a book on this subject, currently near completion. (Arthrome, cf. Greek *artis, arthmós*).

4. Physei/Theseir Relation between Concept and Sign (15 minutes; 16:45)

4.1. Terms

Ever since Plato, linguists have tried to find an appropriate term to designate the two basic types of relation between concept and sign. We prefer the terms printed in Italics.

physei	*theseir/nomoi*	
true	false (prevaricative)	Plato
wahr	willkürlich	Plato
richtig	(conventional?)	Plato
natürlich	künstlich(e Satzung)	Wundt
Urschopfung	?	Paul
causal	*arbitrary*	Coseriu
motivated	unmotivated	Anttila
concrete	abstract	?
descriptive	(regular?)	Finns
expressive	(objective?)	Psychologists
izobrazitel'nyj	?	Russians
Kausalwort	Arbitrarwort	Décsy
symbolic	(regular?)	/
iconic	*symbolic*	Jakobson, Fónagy
Tonikonism	Tonsymbolik	Peirce
direct	indirect	Décsy (in German)
	?	?

See Décsy 1981.16 (Sprachherkunftsforschung II).

Note

1. Our present-day languages operate on a theseic (non-iconic) basis.
2. The signs of animals are mostly theseic and not iconic (Décsy 1983.61 with references).
3. Anti-iconism is a powerful factor in the operation of human communication. A sign can be iconic at its creation and rise; however, in practical use, it soon becomes a symbol (Décsy 1983.38).

4.2. Basic Views Supporting Theseism

Presented by Chair.

Precondition of physei-type word production is that the people have more than one unit in their phoneme (sound) inventory. As at the beginning epocs of human language (approximately until 25.000) only one and only vowel-consonant ("voosonant") existed, there were no chances for the variation of different sounds within existing sound sequences. A single element cannot be variated. The non-timbric elements (H/E, quantity, stress, pitch, register) offered no possibilities for causal (iconic) connection between concept and sound. Iconic sound sequences describing touch (descriptive words such as *harsh*), taste/odor (chemical sensations, phonem-em), as well as auditive and visual impressions became possible only after

the introduction of fine-modulative timbric sounds such as *i, u, a, m, p*, etc. (post-25,000, see chronological frame above) However, they were subject to quick des-iconization (cf. *crash* in English, *Krieg* 'war' in German, *kap*-words but not the origin of language in its entirety at its very beginning. This is, naturally, valid for the theseism too. Nevertheless, theseism is more universal than physeism. Present-day secret languages (students, sol-diers, prisoners) are all based on theseism (Bausani's observation). *Physei/thesei* is thus not a problem of Language Origins, it is a problem of word's iconism" ("tone-iconism", earlier called sound symbolism) is unable to produce universally valid rules for word creations with causal character. A counter-point can be found to almost every sound-iconic rule, e. g., if we state that *i* means small: then in *big* it has the opposite meaning (see, how-ever, *buick* < *bugga*). If we suppose that *a* means 'large', how to explain *a* in *small?* Examples can be multiplied *ad infinitum*.

4.3. In Defence of the Pan-Physeistic Theory of Language Origins

Presented by Stanislav V. Voronin, St. Petersburg University

Theseistic (conventionalistic, arbitrariness-oriented) theories either side-step the pivotal issue of language origins proper (discussing mainly the conditions of language origins) or skip it, landing one step on and passing on to the discussion of language evolution and not language origins. Arbi-trarianism never actually tackles the problem: it evades the issue, not per-poses the capacity in primitive man for fairly developed abstract thinking: this, as we know, is at variance with the findings of modern science.

Physeistic (iconic, natural, non-arbitrary) theory, erstwhile discredited, is now rallying — resuscitated by the manifold nature and the sheer mass of crucial new evidence pointing to iconic origins. Among the mass of fresh evidence is the cerebral asymmetry: right hemisphere is more archaic in origin and is responsible for iconic production. The evidence achieves a critical mass that brings forth a persuasive cumulative argument for glotto-genetic iconicity.

