

Essays in

Contemporary Semiotics

S. G. Proskurin



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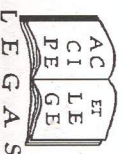
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Essays in Contemporary Semiotics

Sergei G. Proskurin



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To

Yuriy S. Stepanov
Russian Academy of Sciences

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Foreword

The Sieve of Contemporary Semiotics

Marcel Danesi

Various metaphors have been used in the past 50 or so years to describe the nature of contemporary semiotic theory and practice—a *web*, a *lattice*, an *so on*—all of which highlight the interdisciplinary and transdisciplinarity of the field. Let me add one of my own—*sieve*. It is the one that comes to my mind in reading the marvelous essays written by a brilliant young Russian semiotician, Sergei Proskurin.

The most famous sieve of history is the one devised in the 200s BCE by the Greek mathematician Eratosthenes (276?-195? BCE) who invented it for identifying prime numbers—the numbers other than 1 that can be divided evenly by only 1 and themselves. Today, mathematicians use computers to identify prime numbers. But Eratosthenes's technique, though much more rudimentary, works. To find prime numbers with it, the series of whole numbers starting with 2 is written out. Then, every second number after 2 is crossed out, thus eliminating all numbers that can be divided evenly by 2, except for 2 itself. Similarly, every third number after 3 is crossed out, including those numbers that have already been crossed out, thus eliminating all the numbers that can be divided evenly by 3, except for 3 itself. This process is continued *ad infinitum*. Eratosthenes' method is called a "sieve" because the numbers that are not crossed out can be thought of as having passed through a sieve (strainer) that has caught all the rest. Any number that has not been crossed out is prime.

With his ingenious idea, Eratosthenes indirectly provided a practical framework for investigating the nature of numbers in a concrete way, becoming a "thought stimulus" for important subsequent theoretical ideas in mathematics. Semiotics can analogously be thought of as a sieve—i.e. as a method designed to sift out sign-based phenomena from biological, psychological, social, and cultural phenomena in human life. This brilliant book brings together important essays that will, in fact, emphasize the sieve-like nature of semiotics. As such, the essays highlight the fact that semiotics is basically an "applied science," in the Peircean sense that it has practical uses that can be utilized

to discover things about the world. Like mathematics, semiotics builds its theoretical edifice from practical applications, rather than the other way around. The essays in this volume show how semiotics achieves this perfectly. They deal respectively with such sieve-like topics as what signs are psychologically-speaking (essay number 1), how specific types of signs interface with cognition (essay number 2), why signs are basic non-genetic informational structures and how they interrelate with other human processes of information-utilization (essay number 3), the nature and scope of semiotic laws (essay number 4), and the social uses of signs (essay number 5).

There really is no need for me to comment here on each essay. They are self-contained works on various facets of semiotic theory and practice that bring the whole discipline into newer scientific frameworks like cognitive linguistics, cognitive science, evolutionary psychology, biosemiotics, and the philosophy of language. But by way of introduction, let me comment briefly on why I have used the metaphor of the sieve to refer to these essays.

Semiotics is the discipline studying and documenting signs, sign behavior, sign creation, sign uses, and sign functions. It also comes under the rubric of *semiology*, *significs*, and even *structuralist science*, although *semiotics* is the designation adopted by the International Association of Semiotic Studies during its founding meeting in 1969 and, as a consequence, the most commonly used term. One of its modern-day founders, the Swiss philologist Ferdinand de Saussure (1857-1913), defined it as the science concerned with "the role of signs as part of social life" and "the laws governing them." It is from Saussure's writing that the modern-day sciences of semiotics and linguistics trace their origins. Saussure himself interconnected the then fledgling sciences of linguistics and psychology with semiotics (semiology), seeing the three contributing in a complementary fashion to the study of the human mind. He implicitly saw that semiotic method to be like a sieve, a kind of filter for ideas on human representational and knowledge systems, distilling from these systems universal laws and understanding. Several of Proskurin's essays delve into this very aspect of semiotics, thereby establishing the basic laws inherent in semiosis (the innate capacity for sign creation and use so as to record and remember the world).

In order for something to be construed as a sign, it must have *structure*—that is, some recognizable or recurring pattern in its physical form that projects outward (from the pattern) to reality, encapsulating it in a distinctive way. Saussure called this component of semiosis, the *signifier*. The other component—the "outward" concept or referent for which a physical structure stands—he called the *signified*. The connection between the two, once established, is bidirectional or binary—that

is, one entails the other. This model of the sign, incidentally, traces its origin back to the Scholastics in the medieval ages, who also viewed the sign (*signum* in Latin) as an identifiable form composed of two parts—a *signans* ("that which does the signifying") and a *signatum* ("that which is signified"). Although the psychological relation that inheres between signs and the concepts they evoke has come under several terminological rubrics, the term *semiosis* is the preferred one today. The American philosopher Charles Sanders Peirce (1839-1914) called the sign a *representamen*, in order to bring out the fact that a sign is something that "represents" something else in order to suggest it (that is, "re-present" it) in some way. By the way, as is well known, Peirce provided the first exhaustive classification of signs, three of which have seeped into the general lexicon of semiotics and its cognate disciplines—namely, *icons*, *indexes*, and *symbols*. These reflect three general psychological tendencies in human semiosis: resemblance, relation, and convention.

Actually, the first definition and classification of signs goes right back to the ancient Greek physician Hippocrates (c. 460-370 BCE), who maintained that the particular physical form that a physical symptom takes—a *semeion* ("mark")—constitutes a vital clue for finding its biological and etiological source. Shortly thereafter, philosophers started referring to signs as being either *natural* (produced by the body or nature) or *conventional*. Among the first to examine and elaborate this basic typology was St. Augustine (354-430 CE) in his *De Doctrina Christiana*. St. Augustine describes natural signs (*signa naturalia*) as forms lacking intentionality and conventional ones (*signa data*) as forms produced by human intentions. The former include not only symptoms, but also such natural phenomena, plant coloration, animal signals, and the like; the latter include not only words, but also gestures and the various symbols that humans invent to serve their psychological, social, and communicative needs.

Proskurin takes many of the basic notions of semiotics and unites them into a set of laws. In all the essays, we can easily extract (as in a sieve) fundamental principles for understanding how semiosis unfolds in various human signifying phenomena, from language to symbolism.

Semiotics is a fundamental form of inquiry into how humans shape raw sensory information into knowledge-based categories through sign-creation, no matter what particular orientation is taken to the inquiry. Signs are selections from the flow of information intake allowing us to encode what we perceive as meaningful in it and, thus, to utilize it for various intellectual and social purposes. The world of human beings is essentially a *semiosphere*, as the late Estonian semiotician Juri Lotman (1922-1993) called it. Like the biosphere, the semiosphere regulates human behavior and shapes cultural evolution.

But sign systems are never permanent. Unlike most animal signaling systems, they are open to intentionally-designed change. The ability to create new signs is what distinguishes human semiosis from animal signaling. Our musical textual productions, for instance, stimulate us to seek new meanings and new ways of sensing the world, even though they may be completely artificial. These open up the mind and stimulate freedom of thought. As Charles Peirce often wrote, although we are inclined to "think only in signs," we also are creative producers of signs, and these help us reflect upon the world and carry it around literally "in our heads." Proskurin shows why this is so, as he takes us through the sieve of contemporary notions within and without the semiotic domain.

Preface

This book presents itself a series of five essays written for the Program in Semiotics and Communication Theory, which is guided by Prof. M. Danesi at the University of Toronto. The book on current semiotics was conceived as an introduction to the field of today's semiotics. The work consists of five essays covering, first, the past fundamental concepts, and some possible outcomes of the semiotic theories for the modern studies. Clifton Bancroft revised the English text. The plan of the narrative was elaborated with the assistance of Academician of the Russian Academy of Sciences, Professor Yuriy S. Stepanov.

The essays were written at the request of Prof. M. Danesi, who invited me to share my experience in the field of semiotics with students of the University of Toronto, the outstanding circle of Canadian semiotics.

The author is thankful to the above persons and hopes to continue communication with the Canadian readership.

Sergei G. Proskurin

The Basis of Semiotic Knowledge.

The Sign:

Concepts of C. S. Peirce and F. De Saussure

Experience is a web woven out of signs and used to perceive various objects in our surroundings. The American scholar Thomas A. Sebeok invented the metaphor "semiotic web" which he used to describe an observer's experience in space and time. Earlier, the German biologist Jakob von Uexküll suggested the term *Umwelt*, that is, the way the environment is perceived and felt by various biological species. According to him, they live in a world of their own *Umwelten* (including human acculturated ones), which are drastically different from species to species. Uexküll states that the species do not adjust to an environment but cut out a fragment from it which corresponds to their Bauplan (the principle of organization). This is possible because of signs, which arise out of non-existence and allow organisms to make a choice "for the sake of survival and flourishing" (Colapietro 1993: 179).

The word *sign* (Old Greek *σημειον*) was used long before the inception of scientific research of the phenomenon that this word denotes. The earliest written usage of the term dates back to Sextus Empiricus: "A sign is a proposition constituted by a valid and revealing connection to its consequent" (Adv. Math. 7.245). It was also used in the treatise of Porphyrius Tyrius (202-301/304) "About refraining from consumption of living beings" [Porphyrius 1767]: *ὁ ὄντως Φιλόσοφος σημειωτικός* (De Abst. 2.49). This quote may be translated word for word: "the authentic semiotic philosopher", i. e. the observer of the signs. A strong belief forms the basis of the last statement—that the ability to experience the semiotic web in full belongs only to the world's professional observers—philosophers. Referring to a broader context we read: "They speak with certainty that the philosopher is he who above all is a servant of God and refrains from any consumption of living beings and who, face to face with Him, strives to reach God without interference of intermediaries; he is a cautious observer of doomed happenings of Nature (*τὸς τῆς Φύσεως ἀνέγκας*) and is the authentic semiotic philosopher, among many others, who grasps phenomena of Nature, who is reasonable and shy, and reserved and maintaining his health from all the sides..." Yr. S. Stepanov analyses

the quote using the parallel Latin translation of J. Reiskii (1766) where the translation runs: "estque cautus & signa futurorum percipit" (Reiskii 1767: 191) "he is cautious and notices the sign of the future" (quote from Stepanov [Степанов 2004: 39]). The comprehension of something as a sign is directly connected with the unknown which is hidden and yet to be discovered and explored. So the semiotic philosopher is the one who is able to discern features of the future.

The words, which were derivatives of the future meaning "symptoms" or related ideas, i. e. the outer signs of interior process (especially illnesses). Hippocrates, the founder of medical science, viewed the ways in which a disease was reported by patients as the basis upon which to carry out an appropriate diagnosis and upon which to formulate a suitable prognosis. Thus the sign initially was understood as a means to decipher something hidden and unobservable, i. e. the sign was treated as a gate to the unknown. Historically, it is the original meaning of the word.

The Greek philosophers, Stoics, elaborated the doctrine of a sign on the basis of the language meaning. "This doctrine considered the sign (semeion) as an entity constituted by the relation of the signifier (semainon) and the signified (semainomenon). The former was defined as "perceptible" (aistheton) and the latter as "intelligible" (noeton) or, to use a more linguistic designation, "translatable" (Jakobson 1995: 408). In modern times this approach was developed and renewed by F. de Saussure (see below).

Evidence of the medieval definition of the sign is found in the treatise of Saint Augustine, who interpreted it as "something which, in addition to the substance, absorbed by the senses calls to mind of itself some other thing" (quote from (Barthes 1964: 100)). This definition serves the old component of the meaning "sign", that is something hidden, directly unavailable and yet to be explored. Saint Augustine's writings exhibit an adaptation and further development of the Stoic inquiry into the action of signs, "with Latinized terms, in particular *signum* comprising both *signans* and *signatum*" (Jakobson 1995: 408). The medieval statement "Aliquid quid stat pro aliquo"—"something that stands for something (other)" became a common definition of the sign.

Now the complexity of the term "sign" in history of human thought becomes evident. A sign is an entity from which the present or future or past existence of another being is inferred (Eco 1986: 16). The semiotic space brings about the semiotic web that exists independently and is a sort of comprehension. In its turn, comprehension is a prerequisite of interpretation. They both emerged as breakthroughs of consciousness, making the whole universe recognizable and full of semiotic experience. It seems to us reasonable to ascertain that there

exist two stages of semiotic experience: natural and conscious.

The natural stage is characterized by nonverbal communication, which takes place within an organism or between two or more organisms (cells, tissue, cellular organisms). The higher biological species, birds for example, signify by sounds given and received, but more comprehensibly, by so called displays—stereotyped motor patterns involved in communication—which also include visual movements and posturing (Sebeok 2001: 18). At this stage the sign is perceived and interpreted as the sign itself. The conscious stage is different in principle: the sign activity is an independent process, which allows not only processing of information but also research of the phenomenon of a sign and its evaluation.

The term "natural stage" is used to encompass both the biological world we share with all organisms, and the species-specific world of the human imagination—literally the ability to reflect the reality in the mind. The term "conscious stage" presupposes a totally human-made world of symbols, institutions, thought systems, etc., which characterize human cultures and civilizations.

Historically the roots of this dichotomy can be traced to the ideological terrain cultivated by Neoplaton rhetorician and philosopher Giambattista Vico (1668–1744), who was the first to suggest a similar division in his monumental "New Science" (the edition of 1726). New terms and concepts are abundant in Vichian work, which was in its substance an unusual conception of historical semiotics. Its main subject is the origin of things substantial in the culture of peoples. He analyzed their history in two layers: material and mental. Translating this approach into the modern terms of cognitive science M. Danesi synthesizes the following: "The key to any Vichian theory [...] is a separation of human cognition in two levels or layers—a deep and a surface level". According to Danesi's assessment (based on Vico's theory), "the deep form of cognition inheres in our sense impressions and in their organization into [...] categories by the imagination. These categories register our physiological and affective responses to the signals and stimuli present in the environment. Sebeok (1987) characterizes the basic operation of this level of cognition as an "affective modeling of knowledge". "Surface-level" signs generate "highly abstract systems of thought that subsequently guide the mind's efforts to organize the world of reality. These efforts produce our institutions, scientific theories, and ultimately our cultures" (Danesi 1992: 103).

The common feature that unites both stages (in terms of Danesi: factual and artifactual worlds) is modeling. "All organisms communicate by use of models (Umwelts or self worlds, each according to its species—specific sense organs) from the simplest representation of maneuvers of approach and withdrawal to the most sophisticated cos-

mic theories of Newton and Einstein" (Sebeok 2001: 21), and admitted, is an upward movement to consciousness.

Teillard de Chardin claims: "the evolution, as we acknowledged most zealous materialists or at least persistent agnostics do not object to it. It means that the evolution should achieve the climax point ahead, some-where at the higher consciousness (Chardin [Тейяр де Шарден 1987: 204]). Anyway there are strings of commonness that run through the nature of living beings as the patterns are translated in space and in time. Earlier it was understood as the fundamentals of the theory of evolution. In the work *Considerations about Body Organization* (1762) C. Bonnet formulated: "I accepted the evolution as the principle which is consistent with facts and philosophy of common wisdom. I guessed that any organized body precedes fecundation of the embryo which is latter only spurs the development of an organized entity, designed hier in the semen or the egg. I was getting more persuaded that sometime in the future the pre-existence of an embryo in the female as well as that seminal spirit does not generate anything that could be proved" (Bonnet 1762, Preface, VIII). Yu. S. Stepanov in the female as main thesis of Bonnet (Bonnet 1769): "This small organic entity (gene? Yu. S. Stepanov inquires), by means of which the soul is connected with bigger bodies, contains in itself as the smallest entity the elements of future state" (quote from Stepanov [Степанов 2004: 44]). Thus it was the guess of ancient time that modeling is a basic principle of inheritance. Biological patterns are recognizable due to the deciphering of signs.

The process of modeling is the basis of the creation of new writing, including alphabets (see Stepanov, Proskurin [Степанов, Проскурин 1993]). The ancient Indo-European language, Hittite, used the borrowed Sumerian cuneiforms, which were not pronounced and concealed Indo-European words still unknown to us (for instance "woman", "ship", "copper"). The Sumerian cuneiform tablets served as a matrix to develop written utterances in Hittite, hence their appearance could be considered as matrix copying.

The usage of Sumerograms in Hittite reminds us how the synthesis of inherited molecules by the way of matrix copying occurs. The main thesis is such: as a matrix for the gene of a new generation the this type of previous generation is used. There is a certain similarity in Hittite writings we can speak about the source of Sumerograms—the Sumerian tablets that preserved data of the Sumerian language and were used as samples for Hittite codified writings.

A similar matrix copying, mostly in a graphical sense, was used by the Greeks when they borrowed old Phoenician letters which were creatively adjusted to the first alphabet. However, it was not so simple

because the Greeks used a different principle of the ABC built-up, which presupposed separate symbols for vowels and consonants instead of consonant syllabic writing of a Semitic language and its designation peculiarities. Noticing this difference and describing the way Greek adjusted Phoenician letters, John F. Healy wrote: "This can be clearly demonstrated by a comparison of the Phoenician and early Greek letters. Some of the letters—'A' is a good example—even retain an element of the pictograph, in this case the drawing of a bull's head (V) now upside down [...]. The Greek name for this letter is *alpha* (*ἄλφα*), a word, which is meaningless in Greek (apart from referring to this particular letter) but which means "bull" in West Semitic languages (e. g. Ugaritic *'alpu*, Hebrew *'elef*). This is true of almost all the Greek letters" (Healy 1991: 35). The Greeks were the first, however, who, as A. Meillet admitted, noticed sounds as a linear array. The Phoenician alphabet served as a matrix for them and was not what we are used to calling an alphabet, that is, a writing that analyzes each word in its consecutive phonetic elements, consonants and vowels, and allocates a special sign to each of these elements, to the vowels as well to the consonants. Thus the Phoenician matrix was used by the Greeks to install a new type of writing that became a characteristic feature of all Indo-European languages. "We as subjects", J. Kristeva writes, "belonging to a cultural zone in which writing is phonetic and literally reproduces phonetic language, find it is difficult to imagine that a type of language—writing—could have existed and still exists today for many people that functions independently of the spoken chain, a type of language that is consequently not linear (as is emission of voices), but spatial, and so registers a mechanism of differences where each mark's value depends upon its place in the traced whole" (Kristeva 1989: 26).

Summarizing the above, we notice the parallel processes in biological substances and cultural societies and raise the question whether the sign activity is gaining momentum due to the same cause?

The questions of what the sign is and what semiotic studies are, have multiple answers. One of them runs: "something is a sign only because it is interpreted as a sign of something by some interpreter. Semiotics, then, is not concerned with the study of a particular kind of object but with ordinary objects insofar (and only insofar) as they participate in semiosis" (Morris 1938: 20).

The term *semiosis* was originally used by the American scientist Ch. S. Peirce to designate any sign action or sign process in general, or the activity of a sign (Colapietro 1993: 179). Peirce not only coined the term for the sign activity but initiated studies in the field of semiotics creating a unique theory of the sign that remains current today. His theory is one of two approaches to the problem of the sign. The other belongs

to the Swiss linguist F. de Saussure, whose conception was posthumously (after 1911) narrated in the classical linguistic work "The Course in General Linguistics" compiled by Saussure's followers after his death. University.

Both approaches are fundamentals of modern semiotics and their authors are founders of the science of semiotics, even though they treated its subject differently. They differ not only in the approach to the concept of a sign but also in the general term for the science they created. Saussure suggested the term *semiology*, while Peirce stuck to the now widely used term *semiotics*. Two scholars almost simultaneously yet independently of one another fixed the necessity and the large frameworks of this science: Peirce in the United States and Saussure in Europe.

Regardless, historically first in the modern times (the works of Peirce become widely known to the scientific circles in 1930s, after his death) the concept of a sign was brought forth by Ch. S. Peirce, who failed even to find a place at the American universities in his time. R. Jakobson who devoted much of time to study the impact of Peirce's works upon linguistics summarized the scholar's life in science as follows: "Perhaps the most inventive and versatile among American thinkers was Charles Sanders Peirce (1839-1914), so great that no university found a place for him. His first, perspicacious attempt at a classification of signs—"On a New List of Categories"—appeared in the Proceedings of the American Academy of Arts and Sciences in 1867, and forty years later, summing up his "life long study of the nature of signs" the author stated: "I am, as far as I know, a pioneer, or rather a backwoodsman, in the work of clearing and opening up what I call semiotic, that is, the doctrine of the essential nature and fundamental varieties of possible semiosis; and I find the field too vast, the labor too great, for a firstcomer". He keenly realized the inadequacy of general theoretical premises in the research of his contemporaries. The very name for a science of signs goes back to the antique semiotics; Peirce praised and widely utilized the experience of the ancient and medieval logicians, "thinkers of the highest order" while condemning severely the usual "barbarous rage" against "the marvelous acuteness of the Schoolmen." In 1903 he expressed a firm belief that if the early "doctrine of signs" had not been sunk but pursued with zeal and genius, the twentieth century might have opened with such vitality, for instance, linguistics decidedly more advanced condition than there is much promise that they will have reached at the end of 1950" (Jakobson 1995: 409). Peirce, a logician and axiomatist, built the theory of signs in order to establish logic there. He wrote that logic in a general sense is the other name of semiotics: an almost necessary or formal doctrine of

signs, founded on abstract observation.

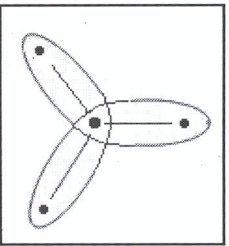
For Peirce, "semiosis is an irreducibly triadic process in which an object generates a sign of itself and, in turn, the sign generates an interpretant of itself. This interpretant in its turn generates a further interpretant, ad infinitum. Thus semiosis is a process in which a potentially endless series of interpretants is generated" (Colapietro 1997: 178). In his work "Logic as semiotic: the theory of the signs" Peirce wrote: "A sign, or representamen, is something which stands to somebody for something in some respect or capacity. It addresses somebody, that is, creates in the mind of that person an equivalent sign, or perhaps a more developed sign. That sign which it creates I call the interpretant of the first sign. The sign stands for something, its object. It stands for that object, not in all respects, but in reference to a sort of idea, which I have sometimes called the ground of representamen" (Peirce 1992: 11-12).

Summarizing the above we conclude that Peirce's concept of the sign is oriented upon a changeable model of communication and observation. The sign is comprehended, experienced and interpreted. The semiosis is constantly renewed and presupposes continuity. The Peircean doctrine is a dynamic model. There is always something first—representamen which stands in such a genuine triadic relation to a second, called its object, as to be capable of determining a third, called its interpretant (Ibid: 12). Nevertheless, reasonable semioticians add to the triad a fourth component—zero. Zero is a cradle of the sign. The Classic triad by Peirce (one, two, three) is preceded by Zero, "that emptiness from whence the sign emerged" (Merrell 2001: 31). Zero is also a premise of "the final interpretant" that in the Peircean theory should be defined in the end of processing as the authentic interpretation where the final opinion is reached.

Discovering continuity of semiosis, Peirce described the constant regeneration of interpretation in general, and interpretants in particular. In accordance with his definition of firstness, Peirce defined the immediate interpretant as a semantic potentiality: "I understand it to be totally unanalyzed effect that the Sign is calculated to produce, or might be expected to produce [...] the effect the sign first produces or may produce upon a mind, without any reflection upon it". It refers to the "peculiar Interpretability" of the sign "before it gets any interpreter. The second category is the dynamical interpretant. It is the direct effect actually produced by a Sign upon an Interpreter of it, [...] that which is experienced in each act of Interpretation and is different in each form that of any other" (Ibid). The third category, the final interpretant, is associated with the third category of habit and law. "It is that which would finally be decided to be the true interpretation if consideration of the matter were carried so far that an ultimate opinion were reached" (8.184) or "the one Interpretative result to which every

Interpreter is destined to come if the sign is sufficiently considered" (quote from (Nöth 1990: 110-111)).

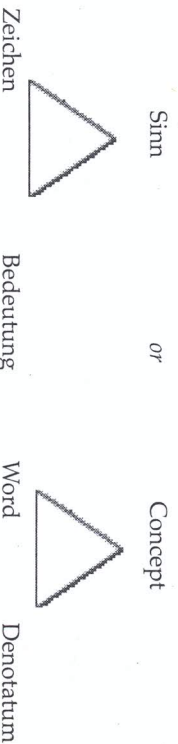
Peirce's semiotic program found its visualization in the modeling of a sign. The recent attempt to reproduce Peirce's theory of firstness, secondness and thirdness in a diagram was made in the research of Floyd Merrell (2001). Peirce's sign is presented in such a way that it is possible to imagine its continuity in space and time as well as rotation of its components.



Drawing 1

Each of the three sign components can become any of the other two components, depending upon circumstances. The rotation shows that anything that interdependently interrelates with the interpretant of the sign in such a manner that it interrelates with its semiotic object in the same way that the semiotic object interdependently interrelates with it, — such correlations serving to engender another sign from the interpretant, and subsequently the process is reiterated (Merrell 2001).

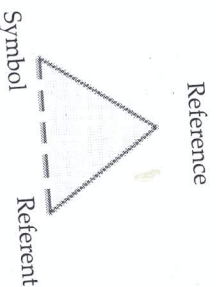
However, Peirce's theory basically follows the classical patterns of predecessors when the static state of semiosis is described (that is, interrelations within the single act of signification instead of the considered above multiple interpretations). Thus Peirce's approach can be illustrated with a classical diagram of general semiotics. The so-called semantic triangle (or semiotic triangle) which was aimed originally at displaying of signification was drawn by the German mathematician Gottlob Frege (1892):



Drawing 2

The discovery of the triadic principle of a sign dates back to medieval times, in particular, works of Joannes Saresberienensis, known also as John of Salisbury, the first ever scholar, who formulated the idea

of a semantic triangle. Being the Catholic bishop in Chartres, France, he brought forward the idea of three constituent stages of the sign activity. The John of Salisbury's conception of the triadic relations of the sign conveyed in his treatise "Metalogicus" was based on the earlier scholars' manuscripts, which contained the subtle thesis of signification: "Nominantur singularia, universalia significantur", i. e. the things, that are singular (denoted), universals are signified", while the concepts that are universal substances can be named, while the concepts that are existence of singular substances are signified. The thesis implicitly refers to the existence of three constituent parts: a word, a concept and a thing (denotatum). According to John of Salisbury, God endows a man with benefit to be an owner of divine and human substances. As a result the man gets a Christian name and realizes the will of God to be somebody, for example, a poet that is to implement the signification, the concept. At the same time God grants the man with something that is to fulfil something in life, for example, to be a carpenter, where the idea of thingness - denotatum is implemented (Stepanov [Степанов 2004: 249]). At any rate, Frege's diagram copies John of Salisbury's idea. Some scholars consider that the semantic triangle is worth renaming after the initials of medieval scholiast. The updated version of the triangle appeared in the 20th century. Ogden and Richards (1923) improved the diagram following John of Salisbury's approach:



Drawing 3

The interrupted line connecting the symbol and the referent indicates that the relationship between them is prescribed by involvement of thinking. Multiplicity of the triangle versions, especially in the terms of names of constituent parts, is staggering. The diversity is able to (only for an object: denotatum, referent, thing etc.) sometimes is able to blur the authentic conceptual interpretation of Peirce, whose triadic theory of a sign can also be illustrated with the same triangle (see the next page).

From the diagram we grasp the gist: we experience the representation that directs our attention to the semiotic object, then we get some sort of meaning, the interpretant as a result of the representation's interrelation with the semiotic object and their own interrelation with

Drawing 4

For example, the relationship between representamen and object is being studied by semantics; formal linear interrelations of signs are being scrutinized in syntactics; and the impact of signs on the addressee is a subject of pragmatics.

In general, the way paved by Peirce has been preserved in modern studies; however in detail his vision of branches remains broader and more significant in outlook than we have reached today.

The second trichotomy, is as Peirce admitted, and we reg-

"the most fundamental division of signs. It was elaborated in relation to object. The three members of this trichotomy are icon (firstness), index (secondness), and symbol (thirdness). Because this division had a significant impact on the development of semiotics, I will specify these subgroups of signs in a separate essay. Now we only provide some quotes from Jakobson's "Quest for the Essence of Language" devoted to the second trichotomy.

- "Signs (or representamina in Peirce's nomenclature) offer three basic varieties of semiosis, three distinct, "representative qualities" This difference enables him to discern three cardinal types of signs;
- (1) the icon acts chiefly by a factual similarity between its signans and signatum [...];
 - (2) the index acts chiefly by a factual, existential contiguity between its signans and signatum, and "psychologically depends upon association by contiguity" [...];
 - (3) the symbol acts chiefly by imputed, learned contiguity between signans and signatum" (Jakobson 1995: 409).

The third trichotomy by Peirce concerns the nature of the interpretant which could be a rheme, a dicent, or an argument and corresponds to the old division of logic: Term, Proposition and Argument modified so as to be applicable to signs generally" (8.337). A Term is "simply a class name or proper name", while a rheme is "any sign that is not true nor false, like almost any single word except 'yes' or 'no'" (8.337). A rheme, according to Old Greek $\rho\eta\mu\alpha$ —"word" is a "simple or substitutive sign" (2.309). It is a Sign of qualitative Possibility [...] representing such and such a kind of possible Object" (2.250). A dicent (or dissign) "is a Sign of actual existence" (2.251). Like a proposition, it is an informational sign" (2.309) but it does not assert (8.337). "The readiest characteristics test showing whether a sign is a Decisign or not is that a Decisign is either true or false, but does not furnish reasons for being so" (2.310). An argument is "a Sign of law" (2.252), namely, the law that the passage from all such premises to such conclusions tends to the truth" (2.263). While a dicent only affirms the existence of an object, the argument proves its truth (quote from (Nith 1990)).

The following table summarizes the types of relations within trichotomies in respect to categories.

Table 1

Trichotomy	I	II	III
Category	Of the representamen	Of relation to object	Of relation to interpretant
Firstness	Qualisign	Icon	Rheme
Secondness	Sinsign	Index	Dicent
Thirdness	Legisign	Symbol	Argument

In total there are theoretically 33=27 possible classes of signs. However some of them are impossible from the semiotic point of view (e.g. a sinsign can not be a symbol, or index cannot be an argument etc.). Such restrictions reduce the classes of signs to ten.