Long overdue now, a "Paris Reassertion" (vs. the Paris Prohibition) is possible on a new state-of-the-art interdisciplinary foundation substan-tiating the Iconic Theory of Language Origin (cf. Voronin 1982).

4.4. Evolution of Language: elf-Referentiality in Modern Application

Presented by John Haiman, Linguistics Program, Macalester College, 1600 Grand Avenue, St. Paul, Minnesota 55105, USA

Language becomes self-referential, finally reaching the point where "il n'y a pas de hors texte". While we cannot observe this tendency at the ori-gin of natural languages, we can document its "final" stages in grammati-calization (cf. recent studies by Fonagy, Traugott), and we can see it played out in full in the evolution of recent institutions which are parasitic on language, such as belletristic literature (cf. Bloom, Eco and others on "anxiety of influ-ence" and self-consciousness in quotation), and, most strikingly, in modern advertising. Broadly speaking, earlier American advertising (up to, say, 1945) was about the "product" advertised, later advertising (whether pro-moting an image of the product, or being a parody of or a reaction to other advertising) is increasingly about the claims and the style of advertising it-self (this point is almost self-evident to anyone who watches a lot of TV, but is underlined by Mark Crispin Miller, among others). In advertising, at least, it seems clear that this drift to self-reference is a frequency effect: both producers and recipients of a message become aware of the message as an ob-ject in itself as it is frequently repeated.

The role of repetition in the final stages of grammaticalization is a cliché, and has been at least since Meillet's *Origines des formes gram-maticales* of 1912. If the evidence of parasitic institutions like advertising is anything to go by, it may well be that repetition is also responsible for not only the drift to self-reference, but for metalinguistic signs in general.

5. Language and Thought (5 minutes; until 16:55)

5.1. Priority of Thought over Language

We cannot name a concept before we do not have it in our mind. Rousseau's view that thinking is not possible without language is false. Real thinking is possible only if we recluse ourselves from the speech. Hardware exists without software but software is useless without hardware (refer-ence to Flemings statement on ASLIP below).

5.2. Priority of the Physical Word over Thought

Linguistic Behavior is set of physical events, like any other human behavior (George L. Trager in Language 26[1950].157). This was a pow-erfully stressed idea by N. J. Marr in Russia in the 20s in natural applica-tion of the evolution theory (he called the language Uber-

bau/superstructure). Cf. to this the term "surface structure" of the American formalists.

5.3. Priority of Instinct over Thought

Psychic, mystic and instinctive certainly precedes thinking. Thinking and reasoning in an imposing form was established in a relatively late stage of the evolution of mankind (estimated time: 10,000). Instinct-based reasoning-type acts are much older (6–7 decamillennia), probably also subhuman. Thinking and language comes thus from the psychic-instinctive sphere, the importance of which is strongly emphasized in our life by religions.

6. Historiography of Language Origins Research

Basic work is Hewes, Gordon Winant's *Language Origins: A Bibliography*. Second Revised and Enlarged Edition. The Hague —Paris: Mouton 1975, 899 pp. Cf. my review *Ural-Altaische Jahrbücher* 49(1977),155–156.

6.1. Language Origins Research, Paleo-Phonetics, and Bird Language

Presented by Éva Kincses-Kovács, University of Debrecen, Serház u. 6, 4027 Debrecen, Hungary.

6.2. Wolfgang Kempelen's Language Origins Research in the 18th Century

Presented by Dr. Béla Biüky & Dr. Gábor Kiss, A Magyar Tudományos Akadémia Nyelvtudományi Intézete, 1250 Budapest I., Pf. 19, Színház u. 5-9, Hungary.

7. Organized Work (10 minutes; until 17.00)

Modern Language Origins Research (LOR) was initiated by American scholars (mostly linguists) with data-oriented methods in the 1960s and 1970s (G. W. Hewes, R. W. Wescott, W. C. Stokoe, Th. A. Sebeok, Ch. Hockett). The organized work is conducted mainly by three associations. The following four contributions deal with their work, achievements, principles and goals.

7.1. Association for the Study of Language in Prehistory (ASLIP); founded in November 1986 in Boston, Massachusetts, formally chartered in April 1989 in Boston, Massachusetts. Ca. 200 members, almost all professional linguists

Presented by Roger W. Wescott, Vice-President of ASLIP, 16-A Heritage Crest, Southbury, CT 06488-1370, Tel.: 203-264-1716

The Association for the Study of Language in Prehistory (ASLIP) is an international society of scholars interested in linguistic reconstruction at

depths greater than those at which most Indo-Europeanists and Semitists cease probing. Its members, formally known as paleolinguists and informally as "Long Rangers," question the linguistic isolationism that insists on treating Sumerian and Basque as permanent linguistic islands and attributing all correspondences between language families to borrowing or to coincidence.

ASLIP publishes a journal, *Mother Tongue*, as well as a newsletter and invites subscriptions and contributions from linguists, archeologists, anthropologists, biologists, and generalists who believe that a sense of intellectual adventure is not incompatible with scholarly rigor. Annual membership is $25, which entitles each member to our periodical publications and provides voting rights in the Association.

For further information, contact ASLIP's president, John D. Bengtson, 1329 Adams Street N.E., Minneapolis, MN 55413-1439 (612-348-5910, e-mail: john.bengtson@co.hennepin.mn.us), or its Secretary-Treasurer, Harold C. Fleming, 16 Butman Avenue, Gloucester, MA 01930-1006 (508-282-0603).

7.2. A Statement for the Language Origins Society (Amsterdam, The Netherlands). Language Origins Research: From Prohibition to Positive Contribution

Presented by Mr. Bernard H. Bichakjian, President, Language Origins Society, Katholieke Universiteit, Department of French, P.O. Box 9103, 6500 HG Nijmegen, The Netherlands. The Language Origins Society was founded in 1985 in Crackow, Poland. In 1996 (Membership Directory) 210 members from European and overseas countries.

Though dogmatic behavior is by no means a rarity within schools of thought, scientists would readily agree in principle that no anathema should be cast on any type of research leading to a better understanding of observational data. And in the name of such a principle, one is ready to condemn the Société Linguistique de Paris for banning the presentation of papers on language origins. It was an act of censure, something hardly suited for a learned society.

Yet, if the procedure was unquestionably wrong, the underlying concern was not spurious. The fundamental question that the decision makers were asking themselves was whether, on the strength of their expertise and on the basis of the empirical data from known or reconstructed languages, linguists could propose scientifically acceptable hypotheses on the origin of human language. This was a responsible question to ask, and experience had convinced them that the answer should be no. Thence, the ban.

Today, while the ban has long been lifted, the fundamental question is still there. Can linguists contribute to language origins research? The answer is an unequivocal "yes," but we have to be careful not to overreach. Reconstructing protoworld like scholars reconstructed Proto-Indo-European is not one of the options. We can however, in cooperation with population geneticists, draw the ultimate genealogical tree of the world's languages. This is already done with reasonable success. But we could make a far more meaningful contribution by tracing the development of linguistic features and by inferring the principles that have guided the evolution of languages. But that would require the abandoning of a cherished myth, and mainstream linguists are not ready for it.

In the eighteenth and nineteenth centuries, it was fashionable to believe that evolution was a cyclical process. The Scottish geologist James Hutton saw the earth as a perpetual machine which, in the words of his catchy phrase, displayed "no vestige of a beginning, no prospect of an end." The British geologist and naturalist Charles Lyell extended Hutton's view to the history of species, but the theories of Lamarck and Darwin combined with the evidence from molecular biology soon proved that the cyclical account was a complete fallacy. In geology, it was the theory of the Big Bang and Hutton's and Lyell's uniformitarianism is completely rejected, and the time's arrow has replaced the time's wheel.