- I 1. (Rhematic Iconic) Qualisign
- II 2. (Rhematic) Iconic Signsign
3. Rhematic Indexical Signsign
4. Dicent (Indexical) Signsign
- III 5. (Rhematic) Iconic Legisign
6. Rhematic Indexical Legisign
7. Dicent Indexical Legisign
8. Rhematic Symbol (Legisign)
9. Dicent Symbol (Legisign)
10. Argument (Symbolic Legisign)

Now we provide an excerpt about ten classes from Peirce's "Logic as Semiotic: the theory of signs".

"The three trichotomies of Signs result together in dividing Signs into TEN CLASSES OF SIGNS, of which numerous subdivisions have to be considered. The ten classes are as follows:

First: A Qualisign [e.g., a feeling of "red"] is any quality in so far as it is a sign. Since a quality is whatever it is positively in itself, a quality call only denote an object by virtue of some common ingredient or similarity; so that a Qualisign is necessarily an Icon. Further, since a quality is a mere logical possibility, it can only be interpreted as a sign of essence, that is, as a Rheme.

Second: An Iconic Sinsign [e.g., an individual diagram] is any object of experience in so far as some quality of it makes it determine the idea of an object. Being an Icon, and thus a sign by likeness purely, of whatever it may be like, it can only be interpreted as a sign of essence, or Rheme. It will embody a Qualisign.

Third: A Rhematic Indexical Sinsign [e.g., a spontaneous cry] is any object of direct experience so far as it directs attention to an Object by which its presence is caused. It necessarily involves an Iconic Sinsign of a peculiar kind, yet is quite different since it brings the attention of the interpreter to the very Object denoted.

Fourth: A Dicent Sinsign [e.g., a weathercock] is any object of direct experience, in so far as it is a sign, and, as such, affords information concerning its Object. This it can only do by being really affected by its Object; so that it is necessarily an Index. The only information it

can afford is of actual fact. Such a Sign must involve an Iconic Sinsign to embody the information and a Rhematic Indexical Sinsign to indicate the Object to which the information refers. But the mode of combination, or Syntax, of these two must also be significant.

Fifth: An Iconic Legisign [e. g., a diagram, apart from its factual indexicality] is any general law or type, in so far as it requires each instance of it to embody a definite quality which renders it fit to call up in the mind the idea of a like object. Being an Icon, it must be a Rheme. Being a Legisign, its mode of being is that of governing single Replicas, each of which will be an Iconic Sinsign of a peculiar kind.

Sixth: A Rhematic Indexical Legisign [e. g., a demonstrative pronoun] is any general type or law, however established, which requires each instance of it to be really affected by its Object in such a manner as merely to draw attention to that Object. Each Replica of it will be a Rhematic Indexical Sinsign of a peculiar kind. The Interpretant of a Rhematic Indexical Legisign represents it as an Iconic Legisign; and so it is, in a measure - but in a very small measure.

Seventh: A Dicent Indexical Legisign [e. g., a street cry] is any general type or law, however established, which requires each instance of it to be really affected by its Object in such a manner as to furnish definite information concerning that Object. It must involve an Iconic Legisign to signify the information and a Rhematic Indexical Legisign to denote the subject of that information. Each Replica of it will be a Dicent Sinsign of a peculiar kind.

Eighth: A Rhematic Symbol or Symbolic Rheme [e. g., a common noun] is a sign connected with its Object by an association of general ideas in such a way that its Replica calls up an image in the mind, which image, owing to certain habits or dispositions of that mind, tend to produce a general concept, and the Replica is interpreted as a Sign of an Object that is an instance of that concept. Thus, the Rhematic Symbol either is, or is very like, what the logicians call a General Term. The Rhematic Symbol, like any Symbol, is necessarily itself of the nature of a general type, and is thus a Legisign. Its Replica, however, is a Rhematic Indexical Sinsign of a peculiar kind, in that the image it suggests to the mind acts upon a Symbol already in that mind to give rise to a General Concept. In this it differs from other Rhematic Indexical Sinsigns, including those which are Replicas of Rhematic Indexical Legisigns. Thus the demonstrative pronoun "that" is a Legisign, being a general type; but it is not a Symbol since

it does not signify a general concept. Its Replica draws attention to a single Object, and is a Rhematic Indexical Sinsign. A Replica of the single Object, and is a Rhematic Indexical Sinsign, being really word "camel" is likewise a Rhematic Indexical Sinsign, common to the speaker affected, through the knowledge of camels, common to the speaker and auditor, by the real camel it denotes, even if this one is not indexically known by the auditor; and it is through such real connection and auditor, by the real camel it denotes, even if this one is not indexically known by the auditor; and it is through such real connection that the word "camel" calls up the idea of camel. The same thing is true of the word "phoenix". For although no phoenix really exist real descriptions of the phoenix are well known to the speaker and his auditor; and thus the word is really affected by the Object denoted. But not only are the Replicas of Rhematic Symbols very different from ordinary Rhematic Indexical Sinsigns, but so likewise are Replicas of Rhematic Indexical Legisigns. For the thing denoted by "that" has not affected the replica of the word in any such direct and simple manner as that in which, for example, the ring of telephone-bell is affected by the person at the other end who wants to make a communication. The Interpretant of the Rhematic Symbol often represents it as a Rhematic Indexical Legisign; at other times as an Iconic Legisign; and it does in a small measure partake of the nature of both.

Ninth: A Dicent Symbol, or ordinary Proposition, is a sign connected with its object by an association of general ideas, and acting like a Rhematic Symbol, except that its intended pretant represents the Dicent Symbol as being, in respect to what it signifies, really affected by its Object, so that the existence or law which it calls to mind must be actually connected with the indicated Object. Thus, the intended Interpretant looks upon the Dicent Symbol as a Dicent Indexical Legisign; and if it be true, it does partake of this nature, although this does not represent its whole nature. Like the Rhematic Symbol, it is necessarily a Legisign. Like the Dicent Sinsign it is composite inas much as it necessarily involves a Rhematic Symbol (and thus is for its interpretant an Iconic Legisign) to express its information and a Rhematic Indexical Legisign to indicate the subject of that information. But its Syntax of these is significant. The Replica of the Dicent Symbol is a Dicent Sinsign of a peculiar kind. This is easily seen to be true when the information the Dicent Symbol conveys is of actual fact. When that information is of a real law, it is not true in the same fullness. For a Dicent Sinsign cannot convey information of law. It is, therefore, true of the Replica of such a Dicent Symbol only in so far as the law has its being in instances.

Tenth: An Argument is a sign whose interpretant represents its object as being an ulterior sign through a law, namely, the law that the truth, sage from all such premises to such conclusions tends to the truth.

Manifestly, then, its object must be general; that is, the Argument must be a Symbol. As a Symbol it must, further, be a Legisign. Its Replica is a Dicient Sinsign.

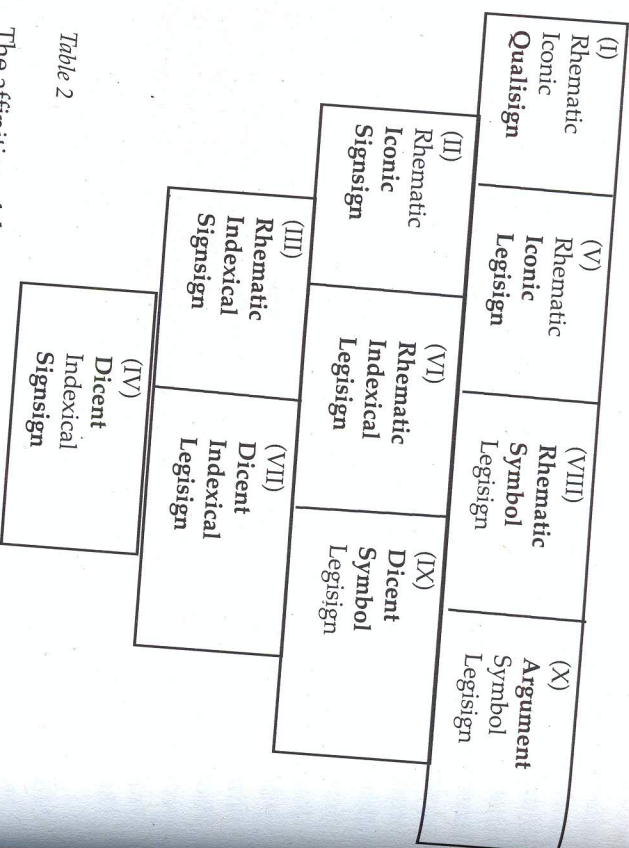


Table 2

The affinities of the ten classes are exhibited by arranging their designations in the triangular table here shown, which has heavy boundaries between adjacent squares that are appropriated to classes alike in only one respect. All other adjacent squares pertain to classes alike in two respects. Squares not adjacent squares pertain to classes one respect only, except that each of three squares of the vertices of the triangle pertains to a class differing in all three respects from the classes to which the squares along the opposite side of the triangle are appropriated. The lightly printed designations are superfluous.

In the course of the above descriptions of the classes, certain subdivisions of some of them have been directly or indirectly referred to. Namely, beside the normal varieties of Sinsigns, Indices and Dicients, there are others which are Replicas of Legisigns, Symbols, and Arguments respectively. Beside the normal varieties of Qualisigns, Icons, and Rhemes, there are two series of others; to wit, those which are directly involved in Sinsigns, Indices, and Dicients respectively, and also those which are indirectly involved in Legisigns, Indices, and Arguments respectively. Thus, the ordinary Dicient Sinsign is exemplified by a weathercock and its veering and by a photograph. The fact that the latter is known to be the effect of the radiations from the object renders it an index and highly informative. A second variety is a

Replica of a Dicient Indexical Legisign. Thus, any given street cry, since its tone and theme identifies the individual, is not a symbol, but an Indexical Legisign; and any individual instance of it is a Replica of it which is a Dicient Sinsign. A third variety is a Replica of a Proposition. A fourth variety is a Replica of an Argument. Beside the normal variety of the Dicient Indexical Legisign of which a street cry is an example, there is a second variety, which is that sort of proposition which has the name of a well-known individual as its predicate; as if one is asked, "Whose statue is this?" the answer may be, "It is Farragut." The meaning of this answer is a Dicient Indexical Legisign. A third variety may be a premise of an argument. A Dicient Symbol or ordinary proposition, insofar as it is a premise of an Argument, takes on a new force, and becomes a second variety of the Dicient Symbol. It would not be worthwhile to go through all the varieties; but it may be well to consider the varieties of one class more. We may take the Rhematic Indexical Legisign. The shout of "Hullo!" is an example of the ordinary variety-meaning, not an individual shout, but this shout "Hullo!" in general—this type of shout. A second variety is a constituent of a Dicient Indexical Legisign; as the word "that" in the reply "that is Farragut". A third variety is a particular application of a Rhematic Symbol, as the exclamation "Hark!" A fourth and fifth variety are in the peculiar force a general word may have in a proposition or argument. It is not impossible that some varieties are here overlooked. It is a nice problem to say to what class a given sign belongs; since all the circumstances of the case have to be considered. But it is seldom requisite to be very accurate; for the one does not locate the sign precisely, one will easily come near enough to its character for any ordinary purpose of logic" (Peirce 1992: 22-26).

Thus the Peircean approach presupposes several layers in the type of a sign involved in semiosis. The sign acquires dimensions with its "depth", "width" and "length" as if it were a spatial phenomenon or a sort of hierarchy. The stretch of a Rhematic Symbol (Legisign), for example, covers a class of common nouns in languages; Dicient Indexical Legisign finds its expression in traffic signs and commands etc. All the signs are described, as if they were self-regulated entities, which could be interpreted through an inner dialogue of the interpreter. Peirce clearly claims that the phenomenon of a semiotic object and its interrelation with the interpreter is crucial for the definition of the type of the sign and there exist fundamental varieties of possible semiosis. However this spatial dimension of a sign is not the only one available. Not less important is a time dimension. In his posthumous works "Existential graphs" (1933) Peirce summarizes the classification of signs, accepting that all the signs exist whether in the past (icon) or the present (index) or future (symbol): "A man makes a new symbol, it

is by thoughts involving concepts. So it is only out of symbols that a new symbol can grow. *Omne symbolum de simbolo*. A symbol, once in being spreads among the peoples. In use and in experience, its meaning grows. Such words as *force*, *law*, *wealth*, *marriage*, bear for us very different meanings from those they bore to our barbarous ancestors. The symbol may, with Emerson's sphinx, say to man, of thine eye I am a eye beam" (Peirce 1992: 25).

If Peirce's theory of a sign gives us a possibility to analyze signs in reiterations in continuous semiosis, F. de Saussure's model of a sign is based on a clearly patterned comprehension. While Peirce's theory is a description of the process, Saussure considers the resultant facet with in his "semiology"—the facet installed by law and by habit. The above is the principal preamble to the Saussurean sign concept.

Following classic treatises, Saussure borrowed the medieval concept of a sign and accommodated it for purely linguistic purposes. However, he considered that it would have an interdisciplinary follow-up for science as a whole because he suggested a new discipline, *semiology*, which was to be devoted to the study of signs.

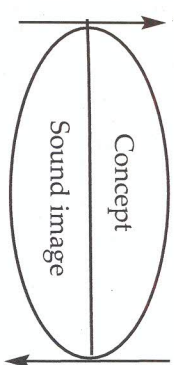
His theory of a sign is based on the conventional relation between symbol and reference. He was of no interest to intermediate stages of semiosis elaborated by Peirce. Semiotic objects are also not considered within Saussure's linguistics. Using Peirce's terms we say that he preferred to be engaged in studying of "final interpretants", i. e. lexical (grammatical) meanings of words within the language system in particular and their interrelations (values) within the language system in general. He studied language and speech as inseparable elements (the language is a sign system within the speech, for the speech, and probably having origin because of the speech).

He wrote: "But what is language [langue]? It is not to be confused with human speech, of which it is only a definite part, though certainly an essential one. It is both a social product of the faculty of speech and a collection of necessary conventions..."

"*La langue* is the social side of language, outside the individual who can create or modify it by himself; it exists only by virtue of a sort of a contract signed by the members of the community." In this way *la langue* is isolated from the heterogeneous whole of language: it retains only "a system of signs in which the only essential thing is the union of meanings and sound images". While *la langue*, so to speak, an anonymous system made up of signs that are combined according to specific laws, and as such can not exist in what is spoken by any subjects, but instead "exists perfectly only within collectivity". Speech [*la parole*] is always individual and the individual is always its master" (Saussure's citations derived from (Kristeva 1989: 9)).

Best of all, the theory of Saussure's sign is applicable to language

and is a sort of final implementation of semiosis when a sign is treated with respect to the other sign as the linear substance. Saussure's sign is a two-sided psychological entity that can be represented by the drawing:



Drawing 5

In scholastic terms Saussure refers us to the relation between two relata: signifier and signified. "I call the combination of a concept and a sound image a sign, but in current usage the term generally designates only a sound image, a word, for example (Lat. *arbor*, etc.). One tends to forget that *arbor* is called a sign only because it carries the concept "tree", with the result that the idea of the sensory part implies the idea of the whole".