Mainstream linguists unfortunately have not come so far yet—they passionately cling on to the cyclical idea and reject the evolutionary approach with contempt and visceral aversion. As a vector of literature and philosophy, language has of course an undeniable cultural dimension, but the linguistic implement is also just that, an implement with a biological dimension of its own. It is therefore imperative for linguists to examine the neuromuscular underpinnings and assess the selection pressures that weigh upon them in order to understand the nature and the developmental history of the linguistic features they support. This is the task that awaits today's linguists. If they should accept to carry it out, they will be able to outline the developmental steps of the linguistic implement and uncover the process that has guided its evolution. Such an endeavor will not reveal the features of the ultimate protolanguage, anymore than the phylogenetic survey of primates would yield the blueprint of invertebrates, but it would help us understand the developmental process and guard us against embarrassing assumptions about the ancestral vernacular. That would be the contemporary linguist's contribution to language origins research, and it would not be an insignificant one.

7.3. A Statement for the Association for the Study of Language In Prehistory (ASLIP). Getting back to First Language: Strategy and Resistance

Presented by Harold C. Fleming, Secretary-Treasurer, Association for the Study of Language In Prehistory, 16 Butman Avenue, Gloucester, MA 01930-1006, USA.

Since ASLIP contains scholars with many differing views, the following statement reflects the approach of Fleming which is shared, of course, by many ASLIP colleagues.

There are two primary considerations for producing a viable theory of human language origins. First, comes the crucial distinction between the *hardware* (the brain with the speech apparatus) and the *software* (the thousands of different codes or languages which use that system). Second, releasing or liberating the vast energies of many more historical linguists is required for tracing the evolution of the *software*. Already a considerable number of anatomists, physical anthropologists, theoretical linguists, et alii, are working freely on the *hardware* without the fierce resistance and cloying limitations which the *software* folk are meeting. Beyond explicating these two considerations, ASLIP is primarily concerned with the second. A theoretically possible third consideration is set aside because it depends on the first two, namely, how much effect if any have 100 millennia of evolving languages had on the *hardware* and vice versa. Without question those same millennia have had many effects on the *software*; it is the basic assumption behind the investigation of the evolution from one or a few languages to many thousands.

There is a definite difference between hypotheses which seek explanations of Human Language, as a general characteristic of contemporary humanity and as an emergent attribute of the *Hominidae* during the course of their evolution, and hypotheses that try to establish genetic links among the various languages (5000+) of modern *Homo sapiens sapiens*. The first genus of explanation has been associated primarily with theoretical linguists (e. g., Chomsky, Lenneberg, Lieberman, and de Grolier) and biological anthropologists, paleoanthropologists (e. g., Pilbeam, Livingstone, et alii) and to a lesser extent with psycholinguists and archeologists. The second genus of explanation has been more loosely defined, has suffered from taboos and scorn within the field of linguistics, and has only recently begun to integrate itself. It lies predominantly within the domains of historical and anthropological linguistics and is associated primarily with the work of Trombetti, Pedersen, Swadesh, Illych-Svitch, Dolgopolsky, Dybo, Greenberg and Hodge, many others attracted to the topic (e. g., Blazek, Shevoroshkin, Hodge,

Bengtson, Ruhlen, Nikolaev, Starostin, Bomhard, Fleming, etc.) Two prominent scientists — archeologist Renfrew and biogeneticist Cavalli-Sforza — have associated themselves with this effort.

Another view from the philosophy of science would be that the *hard-ware* might be called "the narrative". Such reflects the thoughts of the philosopher of science, Carl Hempel, during a rare philosophical excursion into historical theory by the Vienna Circle which normally favored a "physics origin of human language, then one option would be to choose a *poly genesis* model". Since it is not clear that general laws exist for *unique events* like the for its lack of support among linguists.

The crux of the historical effort is to test the notion that all known human spoken languages are descended from the same source—a common ancestor. Most linguists seem to assume *tacitly* that this is true, even those who bitterly oppose long range hypotheses. Yet most deny that remote relationships can ever be recovered! And thus they hinder the testing of the basic hypothesis.

The obstruction seems overwhelmingly *ideological*, inappropriately focused on "rigor". As a product of textbook writers, rather than empirical study of the problem, the dogma has four main facets which base themselves on empirically evident falsehoods about time, "proof" similarity, and probability. Once liberated from dogma, historical linguists will recover vast amounts of human prehistory. Already the very small group of pioneer scholars has generated much deeper insights into the past than humanity has known before.