Accommodating this thesis, Roland Barthes, French semiotician and Saussure's follower wrote on this point in his "Elements of Semiology": "And indeed the signification (semiosis) does not unite unilateral entities, it does not conjoin two terms, for the very good reason that signifier and signified are both at once term and relation" (Barthes 1988: 48).

Saussure's sign is a mental category that is stored in mind and is a part of some larger system, the language system, which is only stored in mind but has a capacity to be treated as unity beyond the mind (as numbers, for example). That must be admitted on the basis of his approach. It was firstly noted by Barthes who, in disagreement with Saussure's statement about the interdisciplinary character of semiology (semiotics), claimed "linguistics is not a part of the general science of signs, even a privileged part, it is semiology which is a part of linguistics: to be precise, it is that part covering the great signifying unities of discourse" (Ibid: 57).

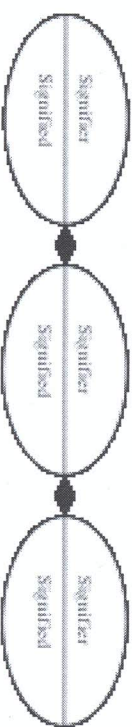
We consider the above statement to be very important for further interpretation of Saussure's sign because it gives the right emphasis upon the sequence of signification in Saussurean approach. Semiosis, according to postsaussurean views of structuralists such as Louis Hjelmslev, is based on mental facets, the origin of which can be neglected though "language, conceived as a sign system and as a stable entity, has expected to provide the key to the system of human thought, to the nature of the human psyche" (Hjelmslev 1961: 4). Nowadays we are able to understand what the sign according to Saussure (or what is prescribed to him in the "Course...") is if we evaluate the following: "Linguistics must attempt to grasp language, not as a conglomerate of

non-linguistic (e. g. physical, physiological, logical, sociological) phenomenon, but as a self-sufficient totality, a structure sui generis." (Ibid: 5-6). Further attempt to exclude signifieds from the language analysis resulted in numerous attempts to substitute the latter by signifiers. As a consequence of the dichotomy *la langue*—*la parole* there was a feeling that there developed the opinion that the signifieds are substances which must be expelled from linguistics and left to psychology. However this trend is in contradiction to what Saussure implied. This is "a paramount proposition, which one must always bear in mind", Barthes argues, "for there is a tendency to interpret a sign as a signifier, whereas this is a two sided Janus entity" (Barthes 1988: 39).

It means that there is such a facet of sign activity which allows perception of any sign as one in totality, as something already available and as a part of something broader. The sign according to Saussure can not exist unless it has rapport. "Everything points to the fact that Saussure, who sought rapport everywhere and asserted that a language is a form, not a substance, recognized the priority of dependencies within language" (Hjelmslev 1961: 23).

In the theory of a meaning Saussure's idea of values is a consequence of his thesis that signs can be stored in mind in forms of sound images and concepts and that the words being signs derive their meanings partly from their opposition to one another and acquire their values. Saussure noted that the sign interpretation is not existent unless it is interdependent. Using Peircean terms and his conception of the final interpretants—we state that lexemes or other language entities or forms (i. e. signs) are a matter of law and habit and produced upon the basis of preliminary semiosis. Thus they are already dependent entities. "The signification partakes of the substance of the content and value, of that of its form (*mutton* and *sheep* are in paradigmatic relation as signifieds and not of course, as signifiers)" (Barthes 1988: 56).

The paradox of Saussure's theory is that the linguistic sign can be comprehended only in its totality, i. e. in opposition to at least another linguistic sign. The result of this statement is a modified model or a diagram of linguistic sign that presupposes linear relations between at least two entities. Only as a result of interdependency is a person is able to differentiate the environment within his language system. The following diagram is an indispensable part of our Umwelt, what the language system is concerned:



Drawing 6

The Sign activity with respect to mentality is a process of multiple unities or connections of several final interpretants which acquire the right for existence only in constellations (phonemic, connotative, syntagmatic, paradigmatic signifieds', paradigmatic signifiers'). It seems that R. Jakobson was precise when he exemplified this in the work "Quest for the essence of language": "In French, *ennemi* ("enemy") as stated by Saussure is not motivated by anything," yet in the expression *ami et ennemi* ("friend and enemy") a Frenchman can hardly overlook the affinity of both juxtaposed rhyme words. *Father, mother, and brother* are indivisible into root and suffix, but the second syllable of these kinship terms is felt as a kind of phonemic allusion to their semantic proximity. There are no synchronic rules which would govern the etymological connection between *ten*, *teen* and *ty*, as well as between *three*, *thirty* and *third* or *two*, *twelve*, *twenty*, *twi* or *twin*, but nevertheless an obvious paradigmatic relationship continue to bind these forms into serried families. However opaque is the vocable *eleven*, a slight connection with the sound shape of *twelve* supported by the immediate neighbourhood of both numerals [...]. Thus Russian attests a gradual attraction within every pair of simple numerals: *sem'* ("seven")—*osenn'* ("eight"), *deviat'* ("nine")—*desiat'* ("ten"). [...] Coinages such as *slimly* from *slimy* and *lithe*, and multiform varieties of blends and portmanteaus, display a mutual adhesion of simple words resulting in their interaction of their signantia and signantia (Jakobson 1995: 416).

In any case dual entities serve as a basis of designation in the theory of information (Shannon) and are similar in all intellectual systems whether human or artificial.

Recent studies of Peircean and Saussurean concepts with respect to literary texts showed some limitations imposed by these concepts on the particular research.

At first the reference of the concepts is a bit different in signification. Some scholars are apt to deny the availability of object in fiction, stressing that the signification should be limited within the framework of the text. They use Saussure's concept as the most appropriate one. Nevertheless we state the common point of overlapping between the considered theories: Peirce's concept of the sign reaching the state when the final interpretant has been produced can be interpreted in terms of two related signifier and signifieds: representamen and interpretant. The object is still existent but becomes a sort of interior conceptual content that accounts for the final interpretant, that is a sort of the sublimated entity (a code referring to itself).

Both theories pretend to have some principles arising from them. One of the postulates of linguistics is that the sign is arbitrary. That is the principle proclaimed by F. de Saussure and reflected in "Course in General Linguistics". That is to say, there is no necessary relation

between the signifier and the signified. That is questionable even within the system suggested by Saussure... Basically, as E. Benveniste noted, it is not the relationship between the signifier {oks} and the signified "ox" that is arbitrary. The link {oks}—"ox" is necessary: the concept and the sound image are inseparable and are in "established symmetry". What is arbitrary is the relation between this sign (signifier / signified: {oks} / "ox") and the reality it names, in other words, the relation between the language symbol in its totality and the real outside it that it symbolizes (after (Kristeva 1989: 16)). The arbitrariness is also under question due to the rapport between final interpreters which is obligatory for the existence of a sign or both signs within the approach of Saussure. It entails the so-called double articulation principle formulated by Martinet. "For among linguistic signs, we must distinguish between the significant units, each of which is endowed with one meaning (the words, or to be exact, the 'monemes') and which form the first articulation, and the distinctive units, which are part of the form but do not have a direct meaning (the sounds, or rather the phonemes) and which constitute the second articulation" (after (Barthes 1988: 39)). This principle is not lacking but has some peculiarities if it is taken into consideration on the basis of the described theories.

Peircean and Saussurean theories have been developing as separate facets of the same phenomenon: basically as different stages of semiosis.

Peircean correlation of the reality and the sign is adjacent to Saussurean arbitrariness of a sign. Peirce's sign theory is based on the direction of semiosis from object to signification while Saussure's signification excludes connection with reality.

Peircean approach is communicative and takes into account the process of sign activity, i. e. semiosis, while Saussure's sign is a static part of a system based on interdependencies. Peirce's sign—a composite multilayer entity having its level of penetration into the reality, Saussure's signs are placed at the same language level of consciousness.

Peirce's theory of a sign depicts the sign as a vehicle of communication and interrelation between the interpreter and environment and interlocutors, while Saussure's sign is a sign existent only between socialized interlocutors.

II

Varieties of Semiosis and Types of Signs (Icons, Indices, Symbols) from Types of Signs to Branches of Semiotics—Types of Signs as Embryos of Complete Semiotic Systems

The perception of a sign by the interpreter presupposes that the latter is able to discern objects, which cause the sensations. As B. Russell argues: "Thus it becomes evident that the real table, if there is one, is not the same as what we immediately experience by sight or touch or hearing. The real table, if there is one, is not immediately known to us at all, but must be inference from what is immediately known" (Russell 1997: 11). So the interpreter is always in search of some correspondence because he is aware of a sort of arrangement in mentality, which results from the interrelation of physical space and private space. Both theories of a sign: Peircean and Saussurean are based on the premise of existence of mental ideas, which depend upon the relation of our sense organs to the physical objects. Though Saussure's approach concludes that they are excessive for the proper interpretation of a sign considering that the "concept" and the "sound image" are enough to expose a sign. What Peirce is concerned about, Merrell points out: "I will allude to Peirce's object as the semiotic object, for it is that to which the sign relates". Further, the scholar asserts that "the semiotic object can never be identical to the "real" object since, according to Peirce, our knowledge is never absolute" (Merrell 2000: 28). Thus the problem, according to the last view, should be settled within the field of comprehension - a sort of Russell's scrutiny "Appearance and reality" in "Problems of Philosophy" (1914).

However, according to the genuine Peirce's approach, the problem of relation between an object and its interpreter can be solved within his second trichotomy, describing signs as a result of various acts of semiosis. Thus, according to our opinion, Merrell dispenses with Peirce's endeavours to acknowledge the reality of an object. Peirce admitted three various recognitions and interpretations of it: an icon, an index, or a symbol. Apparently the same object can be interpreted in

terms of iconicity, i. e. similarity to the object, or as an indexical element, i. e. factual existential contiguity, or as a symbol, i. e. imputed, learned contiguity.

The process of semiosis is regarded by another outstanding semiotician C. Morris as "a five term relation— v, w, x, y, z —in which v sets up in w the disposition to react in a certain kind of way, x , to a certain kind of object y (not then acting as a stimulus) under certain conditions. The v 's, the cases where this relation obtains, are signs, the w 's are interpreters, the x 's are interpretants, the y 's are significations, and z 's are the contexts in which the signs occur".

Various parts of semiosis bring about three major tendencies of a sign. We consider them one by one though admitting at first that there is no pure embodiment of any of them. One of the most important features of Peirce's semiotic classification into icon, index, and symbol is his shrewd recognition that the difference among the three basic classes of signs is merely difference in relative hierarchy. Peirce's claims that "it would be difficult, if not impossible, to instance an absolutely pure index, or to find any sign absolutely devoid of the indexical quality" (see Jakobson 1995: 411).

However, it is possible to discern a prevailing tendency in naming and signification. An icon is considered such a sign that resembles an object: a photograph, a painting, a diagram, a musical note etc. Sometimes it is a sign, "which would possess the character which renders it significant, even though its object had no existence, such as a lead-pencil streak as representing a geometrical line" (Peirce 1992: 15). An index is a sign which would, at once, lose the character which makes it a sign, if its object were removed, but would not lose that character if there were an interpretant for instance, such as "a piece of mould with a bullet hole in it as sign of a shot, for without the shot body would have been no hole; but there is a hole there, whether any-body has the sense to attribute it to a shot or not" (ibid).

A symbol is "a sign which would lose the character which renders it a sign if there were no interpretant. Such is any utterance of speech which signifies what it does only by virtue of its being understood to have that signification" (ibid).

As it has been said real signs are merely complex mixtures of the above tendencies. These complicated overlappings occur any time we perceive the object or utter a phrase. While non-iconic signs, for example, signify conceptual forms, they are themselves conceptual forms, which are in turn signified by iconic signs. As a linguistic form the word stone does not itself have the priorities by which we recognize things to be stones. It is, therefore, a non-iconic sign. Each specific utterance of the word, however, is an iconic sign signifying the linguistic form, which it materializes.

Besides iconicity can be a resultant phenomenon of evaluation of utterances in their totality. It can be any paradigmatic set-up, which is present in a language. According to data of C. J. Bancroft, Canadian architect and teacher of English, which he shared with us after his trip to Papua New Guinea, in Melanesian pidgin (*Tok pisin*) there are three verbal phrases that could be treated together as an iconic message. Thus the Melanesian pidgin "kilem" etymologically descends from the Standard English—"kill him" that means merely "hurt him". The Melanesian pidgin "kilem i dai" means "injure somebody seriously" and "kilem i dai, pinis" means "kill" that is "kill him, [he] dies, finish". Thus, having been taken isolated any of the above utterances can be interpreted as symbolic, however, if they are considered altogether they disclose some sort of iconicity because the meaning of a phrase, its intensity, depends on the length of the utterance. The longer the syntagm is the more serious is the consequence. So the sign constellation presupposes some degree of intensity that takes place in the real denoted happening, that is a clear evidence of iconicity aided by conventional rules of a group structure.

The correspondence in order between a signified and a signifier finds its right place among the fundamental varieties of possible semiosis. Peirce singled out three subclasses of icons: images, diagrams and metaphors.

Those icons which partake of simple qualities are images; those which represent the relations by analogous relations whereas the likeness between signans and signatum exists only with respect to the relations of their parts are diagrams; those which represent the representative character of representamen by representing a parallelism in something else, are metaphors.

Thus, photographs, especially instant photographs, are instructive, because they are "in certain respects exactly like the objects they represent. So they are the images.

A great number of diagrams "resemble their objects not only in looks, it is only in respect to the relations of their parts that their likeness consists" (Peirce 1992: 17). So the diagram of various types of semiosis could be the following brace.

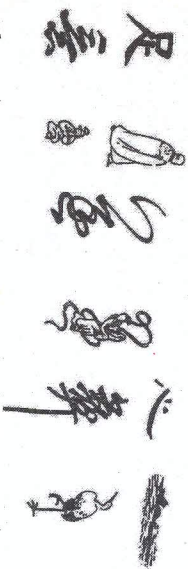


Peirce comments upon the diagram: "This is an icon. But the only respect in which it resembles its object is that the brace shows the classes of icons, indices, and symbols to be related to one another and to the general classes of signs, as they really are (ibid: 17-18). We spotted such

a sort of relations in the group structure of utterances with a different degree of intensity of their meanings.

A Metaphor is a somewhat different case when one surmises that "zebras are likely to be obstinate or otherwise disagreeable animals, because they seem to have a general resemblance to donkeys and donkeys are self-willed" (ibid: 17).

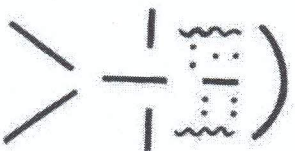
A Language structure is abundant in the iconicity of diagrammatic and metaphorical character. Where images are concerned, there are a lot of examples in human writing. The relation between the object and the graphic element is often considered one of designation in Chinese theories. Thus Confucius felt that the sign for "dog" was a perfect design of the animal. One can see that it is not a question of a realistic resemblance between the ideogram and the object. The sign is a stripped-down figuration that indicates the object it refers to but does not reproduce it.



Drawing 7

These designs, borrowed from the grammarian Chanf Yee, attest to the analogy between Chinese ideograms and figurative representations. From Jacques Gernet, *L'Écriture et la psychologie des peuples* (Centre International de Synthèse, Paris: Armand Colin, 1963).