The four falsehoods, nowadays portrayed as the historical truths of comparative linguistics, can be summed up in very brief terms as:

Time. Adhering primarily to hypotheses about the age and homeland of Proto-Indo-European (PIE), they say that genetic relationships older than PIE cannot be determined or that only a few millennia older than PIE can be determined. The ultimate date of an ascertainable genetic relationship cannot be older than 5,000 years or a bit more to around 10,000 years. Without going into any detail, one can say that the presence of genetic classes older than 5,000-10,000 years is already known in at least two cases — Afroasiatic and Australian — and is highly likely in three more cases — Niger-Congo, Nilo-Saharan and Khoisan.

"*Proof.*" Believing that the proof of an hypothesis must be absolute and precision and full confirmation of hypotheses *before* they can be entertained. similar to mathematical proofs, the ideologues insist on rigor, exactitude,

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Such a stance, while beloved of many linguists, is a false interpretation of the scientific demand of *testing* of hypotheses. Testing is an empirical matter, a continuing process of confirmation or falsification, in which mathematical type proofs are exceedingly rare and virtually matters only of definition. Just as mathematics itself is a non-empirical endeavor, and hence not a science itself, so the demands for "proof" in historical linguistics are also non-empirical endeavors.

Similarity. Convinced that similarities in lexical or grammatical morphemes are misleading because they may be due to borrowing or chance or some other factors, the ideology of obstruction insists that "merely" finding similarities shows nothing, proves nothing. Again the falsehood here is empirical because this argument would in effect deny validity to all of the established linguistic families of the world because they were initially drawn up along lines of similarities.

Probability. Serious efforts have been made to prove that chance may account for many groups of similarities between languages, thus rendering genetic relationships invalid. Again it is not accidental that Indo-European languages set the standard for these probability statements. This falsehood relates closely to the first — i. e. time—and tends strongly to confine itself to binarisms (two language contrasts) and ignores the cases of widespread similarities among large numbers of languages, e. g., Niger-Congo, Indo-Pacific, Amerind, etc.

A more hopeful view may be taken of the obstructions if one considers recent events in New World archeology. After at least a decade of absolute resistance, stubborn resistance, to any dates for human beings in North or South America before 11,200 BP, the Maginot Line of the Americanists (Anglophone) suddenly collapsed this year. Empirical evidence against it had become overwhelming, could not be denied any longer (by very high standards), and finally was accepted. It is now widely predicted that a wave of new research on the Americas before 12,000 BP will be unleashed, especially among junior archeologists who were held back by the disapproval of their elders!

7.4. Mother Tongue: The Journal [of ASLIP]. Issue I, 1995

The general problem is easy enough to state. We reckon that human language is closely related to the advent of more complex cultures and to

anatomically modern *Homo sapiens*. Currently, the leading hypotheses with these assumptions as background propose that *Homo sapiens sapiens* and/or immediate predecessors "invented" human spoken language, intensified human social capacity, expanded human knowledge immeasurably, and (as a most impressive competitor for resources) spread around the Old World, eliminating or absorbing pre-modern humans in the process. One corollary of this is that all known human spoken languages are genetically related to each other as descendants of that first invention — Ur-Human or Proto-Language. One test of that is to show a taxonomy of human languages — which makes possible a universal family tree and ultimately the reconstruction of major cultural events associated with the evolution of modern people. Another corollary is that the complex evolution of physical humans — population movements and shared mutations — can be figured out and related to a universal family tree which can be dated and located to its roots. Finally, the tests of these theories can be made through archeological discoveries — eventually.

An African homeland, most likely in eastern Africa, is favored for the roots of both trees. Even the probable dates of emergent language, culture, and physique — circa 100,000 years ago — are mentioned frequently. By a growing consensus Southeast Asia is favored as 2nd or 3rd archaic locale, a staging area in the great diaspora before the almost equally old settlement of East Africa, the Levant, and Australia, but rather later in Europe.