Imagery designs are typical of Dogon writing, which presents particularities that are interesting in a different way. Dogon writing includes "four stages of which each is successively more complex and more perfect than the one before. The first stage is called "trace" or *bumo* (from *bumo*, "to crawl") and evokes the track left on the ground by the movement of an object. It is a vague design, sometimes of unconnected line segments that nonetheless outline the final form. The second stage is called "mark" or *yala*; it is more detailed than the trace, and sometimes stippled, to remind one, Calame-Griaule writes, that Amma [the creator of speech] first made the "seeds" of things. The third one, the "diagram" or *togu*, is a general representation of the object. And finally there is the completed "design", the *t'oy*.



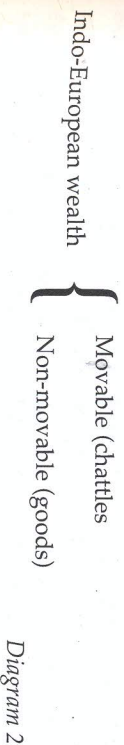
Drawing 8

Example of Dogon writing: naming children (first stage of the design) From G. Calame-Griaule Words and the Dogon World (Philadelphia: Institute for the Study of Human Issues, 1968), p. 225-227.

Diagrammatic design of icons is a widely spread phenomenon of language formulas. Morphology is also rich in examples of such a kind, because it represents some sort of equivalency between the denoted thing and the word (representamen). Thus in various Indo-European languages, the positive, comparative and superlative degrees of adjectives show a gradual increase in the number of phonemes, for example *high, higher, highest, altus - altior - altissimus* [in Latin] (Jakobson 1995: 414). The denoted quality gradually intensifies and increases along with the extension of the word. There are languages where the plural forms are distinguished from the singular by an additional morpheme, whereas there is no language in which the relation would be the reverse and totally devoid of such an extra morpheme (ibid). A numerical increment is not only modelled with the increased length of the form but also tends to echo its meaning. Compare Bushmen lexemes: *tu*—"one man"; *tu-tu*—"a few men"; *tu-tu-tu*—"a crowd" or Russian *chut'-chut'* (which means "a little") or *yele-yele* (with the meaning "hardly").

A formulaic chain of words in Latin *veni, vidi, vici*—*I came, I saw, I conquered*, exemplifies a certain degree of iconicity, because it informs us about the order of Caesar's actions. "First and foremost because the sequence of coordinated preteritis is used to reproduce the succession of reported occurrences. The temporal order of speech events tends to mirror the order of narrated events in time or in rank" (ibid: 412).

Ancient poetic formulas that now are intensively studied by scholars present good examples of preserved iconicity of earlier stages. It happens when only a certain pattern of lexemes is a carrier of a broader meaning. For example, an idea of property and wealth among Indo-Europeans is traced in binominal English phrase: "goods and chattels", that is an icon of wealth. "This formula is a merism, a two part figure which makes reference to the totality of a single higher concept [...]" (Watkins 1995: 10). Goods and chattels, non-movable and movable wealth, together designate all wealth. So there is a diagram of wealth:



"In its present form this formula is nearly a thousand years old in English. Yet its history may be projected even further back, with the aid of comparative method.

We find a semantically identical formula in Homeric Greek nearly two thousand years earlier: the phrase *κεφάλαιά τε πρὸβατόν τε* (Od. 2.75), where Telemachus complains of the suitors devouring his "riches which lie and riches which move" the totality of his wealth"

(Watkins 1995: 10). Lexical renewal of one or more components of a formula does not affect its semantic integrity.

The iconicity of the Indo-European layer was preserved in the Old Germanic alphabet that is a semantically structured cyclical sequence. It begins with the run *Fjehu* "movable riches" and ends with the run *odal* "non-movable property", that is a sample of alphabetic modeling of the world (Stepanov, Proskurin [Степанов, Проскурин 1993]). It entails the possibility of Indo-European origin of Old Germanic writing.

The metaphor is a widely used device in language. Iconicity of metaphors is beyond doubt because they penetrate into the language structure becoming a part of language lexicon. Language metaphors such "as old as the hills" are easily restored to their original meaning and similarity to the initially designated objects is apparently available. Summarizing the above we ascertain iconic signs as vehicles of similarity in semiosis.

The next class of a sign in line is an index, which acts chiefly as a factual contiguity between components of a sign. "Smoke is an index of a fire", Jakobson writes, "and the proverbial knowledge that where there is smoke there is fire permits any interpreter of smoke to infer the existence of fire irrespective of whether the fire was lighted intentionally in order to attract someone's attention. Robinson Crusoe found an index: its signans was a footprint in the sand, and the inferred signatum the presence of some human creature on his island. The acceleration of pulse as a probable symptom of fever is, in Peirce's view, an index, and in such cases his semiotic actually merges with the medical inquiry into the symptoms of diseases labelled semiotics, semiology, or symptomatology" (Jakobson 1995: 403).

Indices are such signs which occur only hic et nunc. It may be pertinent to note that, with respect to their rhythmic movements, the hic et nunc that we humans perceive has a duration of three seconds (Sebeok 2001: 91).

Indices may be differentiated from other signs by their characteristic features: they do not resemble objects; they refer to single entities, they direct attention to their object by compulsion. Sebeok noticed that "this Peircean category, like every other, cannot well understood piecemeal, without taking into account, at much the same time, the veritable cascade of other irreducible triadic relational structures which make up the armature of Peirce's semiotic - indeed, without coming to terms with his philosophy in entirety" (Ibid: 84). For example, illustrating the notion indexicality Peirce tied it to the notions of deductions (2.96):

"An Obsolete Argument, or Deduction, is an arrangement representing facts in the Premiss, such that when we come to represent them in a Diagram we find ourselves compelled to represent the fact stated

in the Conclusion; so that the Conclusion is drawn to recognize that, quite independently of whether it be recognized or not, the facts stated in the premisses are such as could not be if the fact stated in the conclusion were not there; that is to say, the Conclusion is drawn in acknowledgement that the fact in the premisses constitutes an Index of the fact which it is thus compelled to acknowledge".

Peirce differentiated two subclasses of indices: designators and reagents. "No assertion has any meaning unless there is some designation to show whether the universe of reality or what universe of fiction is referred to" (Peirce 1992: 289). Peirce's idea of reagents is that they may be used to ascertain facts.

Deictics of various sorts, including tenses, constitute perhaps the most clear-cut examples of designations. The most vivid examples of indexical usages in languages as designations are lexemes of deixis as right and left. According to our analysis there is no possibility to give a definition of these words except by modeling the meanings they express (Proskurin [Проскурин 1999]). It is because they bear an idea of indexical entity. Such a definition as the Webster Illustrated Contemporary Dictionary provides (Left—"Of designating, for, or on that side of the body which is toward the north when one faces the rising sun") is common. These indexical words can be characterized only by a broad extra linguistic context and the orientation features can define their reference. The similar situation with the definitions is typical of all indexical words. They are hardly to be defined by traditional definitions.

The indexical symbols, and in "particular the personal pronouns, which the Humboldtian tradition conceives of as the most elementary and primitive stratum of language, are on the contrary, a complex category where code and message overlap. Therefore pronouns belong to the late acquisitions in child language and to early losses in aphasia. If we observe that even linguistic scientists had difficulties in defining the general meaning of the term *I* (or *you*), which signifies the same intermittent function of different subjects, it is quite obvious that the child who has learned to identify himself with his proper name will not be easily be accustomed to such alienable terms as the personal pronouns: he may be afraid of speaking of himself in the first person while being called *you* by his interlocutors. Sometimes he attempts to redistribute these appellations. For instance, he tries to monopolize the first person pronoun: "Don't dare call yourself *I*. Only *I* am *I*, and *you* are only *you*". Or he uses indiscriminately either *I* or *you* both for the addressee and the addressee so that this pronoun means any participant of the given dialogue. Or finally *I* is so rigorously substituted by the child for his proper name that he readily names any person of his surroundings but stubbornly refuses to utter his own name: the name has for its lit-

the bearer only a vocative meaning, opposed to the nominative function of *I*" (Jakobson 1995: 389). In their nature indexical signs are shifters, according to Jespersen's term, which have deictic function. Thus the index is a sign that is meaningful by itself irrespective of the substance it indicates. However, an index, as Peirce showed is a sign, which refers to the Object it denotes by virtue of being really affected by that Object (2.248). Thus the shifter is always chosen. The shifter "glides" over the surface of the text creating a unique environment. For example, a class of personal pronouns consists of a few words, which are at the disposal of the speaker: YOU, HE, SHE, IT, THEY, and I. However their usage is universal.

Idea of indexicality in demonstrative pronouns is fraught with a cryptotype sense in modern English. "A Cryptotype is a submerged, subtle, and elusive meaning, corresponding to no actual word, yet shown by linguistic analysis to be functionally important in grammar" (Whorf 1961: 132). In English the phoneme D (the voiced sound of *th*) occurs only in the cryptotype of demonstrative particles (*the, this, there, than*, and probably *they* as standing aside from the speaker). The indexicality prevents the speaker from using this sound in the beginning of nonindexical words. Thus we come across the phenomenon that the vocal sign (phoneme) is a highly specialized gesture in English.

According to Peirce, "a Symbol is a Representamen whose Representative character consists precisely in its being a rule that will determine its interpretant" (Peirce 1992: 21). The described connection does not depend on any similarity or contiguity between the object and representamen. "The knowledge of this conventional rule is obligatory for the interpreter of any given symbol, and solely and simply because of this rule will the sign actually be interpreted" (Jakobson 1995: 409).

All words, sentences, books, and other conventional signs are symbols. The Symbol in its interpretation is potentially directed ahead. The symbol instead of the contiguity of the index presenting the present state and the index originated from the past is directed at the future. Its usage depends on the future. This is the value of a symbol because it serves to make thought and conduct rational and enables us to predict the future.

Finalizing this chapter with Peirce's words we quote his remarkable comparison "The regular progression of one, two, three may be remarked in the three orders of signs: Icon, Index, Symbol. The Icon has no dynamical connection with the object it represents; it simply happens that its qualities resemble those of that object, and excite analogous sensations in the mind for which it is a likeness. But it really stands unconnected with them. The index physically connected with its object; they make an organic pair, but the interpreting mind has nothing to do with this connection, except remarking it, after it is estab-

lished. The symbol is connected with its object by virtue of the idea of the symbol using mind, without which no such connection would exist" [...]. "Symbols grow. They come into being by development out of other signs [...]. We think only in signs [...]" (Peirce 1992: 23).

After inception Semiotics split into different fields. Various semiotic disciplines were conceived and elaborated within its framework. Nature (the world, the universe, the cosmos) discloses itself through sign processes, or senioses. Iconicity, indexical and symbolic interpretations were those embryos of senioses, which brought about a number of semiotic approaches to the world.

Biosemiosis, the sign process found among living beings, was the first branch the scientists followed. This term encompasses biosemiotics with its offspring: *phytosemiotics*, *zoosemiotics*, *anthroposemiotics*. The brilliant neo-Kantian theoretical and experimental biologist Jakob von Uexküll (1864-1944), labouring in Germany in a very different scientific tradition and employing a discrepant but readily reconcilable technical jargon, was laying down the foundations of biosemiotics and setting forth the principles of zoosemiotics and anthroposemiotics at roughly the same time Peirce was working on his theory of general semiotics.

According to Uexküll, reality reveals itself in *Umwelten* or *self worlds*, or those parts of the environment that each organism selects with its species-specific sense organs, each according to biological needs. Everything in this phenomenal world, or *self world*, is labelled with the subject's perceptual cues and effector's cues, which operate via a feedback loop that Uexküll called the *functional cycle*. Interpreting Uexküll, Sebeok wrote: "The observer reconstructs the exterior sign process of the observed from the perceived stream of indices, but never their interior structures, which necessarily remain private. The transmutations of such sign processes into verbal signs are meta-interpretations which constitute objective connecting structures that remain outside the subjective world of the observed living entity; these are 'involved in its sign processes only as an inducing agency for its perceptual sign and as a connecting link to its operational sign'" (Uexküll's quote from (Sebeok 2001: 101)). Thus Umwelt interrelates with a private space where the most important data of physical space are kept. The storage of information emanating from the inanimate environment is a pivotal point of creating Umwelts. At the same time there are live sources of information, which often presuppose communication.

Writing about the negative consequences of Darwinism in biology and philosophy, Uexküll stressed that a line of species was considered only in stages of historical perfecting of a living organism: from a simple one to a complex one. At the same time scientists forget that the

complexity is not equal to the perfection: the best horse does not fulfill functions of a worm. The issue of a degree of perfection of living organisms must be solved, according to Uexküll, by comparing a "structural plan of organism" (*Bauplan*) with its implementation. Further, Darwinism raised a question on the needs of an organism considering that the most perfect organism is that one which best adjusts to its needs. At the same time a criterion of perfection is a human being, whereas the degree of perfection of an animal is considered with respect to man. Uexküll formulated a completely different idea on this point: it is not an organism that satisfies the needs, but the needs arise due to the "structural plan of organism". From unimaginable variety of the world the species cuts and "tailors" a fragment that suits its organization. The connections of the cut fragments of environment account for *Umwelt*, a self world of species. The *Umwelt* of every species is specific and different from the self world of the other species and even from the *Umwelt* of another organism of the same species. The impacts of the outer world on an organism, which have been sorted and coordinated make up an "interior world" of species (*Innenwelt*) (see Stepanov [Степанов 1998: 37]).

The advantage of the use of the concept *Umwelt* is its equality in terms of its usage in respect to cellular forms, plants, animals and human beings. It is interesting how the species picture the world, how they interact with the environment. Since species are able to respond to a small amount of the available general sensor information, they create unique *Umwelts*, subjective spaces, where they specify the most important aspects of the outer world. Thus the concept *Umwelt* is a drastically different notion from the well-known concept environment.

Umwelts are dependent on species and are existent in relation to the organism. Thus all the species live in unique worlds, which are specially suited to their *Bauplan*.

At the same time, the species come across the environment specifying their *Umwelts* at the individual level (Cunningham 1987: 209-211).

At the conscious stage of semiosis the environment and an individual are differentiated with the help of linguistic means specific to humans. As a result a man creates a completely different *Umwelt* with civil structures, religions, schools and professional associations that constitute social and cultural patterns and institutions (Cunningham 1987: 209-211). Thus we can derive a basic principle of biosemiotics from Uexküll's approach: the biosemiotic principle presupposes interrelations of an individual species and the world as a complex connection of *Innenwelt* and *Umwelt*, whereas both structures are subjective instances of organisms and should be differentiated from the environment. Sebeok calls this interrelation after Wheeler's (1988) "a

closed loop of the world viewed as a self-synthesizing system of existence" (Sebeok 2001: 101).

Any species is apt to memorize structures of environment in the specific logic of structures that are physiologically real and possess own reality. In psychology the interrelations of man and environment are considered within the operational theory of intellect. So the question arises whether it is possible to rely on the means of measurement of the outer world in the forms of Gestalts or the human's *Umwelt* is a secondary form composed on the basis of comprehension, intelligence and consciousness.

This question follows the division of semiosis stages into two layers: natural and conscious or factual and artifactual. As we showed in one of our works on semiotics: human cultures are strangely concerned with preservation of earlier experienced *Umwelts*. Cultural societies accumulate information about fragments of environment transferring it in generations. Archeological excavation of one of Altay kurgans (hills) in Mountain area in the present day Russia) shed light upon an ancient burial site with horses bearing artificial masks of deer (Pazyryk kurgan).



Drawing 9

According to one view, the earlier experienced environment, where deer species were available, was preserved in a new program of *Umwelt* where such a species is not a resident. A sort of religious belief was so strong that the burial after migration of ethnos preserved the basic divine animal.

Thus, acculturated *Umwelts* are those, which encompass artificial choices that are drastically different from the simple reaction upon surroundings. Man perceives the world in accumulated patterns of comprehension, which sometime bear traces of previous generations. There is a certain curve of comprehension due to acculturated patterns. However, this is a step beyond the boundaries of biosemiosis which

recognizes only distinctions applying to plants—phytosemiotics, animals—zoosemiotics, and partly humans—anthroposemiotics, that is, the sign process in which human beings participate but which often animals may also use.

Martin Krampen and Uexküll's elder son, Thure, gave a thought to the second Peircean trichotomy as a fundamental terrain of semiosis:

"If one wants to extend this trichotomy to plants on the one hand, versus animals and humans on the other, the absence of function cycle [which, in animals, connects receptor organs via a nervous system to effector organs] would suggest that, in plants, indexicality certainly predominates over iconicity... Indexicality, on the vegetative level, corresponds to the sensing and regulating, in a feedback cycle, of meaningful stimulation directly contiguous to the form of the plant" (Krampen 1988) (quote from (Sebeok 2001: 92)).

As Peirce wrote "even plants make their living... by uttering signs" (3.205).

According to a tree of Porphyrius (see the next page), plants are substances which are live and experiencing. Being a taxonomy of the natural world Porphyrius's tree indicates the increase of the individuality degree of an object due to the increase of rubric number (1.2.1.-2.2.1). Thus, if the space reveals a weak degree of individuality (1 - bodiless structure), then the man heads the hierarchy. Individual properties increase from weakly expressed ones to individuality. Hegel and Goethe shrewdly noticed a weak degree of individual properties among plants, connecting it with a little opposition of one plant to the other plant within the same species, and even a little counter posing of parts of plants within the same body. In fact, if humans are described as individuals in terms of their height, shape of the nose, or eyes, their color, constituent parts of a plant are not opposing within its body and it is always difficult to describe it as an individual substance. We simply experience lack of words.

As Hegel admitted: "A plant as a first existent subject, arising from the availability is only a weak baby life, not reaching discrepancies". Goethe supported the idea "the more perfect the organism is, the less similar its counter parts are" (quotes taken from Stepanov [Степанов 1981]). English language registers an idiom "as like as two peas", that is a clear example of seeds' or plants' descriptions among humans.

As we have referred to above, indexicality prevails in phytosemiosis as well as in bacteria sign activity. It occurs at the single-cell level, as physical or chemical entities, external or internal with respect to the embedding organisms as a reference frame, which they may "point" to, read, or microsemiotically parse—in brief, can issue functional instructions in the manner of an index. "Such an index, which may be as simple as a change in magnitude, a mere shape, a geometric change in surface

area, or some singularity, can be significant to a cell because it evokes memories, that is, exposes previously masked stored information.

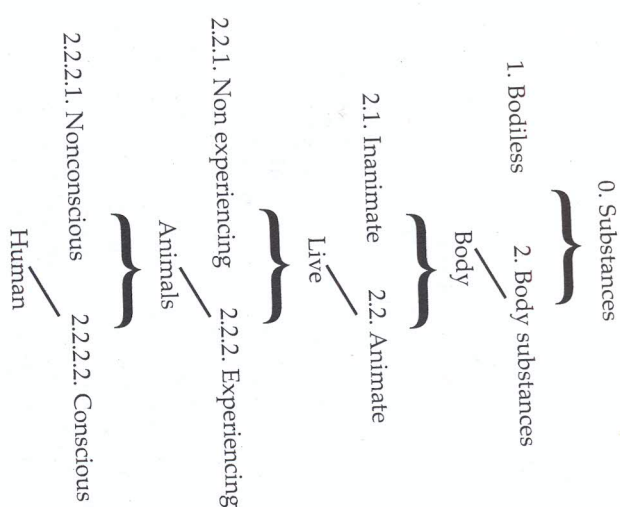


Diagram 3. A tree of Porphyrius from Trier

The following striking example, from the life of the ubiquitous prokaryotic bacterium *E. coli*, was provided by Berg (1976). This single-celled creature has multiple flagellae that it can rotate either clockwise or counter-clockwise. When its flagellae rotate clockwise, they fly apart, causing the organism to tumble. When they rotate counter-clockwise, they are drawn together into a bundle, which acts as a propeller to produce smooth, directed swimming. Roaming about in the gut, the bacterium explores a chemical field for nutrients by alternating - its context serving as operator between tumbling and directed swimming until it finds an optimally appropriate concentration of chemical attractant, such as sugar or an amino acid, for its replication. In doing so, it relies on a memory lasting approximately four seconds, allowing it to compare deictically, over short times and distances, where it was with where it is. On that basis, it decides, with seeming intentionality, whether to tumble, stay in place, or swim and search for another indexical match somewhere else" (Sebeok 2001: 91).

Indexicality in plants sign activities is similar and comparable. It finds its place in the metamorphosis of plants and in species mutations. According to N. I. Vavilov's law of homological rows, having known a

number of forms within one species, we can predict availability of parallel forms of the other species. The closer genetically plants are, the more conspicuous their similarity is.

At the same time, iconicity is not a less important element of the sign activity of plants. The theory of mimicry deals with the phenomenon of adaptation. However mimicry can be considered as a "phenomenon of repeated forms typical of all organic species" (Vavilov Вавилов 1966: 96).

The next branch of semiotics serving higher rank in Porphyrius's tree that is animals is called zoosemiotics. This term was coined by Thomas Sebeok in 1963 and defined then as the "discipline within which the signs of signs intersects with ethology, devoted to the scientific study of signaling behavior in and across animal species" (Sebeok 1992). However the essence of semiotic behavior of species had been a subject of studies and research for a long time before the term was coined (the first text *Misurgia Universalis* by Kircher dates back to 1771). For example, biologists and zoologists collected a lot of material confirming that animals handle a specific code of signaling. The main emphasis in signaling cannot be made only on indexicality or iconicity excluding symbolic behavior.

Karl von Frisch observed the dance of bees in 1923. A nectar gathering bee, once back at its hive, performs before the other bees a dance of two visual movements: horizontal circles and imitations of 8. Between 1948-1950 von Frisch clarified the results of these observations. The dance indicated the distance between the hive and the nectar; the round dance announced a maximum distance of one hundred meters, whereas the axis of the 8 revealed the distance of up to six kilometres as well as the direction with respect to the sun. A number of linguists, primarily E. Benveniste, conclude that bee communication is not a language but a code of signals.

Observing dolphins' communication revealed that they give out vocal signals designed to indicate the location of food, or to connect the members of the group. The signals start at a frequency of seven KHz and are comprised of several pulsations, such as leaps of several hundred Hz, followed by a rapid decrease to below the pre-leap frequency.

Zoosemiotics enables us to discover codes in all living organisms including common areas of the sign activity of animals with human beings. Thomas Sebeok even wrote a piece devoted to zoosemiotic components of human communication, where he continued the trend of differentiating of two levels of human semiotic systems: anthroposemiotic, species specific system of man, and zoosemiotic, those sub-systems of human communication that are found among animals as well.

The research showed that species specificity of humans is a human

language. It contains the embryo of conversing - symbols. Though the ability to symbolize is ascribed to mammals in general and can not be considered as an exclusively human's feature.

Sebeok writes: "Anthroposemiotic systems are always marked, in contradistinction to the zoosemiotic systems that comprehend them. This means that a specific anthroposemiotic sign implies the presence of a certain property X, whereas a genetic zoosemiotic sign implies nothing about the presence of X (it may, but need not to indicate the absence of X). The marked sign is always the negative of the unmarked sign: 'statement of X' vs. 'no statement of X'. And further, 'there is no absolute boundary where zoosemiotics abruptly turns into anthroposemiotics. Least of all is this a correlate of 'the appearance of a new property: the ability to do without objects and interpose a kind of filter between the organism and its environment: the ability to symbolize' (Sebeok 2001: 159). Though some intracorporeal sign processes, notably the phenomenon of inner speech, may be at least partially anthroposemiotic (Ibid).

We finalize our survey of branches of semiotics by stating that three biologically grounded semiotics are not sufficient to expose the peculiarity of the conscious stage of semiosis. This becomes possible only on the basis of specialized semiotic research, whether we conduct it on social, ethnical or other anthropomorphic layers. It may be viewed as a semiotics of some other type: logical, ideological, aesthetic or social.

As Günter Kress summarizes: "Hence the social is in the sign, it is not the question of a correlation between an autonomously existing sign, and external social reality of a context around the sign or around the text as complex sign".

III

Semiotics of Matrices, that Preserve non Genetic Data

The subject of current essay is storage of non genetic data in languages and cultures and data transference from generation to generation. The typology of matrices preserving non genetic data is dependent on fundamental features of a sign, its potential power to fill in the content slot. Hereby we stress qualitative plausibility of the sign, that is its existence as some potentiality (this is the first element of the first trichotomy of Ch. S. Peirce—qualisign).

From the classical standpoint namely the Peircean theory it seems useful to use the relation of representamen to its object. In the context of reality there exist three types of data models: signs-icons, signs-indices and signs-symbols (this is the second trichotomy elaborated by Peirce).

When the sign acquires the ability to function in languages and cultures with its capacity to make a statement (argument) (a part of the third trichotomy in the Peircean approach) its semiotics becomes a cultural heritage or put it another way is culturally embodied. It seems just that the enumerated features of semiosis correspond to analogue matrices, some ethnocultural constituent units, which possess qualities of semiotic prototypes but which are different from the former by their capacity to survive in time.

We use the term matrices for such analogues and consider them as slots to be filled with senses (See Danesi 2007).

Thus a capacity of representamen to present the information about the object, its iconicity, is embedded in imitation matrices, once described by J. Piaget (the treatise "Psychogenesis of knowledge and its epistemological significance"). The imitation matrices encourage us to restore in memory the objects, and this restoration in memory requires formation of specific means that is a semiotic function ("relayed imitation, a symbolic game, an image, which is interiorized imitation, gestures and so on which are added to the sound language") (Piaget [Piake 2001: 104]). The imitation matrices are the senses reversed to the past and history; they possess features, reminding of the object or its availability. They can be nonverbal and verbal that is in the form of the language sign. The structure of such signs pretends to imitate the functions, components or other features of the object. J. Piaget wrote: "I observed how the semiotic function developed in my

children. First of all, I did it with my daughter. I offered her a half-opened box of matches having put inside some thing when she saw it (for example, I put inside a thimble. I stress that the thing that is inside is not edible, later it would be clear why). My daughter tried to open the matchbox to pick up the thing, she turned it in her hands, but she failed to reach the target; at last she stopped to manipulate with the matchbox and was looking at it and started to open and close her mouth. It symbolized what would be done (there was anything edible in the box). One more fact proved such a conclusion. I repeated that experiment four years after and offered a matchbox to my son at the same age. Instead of opening and closing his mouth he cast a look on the half-opened matchbox and on his hand and clinched and relieved his hands. Consequently it was symbolization, only that time it was in hand terms. However it was evident that there was a thought about the target to reach..." (Piaget [Piaže 2001: 146]).

The imitation matrices are responsible through the semiotic function to transfer the cultural data in time, since they are capable to store the structural set up of the object. Thus the linguistic form of richness among Indo-Europeans is reflected in the formula goods and chattels, where it acquires the meaning of the "richness in total" (see the diagram on page 41). The considered formula is a merism, that is a bipartite structure, which denotes richness through its components—non-movable and movable riches. However, this binomial reveals the sense all the wealth in comprehension and translations into the other languages. It is evident, that this formula copies the structures of reality and that its replicas-ideas are embedded into its form.

The imitation matrices are transferred through generations as ritualized gestures, for example making the sign of the cross during the prayer.

Indexical signs which are existent *hic et nunc*, presuppose a particular set up of cultural matrices, which we call referential matrices. The core feature of this matrix is its zoning of the senses with respect to the speaker. This matrix consists of the meaningful cells, which are rigidly embedded in the arrangements of references and could not be altered. Therefore the Indo-European root **sue* "own" is reflected in the denotations of the zone of the third person singular as in Latin *suus*. The Russian cognate *свой* is movable in any zone of the speaker, listener and the distant person which is the first person, the second person and the third person. However, historically the Indo-European languages contained primarily referential lexis which were specialized and ascribed to a particular zone of the reference to the first, the second and the third persons as in Latin, modern Spanish, Serbian and Croatian. The three member referential system was specialized as in Serbian utterance *ево мени, ето теби, ено њему*: "It is for me, this is for you

and that is for him". The modern English has bipartite reference (*this—that*) and its resource is insufficient to show explicitly the tripartite referential zone which was the protolanguage form of the current references. The replicas of the past however can be reinvigorated in common Russian (where tripartite system in the demonstrative pronouns does not exist now) adverbs *здесь—mym—там* which provide the senses of the first, the second and the third person references. When the Russian speaker denotes the zone of himself he refers to it as *здесь* and when the presence of the listener is felt the speaker can refer to the zone as *mym*, and the adverb of the distant area is *там* ("there"). The referential matrix is the basis of the modern syntax which preserves some relics of the past references even in the Standard European languages: *there is, es gibt, il y a*.

The indexicality is a semiotic phenomenon which is revealed through particular carriers of its meaning in some Indo-European languages—demonstratives, adverbs etc. The referential matrices do exist in our consciousness as some schemes of references. It is proved by the cryptotypic phonemes which relate the idea of referential value. A cryptotype is a submerged, subtle and elusive meaning, corresponding to no actual word, yet shown by linguistic analysis to be functionally important in grammar (as defined primarily by B. Whorf) (See: Proskurin 2007). As mentioned earlier in English the phoneme *ɒ* (the voiced sound of *th*) occurs only in the cryptotype of demonstrative particles (*this, that, these, those, thither, than* and probably *thou* and *they* as standing aside of the speaker). The indexicality prevents the speaker from using this sound in the beginning of nonindexical words. Thus we come across the phenomenon that the vocal sign (phoneme) is a highly specialized gesture in English (see p. 53).

The idea of referential matrices which originated from Indo-European demonstrative *t*, is present in Russian indexical words *mom, mam, makou, mym, menepp, mozda* etc... as well as in shifters (pronouns) *мы, меня, себе, мой*, etc.

If one considers analogue Germanic *du, das, der, die, da, dort*, the idea of existent referential matrices becomes evident. Of no doubt there exist the specific cognitive signifier behind that segment of lexicon. It is not only a matter of common Indo-European prototypes *t, te* which is reflected in the modern deictic vocabulary. There exist other cryptic particles to be filled in slots as a referential cryptotype for example in Croatian which is /o/, in Italian which is /qu/ etc. and they are dated back to other demonstratives.