Very strong opposition to this emerging synthesis comes from paleoanthropology and a minority of biogeneticists. Oddly enough, linguists are generally favorable to much of this synthesis, yet remain fervently opposed — supposedly in principle — to any demonstration of a universal family tree of languages. We can call this the linguist's *Split Brain Syndrome*; the left hand states that all human languages are probably related, as the right hand flatly rejects this.

The goal of our enterprise is to seek the truth as it pertains to the emerging synthesis about modern human origins. *Mother Tongue* is not committed to any single proposition, while we obviously view the whole scenario quite favorably. We do not know how far along we will get towards the acceptance, falsification or modification of general theory pictured above. There will no doubt be surprises. New excavations always have the power to falsify the most appealing hypotheses. Someone may break through one of the Maginot Lines. Linguists may integrate their brains, softening their rigor and moving towards their left hands. Who knows? Maybe cows will eat meat and cats learn to fly.

7.5. Information on the International Paleolinguistic Society

It is a division of the Transworld Linguistics Association with center in Bloomington, Indiana. Founded in 1971 in Hamburg, Germany, relocated to Bloomington Indiana in 1977. It is a non-profit organization which supports the following scholarly publications: *Bibliotheca Nostratica* 1998–1997, *Occasional Papers*, LOR-contributions in the *Eurasian Studies Yearbook*. Invited members only. No membership fees. Members receive publications supported by the International Paleolinguistic Society at the 50% discount on a prepaid basis.

8. Draft for a Resolution (5 minutes; until 17:05)

[o] Members of the Panel "Language Origins Research: the State of the Art" organized in the frame of the *XVIème Congrès International des Linguistes Paris, France, July 20–25, 1997* [unanimously?] accepted the following resolution in their session on July 22, 1997 in the Palais des Congrès de Paris, France.

We request the members of the *Société Linguistique de Paris* to submit the following motion to the Board of Directors of this association:

We petition the *Société Linguistique de Paris* to withdraw its decision known internationally as *The Paris Prohibition of 1867*. We express our hope that this international society with extraordinary global reputation includes the study of Language Origins (LOR) in its program and in the future considers to invite researchers of this field as speakers to its scholarly meetings.

This resolution has been supported/approved by the Board of Directors of the following organizations:

Language Origins Society, Amsterdam, The Netherlands, represented by its President, Bernard Bichakjian.

The Association of the Study of Language in Prehistory, Bloomington, Indiana, U.S.A., represented by its Secretary Harold C. Fleming. Board of Directors voted and approved on May 1, 1997.

International Paleolinguistic Society, U.S.A., represented by its President Gyula Décsy. Approved May 10, 1997.

9. Free Discussion: Theses to prove or to refute (45, until 18.00)

There are two theories of LOR: creationist and evolutionarist. Creationism is represented by religious institutions. Modern formalism does not deal with LOR, it is "somehow agnostic". The membership of all LOR-organizations work on the basis of the evolutionary theory.

The problem of the origins of language is not a linguistic one, or one that has, as yet, any realistic chances of being solved linguistically (Landsberg 1994a).

Humans lived less than 1 % (one percent) of their phylogenetic history with language (i. e. 35,000 years out of ca. four to five million years). This suggests that language is a late and probably only temporary means of communication of humans. Philogenetically it is recent and may be soon replaced by more perfect systems. It operates on an extremely complicated encoding/decoding system, which is time-consuming and expensive (Décsy).

The Recapitulation Theory is correct. However, there are "phase differences" between phylogenesis and ontogenesis (see diagram, pp. 9–10 above).

Broca's area and Wernicke's area are placed in the Neopallium / Neocortex. They are the places of the fine-modulative motion of the articulatory organs. Their placement in the Neopallium / Neocortex is a proof for the late phylogenetic origin of speech.

The sound is gesture (after Wundt).