The referential matrices have a specific origin and they are established independently in every particular language. They reveal autopoietic (self built) nature of their history but they are not created at random. The speaker (the agent of the language) is apt to think of ref-

erences as commonalities and unite them in a cryptotype unit. Autopoesis of deixis gives evidence of the process of involvement at the moment the speaker feels at one with the space and time. The matrices emerge in the realm of consciousness as if the bread were baked in the oven. The bread is never done and produced in real sense of the words "do" and "produce". The bread emerges due to the created conditions that exist in the oven (temperature, availability of the constituents of the recipe). As an analogy process in language the current research stipulates the availability of slots to be filled on the basis of the chosen cryptic strategy of deixis. There exists a trend to form up expressions of references through homogeneous particles.

At last symbol signs are traditionally characterized as ones which are referred to the future. According to our hypothesis they establish hierarchical matrices, which are stored in memory for a potential use as a list or enumerations of values. Thus a hierarchical matrix of a word symbol belief can have a variety of arrangements: *belief as trust, conviction and belief as religion, beliefs, cult* etc. Such a hierarchy of values possesses a dominant feature—the matrix dominant, which guides the totality of senses behind the symbol sign.

The hierarchical matrices by themselves reflect the specific semiotic reality, because they accommodate to the definition of a sign which dates back to medieval times "Aliquid quid stat pro aliquo"—something that stands for something.

Indo-European cultures preserve non genetic data in a variety of ways if it is considered from the semiotic standpoint. I stipulate matrices as carriers of all non genetic data as a whole and sign symbols in particular.

The hierarchical matrix of a cultural concept is a formalized (it means that it is not chaotic or arbitrary) sequence, which possesses a cultural value. Matrices reflect various angles of conceptualized data, their total sense and usage. To fill in the matrix of a cultural concept is to bring into the light cultural beliefs and concepts of a people. The collective consciousness chooses those features which it recognizes meaningful to the given concept. A sequence of enumeration of features in a matrix is not arbitrary but precise and hierarchical. A hierarchy is a consequence of availability of the matrix dominant. This principle of organization of a matrix shed light on the principle of existence of cultural concepts as symbol signs. The symbol signs have something which stands behind the symbol—that is a matrix dominant—which is a decisive sense for the sign. It is really so that when we speak that "we believe in God", "we believe somebody" we bring about different matrix dominants. The former has a matrix dominant *religion*, the latter—*trust*.

I specify the components which establish the matrix structure: 1)

word symbol, the form of the concept; 2) clusters—hierarchy of senses; 3) matrix dominant—differentiating feature, which makes the concept specific in its sense; 4) associative features of the concept—the matrix components (restructuring of the associative features brings about creation of new structures—other matrices).

Thus the symbol of the concept *Belief* (as the religious feeling) is

Table 3

Word symbol	Belief
Matrix dominant	'faith'
Associative features	'religion' 'worship' 'cult'

The above matrix reflects only one aspect of the concept *belief*, that is, *belief as a religious feeling*, and one of the senses, or values: *adoration of God*. If the matrix dominant is tenet, it will determine the sense of the concept—*belief as the doctrine or a set of religious dogmata*, i. e. the English were drawn to Christianity with its strong convictions and its hopes for future life as opposed to the fatalistic gloom and hazy uncertainty of earlier tribal beliefs. Then the matrix will have the following built up.

Table 4

Word symbol	Belief
Matrix dominant	'tenet'
Associative features	'religion' 'creed' 'doctrine'

It is significant that the more complicated linguistic and cultural realms of meaning are also organized on the basis of that principle—matrix dominant. For example the formula "Faith, hope, charity" has been present in Indo-European texts since the Indo-European peoples turned to Christianity. The formula is a typical collocation of several concepts, that is the "Dictionary's" data (paradigmatic data), which is implemented in typical contexts (syntagmatic data). The examples of the formulae are indicative of the order: gospel text of the First Epistle of Paul to the Corinthians (as existing correlates are German *Glaube, Hoffnung, Liebe*; Dutch *geloof, hoop, liefde*; Russian *вера, надежда, любовь* etc).

The cultural theme of the formula presents a hierarchy of senses, which relate the Christian idea of reverence, and in the layman's understanding—the idea of the highest values of a person. The formula can be described in the terms of a matrix. However, it will be the

matrix of a higher order, than the matrix of a particular concept. To this end, my follower, L. A. Kharlamova, and I coined the term *the matrix of the second order* (Proskurin, Kharlamova [Проскурин, Харламова 2007]). The role of meaningful components belongs to the constituent concepts which are *faith*, *hope* and *charity*.

The idea of meaningful enlargement of the described system, that is, structural enlargement has received the name *Autopoietica* in modern research—that is, creative self-building.

The formula's syntagm is the hierarchy of values which is governed by the matrix dominant: "And now abideth faith, hope, charity, these three; but the greatest of these is charity." (1 Corinth. 13.13); these three therefore were included by the apostle into the exceptional group, and were raised beyond other virtues and are at the top of Christian values.

The creative self-built structure, which is reflected in the formula of the epistle, possesses deep etymological premises. The modern English belief cognate of Old Saxon *gilotha*, Gothic *galuþeins*, that is, *faith*, is etymologically connected with the modern English word love that is traced back to the Indo-European stem **leubh*. There is a Gothic correlation of *lubains* "hope" and *lubo*—"love", that originated from the same root.

The etymological circle of the formula is built up on the Germanic languages data basis according to the same cultural algorithm of indication of Christian values and is correlative with the biblical apostle's epistle:



The symbol of conceptual built-up is the formula in itself. It includes the governing value—the matrix dominant—the concept *love*. The significance of such non-semantic sets of entities was defined with the help of the role which is devoted to the concept that is the last in the series (compare the piece by E. Benveniste about sintagmas: *the very last, the most beautiful, the very first* etc. (Benveniste [Бенвенист 1995]). The stressing mark on the last sign of the formula can be seen in Indo-European fairy tales as in Russian fairy tales in verse: *три сына // старший уминый (был бетина, // средний был и так и сак, // младший вовсе был дурак*. The stressing mark on the last personage who was considered as a fool finds its development in the plot of the story in which the very last becomes the most successful and the happiest among three brothers.

The other example is a slogan of the French bourgeois revolution, *liberté, égalité, fraternité*. According to our hypothesis, the last concept in that series is the matrix dominant of the second order. When the formula is examined, it becomes clear that the term *fraternité* is the semantically leading one in the correlative etymologies of Indo-European *kinship* with respect to the term *liberty*. To be free or to have freedom (*liberty*) among Indo-Europeans meant to be among the *kin* (freedom (*liberty*) among Indo-Europeans meant to be among the *kin* which are marked by the Indo-European word **sue* (terms of relatives **suesor*, **suecor* etc.). The Old Indian *svadhinā* or Russian *свобода*, "freedom", are determined by the **sue* and it says that Indo-European kinship ensured the freedom and equality of the member of the group. The synonymous terms of the French formula preserve the given dependencies in the order of enumeration—the last concept is the governing value of the formula.

Cf.:

Yukio Hatayama. *A New Path for Japan* (the article from "The International Herald Tribune"):

[...] In these times we must return to the idea of fraternity—as in the French slogan *liberté, égalité, fraternité*—as a force for moderating the danger inherited within freedom.

Fraternity as I mean it can be described as a principle that aims to adjust to excesses of the current globalized brand of capitalism and accommodate the local economic practices that have been fostered through our traditions [...].

Yukio Hatayama, *Prime Minister of Japan* (the longer version of this article appeared in the September issue of the monthly Japanese journal "Voice" (September 2009)).

The similar trends are evident in Behagel's law of increasing members which "rests on a plethora of examples from Germanic, Greek and the other Indo-European languages which show the stylistic figure of enumerations of entities whereby only the last receives an epithet: "X and Y and snaggle-toothed Z" (Watkins 1995: 24). Our discovery of the matrix built up of the formula with the dominant last concept gives evidence of the enlarged version of the Behagel's poetic law with respect to the Indo-European tradition (for example including the prose and formulae). I show that the last member is not only stylistically marked but semiotically identified as the leading one. It not only increases with the help of the epithet it is a focus of the utterance which determines etymologically, semantically, and semiotically the other members of the formula.

Φίλοι

Δαμαρέτα τ' ἐρωτά τε Φίλωνες

Phylla

and Damareta and lovely Wiantemis (Watkins 1995: 31).

From the standpoint of Historic poetics such enumerations have definite peculiarities in their build up. Once Benveniste noted the characteristic marking of the last member in the series, when the special emphasis is made on the last from the enumerated elements. In its message this observation correlates with the Behagel's law, according to which formulae tends to increase the last member (Watkins 1995: 167). An illustration of this law is the example from Archaic Latin in Cato's *suotaurilia* prayer, *De agri cult* 141.3:

Fundi terrae agrisque mei
Lustriandi lustrisque faciendi ergo

To purify and perform the purification
Of my farm, land, and field.

Here the force is not climatic but iterative: a doubling to yield the figure Argument + Synonymous Argument. The verb phrase (N+V) follows (V) as always; the grammatically heavier phrase comes last, in accord with Behagel's law of increasing members (Watkins 1995: 167). In the excerpt from "The Canterbury Tales" by Chaucer I spotted the increasing member of the enumeration in the formula which is considered in this article, *faith, hope, love*.

And foughten for our faith at Tramissine (...)
And born him wel, as of so litel space,
In hope to stonden in his lady grace (...)
So hote he lovede, that by nightertale
He slepte namore than dooth a nightingale

The formula is transformed by Chaucer with the increasing of the last member in the series the verb which is given in the past, *lovede*. At the same time the formula is increased with the grammatical supplement so hote, which characterizes the verb *lovede*.

The increase of the last member in enumerations is something more than the inherited trait of the poetic word order, the principle that is the inbuilt one in the Indo-European poetry. The principle is valid for the prose and to my mind belongs to the mode of thinking of Indo-Europeans. The Epistle of the Apostle Paul is not a piece of poetry, yet nevertheless the principle is embedded in the utterance: And now abides faith, hope, charity; but the greatest of these is charity.

The third and last (compare the maxim: last but not least) is love. The significance of this virtue in comparison with faith and hope is exceptionally high; it is the utmost Christian virtue. Therefore charity, love occupies the last position in the syntagma. The considered episode includes the emphasis on the last member because it is increased with

the accent the greatest of these is love. The means of accentuation of the last member and the focus of the utterance can be considered as a particular case of an increasing member in the prose.

Wordsworth, who interpreted the First Epistle lines in 18th century, used a rich stock of poetic means, simultaneously stressing matrix dominant of the same formula:

- | | |
|---|---|
| 1. Gracious Spirit, Holy Ghost,
Taught by thee we covet most,
Of thy gifts at Pentecost,
Holy heavenly love. | 4. Faith will vanish into sight;
Hope be emptied in delight;
Love in heaven will shine more bright;
Therefore, give us love. |
| 2. Love is kind, and suffers long,
Love is meek, and thinks no wrong,
Love than death itself more strong;
Therefore, give us love. | 5. Faith and hope and love we see,
Joining hand in hand, agree,
But the greatest of the three
And the best, is love. |
| 3. Prophecy will fade away,
Melting in the light of day;
Love will ever with us stay;
Therefore, give us love. | 6. From the overshadowing
Of thy gold and silver wing,
Shed on us, who to thee sing,
Holy heavenly love. |

Behagel's law is evident in the motif of that verse which copies the idea of the heaviest and the most significant dominant sense of the formula. The principle of the heaviest member first was implemented in prosaic messages.

The idea that the formulae in Indo-European are associated with counting can be explained by the list-like type of preserving non genetic data, for example matrices are embedded into alphabetical texts as in Old Russian *Азъ - Букы - Веди* or Gothic *Aza - Berkna - Gaba* which are matrices with the meaningful messages of that time the former "I know the letters" and the latter "Odin birch (material for writing of that time) gave" as well, they contained counting up to three (one, two, three). The constituent parts of the formula conceal the counting up to three, and the word components of the formula are the counting words of the Indo-European culture. Thus the Russian tradition reveals the evidence that *вера*, "belief", is the first, *надежда*, "hope", the second, *любовь*, "love", the third. The Russians name not only living persons (as once in Rome the names of female saints who were killed for their faith in Christ) but spatial objects: mountains, factory smokestacks etc.) in their sequence.

I shed light on the message of non-semantic incursions into the formula cf. (Benveniste [Benveniste 1995]). The idea of iconicity of course is the main cause of numeric significance of the syntagma as a whole, and its members in particular. Compare *veni, vidi, vici*. One came, then

one saw, then one conquered as a sequence that does not admit the other set up.

The words of the formula can describe the same fragment of environment and can refer to the same situation of communication, which presupposes the availability of two interlocutors: if one believes, it means that the other gives him confidence to believe, if one hopes the other gives him hope, if one loves the other is the subject of love. The one interlocutor presupposes the existence of the other, and their relations remind one of an agreement or the completed arrangements. Just as Yu. Stepanov put it, the words *faith*, *hope*, *love* establish the closed circle of communication: the believers endow hope upon the one they love (i. e. God). The faith gives birth to hope on a person we believe in, and faithful and reliable partners arouse affection and love. Faithfulness (ii) presupposes and even means reliability as justification of one's hopes. When one is characterized as faithful and reliable then one is characterized by the words which are close synonyms. The vector of the actions can be reversed when one who is in love, one believes and hopes, and the situation can reflect the reciprocal actions when both interlocutors mutually believe, hope and love. Thus the vector of the utterance is directed from the first interlocutor to the second, from the second to the first and sometimes in both directions at once. In the sequential communication the vector of the utterance is changeable and interlocutors change their roles.

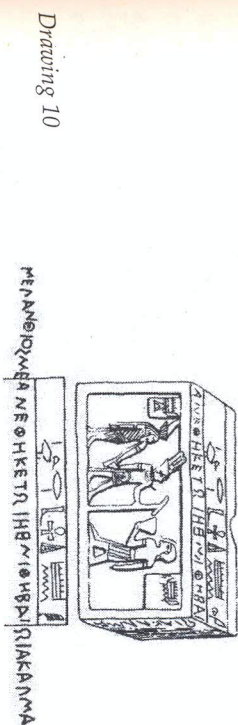
Summarizing the above I argue that the formula remains the matrix. Because its matrix dominant can be changed (compare the formula with the restructured elements as in the title of the book written by A. Grün "Glaube. Liebe. Hoffnung" ("Faith. Love. Hope"), the governing sense in this matrix of the second order is *hope*. Thus the higher order is based on the lower order—the hierarchy of values.

In the semiotics of Ch. S. Peirce the forms of reference of representation to the object were investigated. Such relations are a part of cultural memory. This cultural memory I submit, has in its basis some fossils which possess stability over generations. Their preservation is guaranteed by the panchronous semiotic function which emerges with the birth of man. Of course, the defined matrices, which are analogues of sign-icons, sign-indices, or sign-symbols, are to some degree idealized models. In the actual use the messages can be represented as a combinations of the indicated resources.

Finalizing the essay we are focusing on the transference of non genetic data through generations. The most conspicuous way is the analysis of utterances in the break through periods of human history that is for example the early written culture. The research which has been conducted by me and my follower A. S. Tsentner showed that the early written texts possess characterological feature—autoreference.