Every sound (even the consonantic glottal stop and the vocalic schwa) display click-like (non-pulmonary) elements during their articulation. In this sense, the Stopa-theory is correct. Each sound is to a certain degree click. Clicks are not ancestors (as Stopa thought) but sisters/siblings of the pulmonary sounds.
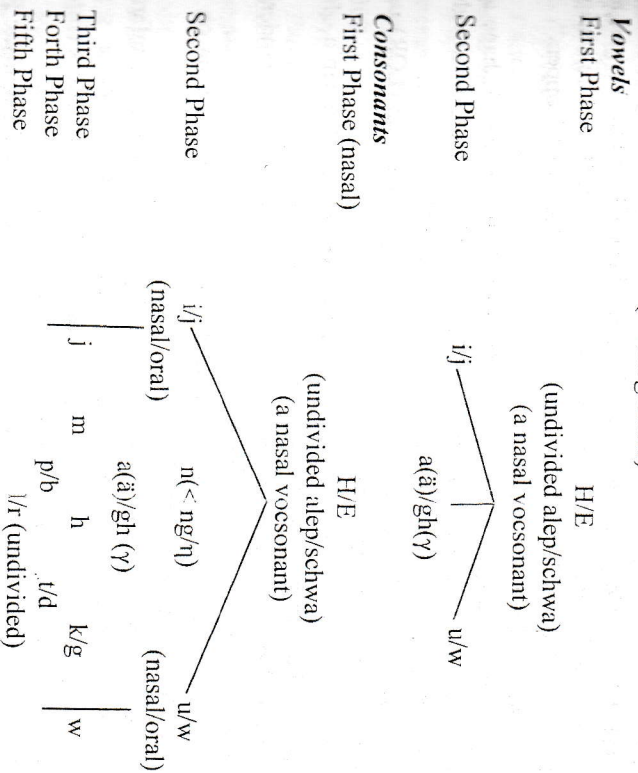
Monogenesis is correct with regard to the *sound production*. All languages of the world produce vowels/consonants in the same way. This is the unrefutable proof of common origin of all languages of the world.

Polygenesis is correct with regard to the *soundsequence (word) production*.

Words in large number were set up late (post-10,000) and independently in the different clans and larger communities on an arbitrary basis; only a small number of soundsequences (words) for very old concepts (preprotosememes) may go back as far as 35,000 (red marble group).

Grammar is a late variation of vocabulary based on frequency relationships. Lexicon precedes grammar. The natural form of plural marking is reduplication (reiteration).

Metaphor is one of the oldest forms of the word production.
Self-referentiality (after Haiman) and feedback support theseism.

Family tree of Pulmonary Sound Production
(Phonogenesis)

Vowels
First Phase

i/j — H/E (undivided alep/schwa) (a nasal vocsonant) — a(ä)/gh(r) — u/w

Second Phase

Consonants
First Phase (nasal)

Second Phase

Third Phase
Forth Phase
Fifth Phase

i/j (nasal/oral) — n(< ng/ŋ) — H/E (undivided alep/schwa) (a nasal vocsonant) — a(ä)/gh (γ) — u/w (nasal/oral)

j — m — h — l/r (undivided) — t/d — k/g — w

p/b

(they are late, even protolinguistically often "exchangeable")

Factors: the consonant h, glottal stop, length, word stress, pitch, register, palatality and pharyngization: they are as elements very old (non-timbric, archaic, subhuman); however, they may have dropped, (re)introduced and (re)dropped as distinctive elements during language development in different areas. They are, in some views, not reconstructable for protolanguages (such as Indo-European, Uralic, Turkic). l/r is late both phylogenetically and ontogenetically: both in Indo-European and in Uralic they display confusing representations (cf. Indo-Iranian vs. the European branches of IE). Consider the existence of the undivided l/r in Chinese (general preference for l) and Japanese (r!) and in the entire South-Asian area! Children learn to pronounce l/r late and hard even in Europe and America.

10. Index

Entries from a *Language Origins Dictionary* presently in preparation.
Encephalization Both gross and selective, (b) the gracilization of the skeleton, (c) the remodeling of the mandibular body, (d) the differential

diminution of erstwhile canine dentition and supporting architecture, and (e) the modification of the upper respiratory tract. (cf. LAITMAN 1985; WIND 1978). This includes a consideration of the implications of bipedal gait and posture, and adaptable hands which could, and did, manufacture various artifacts (Laetolil, Hadar), such as chipped stone flakes and "choppers".

Gestural iconism (after Lafont)

Global Etymologies Common old elements similar in sound shape and meaning in the languages of world preserved in the present-day individual languages (after Bomhard). Technique of the longrangers.

Glossogenesis Another term for Language Origins Research. Language Origins Research (LOR) used mainly in countries with Latin tradition.

Homo anamensis Human in East Africa. Kenya and Tanzania. *Ana-mensis* is the species that gave rise to *afarensis*. (Meave Leakey)

Icons have in linguistic communication four natural forms rendering 1. touch, 2. taste/smell, 3. audio, 4. video.

Language Origins Research Part of *Preprotolinguistics*; research on the earliest times of language development.

Larynx Sinking phylogenetically and ontogenetically (latter in infants). Not necessary precondition for speaking—according to newer views.

Linguistic Proto-Soup H/E varied by tone, pitch, duration, stress (intensity). German: *Sprachliche Ursuppe* used as early in the 1970s.

LOR — Language Origins Research. Earlier, also called Linguistic Pre-history (Swadesh), Glottogony (Hockett), Glossology, Glottogenesis. In German *Sprachherkunftsforschung* (Décsy) and *Sprachursprungsforschung* (von Fründt).

Lucy afarensis We can now confidently say, lived [in the area of Ethiopia] 3.18 million years ago plus or minus 10,000 years (Johanson; quoted after Landsberg).

Mother Tongue Supposed oldest language of mankind with developed vocabulary and grammar reconstructable on the principle of monogenetic origin of words (or, at least, of the archaic parts of vocabulary). It has nothing to do with German *Muttersprache*.

Parasitic Character of the Language This is a radical view which can hardly be accepted by linguists. According to these theses, language is parasitic in the following three specifics: 1. The articulation of speech sounds superseded the original natural function of the organs in question (breath-ing and food take-in). Our articulatory organs were not made for speaking (exaptation). 2. Language became self-referential; it does not serve solely communication (its original intended function) but used for other

purposes (self-referentiality: speaking ends in itself; it is "Selbstzweck") 3. It is a social glue which builds and keeps together large groups (nations, linguistically based huge units) which fight against each other. In this sense, language is inhumane. — These three features are not typical for computer communication.

Pharyngovelar Closure Makes oral-only sound production possible. Human-only. Also called *velaropharyngeal closure*.

Phonogenesis Development of sound production from HE to modern Human. Basically identical in all languages of the world.

Preprotolinguistics Linguistic research of the times before ca. 4,000–5,000. A comprehensive term which includes LOR.

Pre-Timbric Sound Products HE plus length, stress, pitch, register.

Proto-Human Supposed oldest language of mankind with developed vocabulary and grammar (after Fleming). Another term for "Mother Tongue", "World", "Ur-human", etc.

Protolinguitics Reconstruction of protolanguages (protoforms of phyla or single languages) with the method of traditional comparative method.

Red Marble Block Units which display longevity in sounds and meaning (M.R. Key, see Eurasian Studies Yearbook 62(1002), 182. Targeted by research on Global Etymologies/World Etymologies, etc.

Relatability Language features apt to comparison. Not relatable (linguistically "incomparable") are universals (globemes) and exclusive individual features (indemes).

Straightforward Etymologies Words of present-day languages (or their slightly older forms) compared with words similar (in soundshape, meaning and chronological position) of other present-day languages. A favored principle of American new interphyletic comparativism (Nostratics, also of internal reconstructionist and long-rangers) in preprotolinguistic research. Rejected as unreliable by traditional comparativists in Europe by scholars working on protolinguistics.

Subhuman/human Transition Field Time ca. 4–6 million years ago (Übergangsfeld). Zoology of Humans, Anthropology of Animals.

Timbric All vowels and consonants other than HE.

Ur-Human Oldest vocabulary of humans (Fleming).

Vocsonant Undivided vowel and consonant in very early times of language development.

World Supposed oldest language of mankind with developed vocabulary and grammar (after Bomhard).