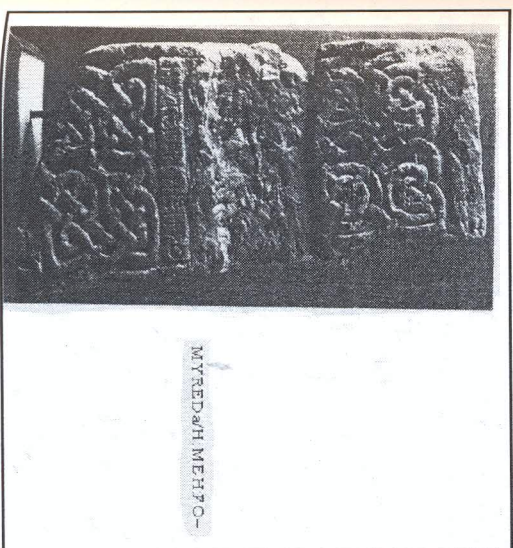
The oral culture when it evolves into the written one preserves the matrix of pre-written texts, the speaker's formula. The earliest written texts on the artifacts contained the inscriptions which were made on behalf of the thing itself as if it had been able to speak. However it was not the personification. Partially it was the oral habit to signify the speaking personality in the total number of communications. The early written culture preserves this replica of oral cultures in multiple inscriptions of a number of Indo-European traditions.

Egyptian bronze base for the statue from Memphis with the inscription in Greek. VI B. C.



Melanthy dedicated me, the statue, to Zeus from Fives.

Incomplete carved stone shaft in two pieces (Alnmouth, probably tenth century).¹



Myredah made me.

Drawing 11

¹ Osaka 1971, p. 47-48 and Appendix.



+ AELFIV MEALH |



+ AELFREDMECH/EHTGEVVYKCAN |



Decorated jewel of gold, crystal and enamel, with legible text of gold letters set in panel round thickness, letters facing back (Athelney, probably late ninth to early tenth century)

Aelfred ordered me to be made.

Drawing 12

Drawing 13

The communicative aspect of the oral tradition embodies in a number of formulae which are embedded in the early written texts.

In my essay I provided an outline of semiotic scrutiny of non genetic info, which can bring fruits unexpected nowadays but which can be elucidative in the future.

IV

Semiotic Laws

1. The law of evolutionary semiotic row

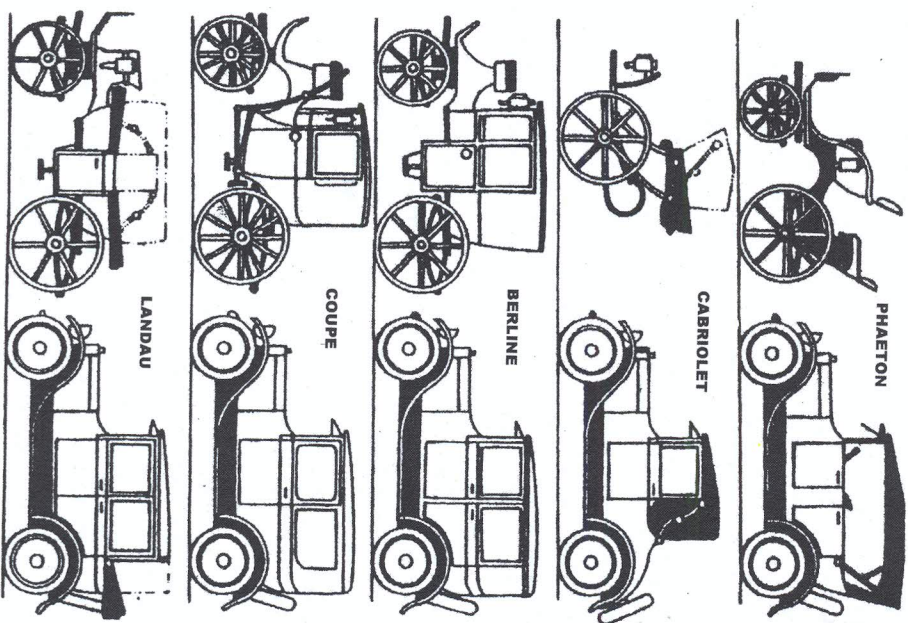
The basic unit of semiotics is the evolutionary semiotic row. This row presupposes the continuity of evolutionary processes and cumulative features of semiotic information for humanity. This row consists of cultural objects which are grouped according to the semiotic perspective and which are connected through metamorphism. The latter object substitutes the earlier because it fulfills its function or mimics its form. An example of such evolution is the evolution of types of cars from coaches or the evolution of railway carriage, also beginning with the coach.

Take the simple example of the car. The first automobiles at the turn of the century were divided, like coaches, into city cars (limousines) and road cabs, and preserved their outer look respectively. The former possessed an interior room separated from the driver, who shared the same roof as his passengers; the cabs were brightly varnished with black paint; the fittings, lamps, door handles, etc were covered with glazed copper; the windows were made of crystal glass, that is they were rectangular; the seats were made of leather etc. The latter, the road cabs, were made rougher and simpler, but more practical; they were placed on light springs with wheels like a cart; the driver and the passenger were seated without a dividing glass under the same roof; and sometimes there was no roof over the driver.

Why did such a difference exist? It was not dictated by the demands of technology. In fact, it was otherwise; new technological development of the automobile called for getting rid of the older shapes and forms as soon as possible. Evidently there was no technical reason but something different; the automobile had replaced the coach. And replacing the coach in the social environment, the automobile had to reinvent, for the first time, its outer form. The coaches in the 19th century were divided into two classes: road coaches and city cabs with the typical differences in their appearance. We come across the substitution—coach → automobile (see drawing on page 70).

"It happened", so the historian of automobiles wrote, "the creators of the first automobiles seemed as if they had forgotten about the resistance of the air. They made the fast self-propelling car, and it acquired high, cornered, step-like forms which were not ready for the moving through the outer environment. The first were designers of racing cars

who in the beginning of the 20th century thought over the problem. They started to make cars low and narrow as boats. It helped. Then they mimicked the shapes of fishes and birds and they started modifying the sides, made round surfaces of hull, sharpened the radiators, lengthened the tails, replaced the outer lamps with wings, and covered the wheels with disks." (see Stepanov [Степанов 2004]). However, common cars continue to preserve the shape of a coach if they are not intended to have a speed of 100 km/h. At this speed the vehicle expends three fourths of its power to resist the air and, correspondingly, three fourths of its fuel. At first glance it seemed that the process of substitution concerns the form. Actually, it is easy to imagine that the self-propelling coach seemed new and frightening because it was able



Types of cars as continuation of types of coaches (According to Dolmatovskiy)
(see Stepanov [Степанов 2004])

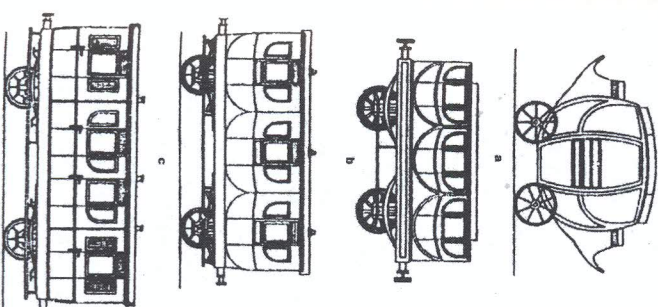
Drawing 14

to run at the high speed of 20 km/h, and was even more frightening if it had an unusual streamlined shape. Similarly, as if there was a requirement not to frighten the consumers, the first electric lamps were made in the shape of kerosene lamps, the first elevators were made as open floors with decorative grilles and ladders without a roof, and the first entries into the subways had the form of parade passages in houses.

In the technically more complicated case the previous object could transform in the process of technical evolution into something new and the same coach can be included into the more complex unit, e. g. the railway carriage, where it forms a separate wagon in the first trains and later the coupe wagon, which consists of a number of coupes / coaches on a flat car (see drawing 15).

The first airports, which did not correspond to their tasks, were built as railway terminals because it was rail terminals they substituted. So it was described by the novelist Arthur Hailey at the end of the 1960s. He wrote that all our old airports remind us of railway stations, because their builders had to rely on the experience of their predecessors. Then he stated that it became the model. So it happens that nowadays there are many long airport buildings, lined up to infinity, and passengers have to walk more than a mile. Somewhere circus-like airports started to be built. It speaks for airports that they began to occupy their own place as independent units, and not as a part of something else.

This process of substitution takes place even then when nothing could frighten or stagger. For example, Napoleon III ordered aluminum toys for his son, but previously such things were made of gold. Why aluminum?



The evolution of a railway wagon. (From J. Hoops. Reallexikon der germanischen Altertumskunde. 2. Aufl. Berlin, N.Y.: De Gruyter. Bd. I. 1973 S. 610).

Drawing 15

Because this newly discovered metal (processed in strips of metal for the first time in 1845) replaced gold for a short period in jewelry.

Something similar is seen in the row *cart* → *coach* at the end of the of 19th century → *automobile*. There are two evolutionary lines. On the one hand the cabin of a car and outer form evolve: cabriolet, two seats and four seats led to the emergence of cabriolet; the coupe for one or two seats prompts the appearance of a type of a car in which one of the occupants is a driver; *berline* is a more luxurious type with the compulsory glass in windows, and the driver who does not belong with the passengers. On the other hand, the pressure of social prestige comes into force. The place of cabman is occupied by the driver who is not a passenger (in the limousine type this place is segregated from the passengers) etc. Along with it, the longer, the more democratic line in the evolution of the automobile is strengthened and it brings about new models with the driver and passengers who are reunited under the same roof in one interior space. There are no more the differences of social rank because the owner of a car is its driver.

We should not think that such processes are connected only with the steep progress of technology. No. At Pazyryk Hill in Eastern Altai, in 1929, during archeological excavations, the remains of horses which were masked as deer were discovered. It is explained that the horse substituted the deer in various domestic functions and in new rituals it necessitated to sanctify the horse by masking it as a deer (see drawing on p. 47).

It meant that the new object occupied in everyday life and consciousness the place of the previous object, inheriting its function. And consequently the form in the broadest sense of the meaning appears to be a sign of the occupied place, function or destination; the form is meaningful; the form grants sanction to the object to exist. That is why we, after Yu. Stepanov, call these rows of phenomena semiotic (because semiotic is a science of sign systems). The semiotic processes of substitution is simultaneously a process of succession and evolution. Allow us to stipulate this phenomenon in the term *evolutionary semiotic process* or *rov*. In the sphere of material culture of primitive society—mainly weapons and instruments were thoroughly described and collected by the English researcher Pit-Rivers and the French Leroi Gourhan.

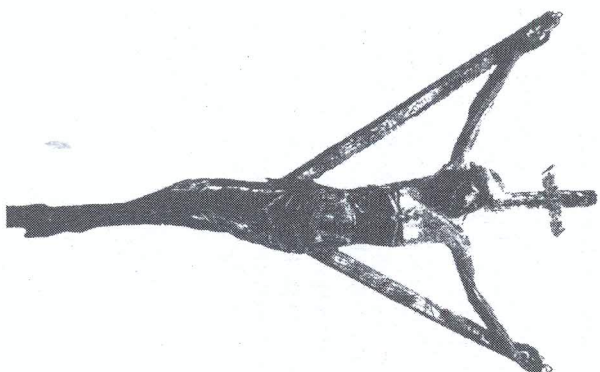
The term semiotic is a part of this concept, due to the other reason because the relation between the substituted and substitute is formed with the help of the sign in the direct sense, that is, by the word of the language the name of the substituted object is used to describe a substitute. Thus, in the row *cart* → *coach* → *wagon* the name of a horse-led coach, also known as a car, is transferred upon a self-propelling coach also named car. Compare the German *der Wagen* as "cart", "coach" and "wagon". Many railway terms emerged as the consequence of transference of function. The Russian name for a driver as шофер, borrowed from the French *chauffeur* where it had meanings "boiler-man" → "fire-

man", "stoker" → "driver".

In any culture there is the peculiarity where the objects and elements of culture are grouped as a sequence. Thus, in the sequence *world tree* → *the cross* we see the development of views upon the world with a change of worldviews from paganism to Christianity. The element of the former sacred object comes into a new model of the world and is described in the terms of the substituted sacred object. The transformation of the sign code the *world tree* → *the cross*. Thus the word for the tree is transferred to Christian Cross.

Here is the description of the cross in the terms of the world tree from the Old English poem "The Dream of the Rood" that is inscribed on the Ruthwell cross:

On lyfte laedan leohle bewunden
Beam beorhtost
To the heavens it leads and is surrounded by the light.
The tree brightest.

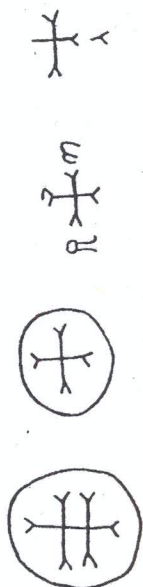


The cross from Coesfeld, Germany XIV century. The cross looks like a tree of life. The tree reminds trinitic sign Y which symbolized life. (From Stepanov, Proskurin 1993).

Drawing 16

Though in the new doctrine the beam tree denotes the cross, it preserves a connection with the old pagan belief in the world tree. Mosko Moskov gives evidence of the world tree symbol in old

Turkish area where it had the form Y and which also denoted the God Tengry (Ibid). After the Christianization, it served as the basis of the Christian Cross in the Old Bulgarian tradition (see below).



Drawing 17

The cross sometimes is thought to be made from the tree of good and evil, which is identified with the cosmic world tree, or which substitutes it; it is described as a tree, growing up to heaven, the immortal plant, firm basis of the universe, the tree of life which is planted on Golgotha. Many liturgical texts compare the cross with the ladder, the pillar or the mountain, the same names denote the center of the world. It shows that the image of the center became a part of Christian imagery.

According to Loudovic de Coypere, not all features of organism are built by natural selection for their current function. Gould and Vrba argue that some traits have been co-opted for a new use. What is more co-optation is said to be a specific kind of evolutionary change.

"Elisabeth Vrba and I have proposed that the restrictive and confining word *preadaptation* be dropped in favour of the more inclusive term *exaptation*—for any organ not evolved under natural selection for its current use—either because it performed a different function in ancestors (classical preadaptation) or because it represented a non-functional part available for later co-optation.

To Gould and Vrba, co-optation, or exaptation, is different than natural selection and consequently it is not a Darwinian kind of evolution. Furthermore, two types of exaptation are to be distinguished:

- 1) when an existing functional organ acquires a different function
- 2) when a neutral or non-functional structure becomes functional.

Perhaps the most popular example of an exaptation is the development of feathers and flight in the evolution of birds. Based on the analysis of the skeletal features of the archaopteryx - one of the earliest birds—paleontologists discovered that although the bird's skin was covered with feathers, the archaopteryx must have been a very poor flyer. Based on these two findings (feathers and rudimentary flight), it has been suggested that the feathers did not start as a mechanism for flying. It is nowadays generally accepted that feathers arose as a thermoregulation device to help the organism with maintaining a constant

body temperature. Incidentally - as a mere side effect of this first adaptation—feathers also happened to be very useful for a different purpose: flying. So the original, functional structure (feathers) for insulation was reused, i. e. exapted, for a different function (viz. flight).

The evolutionary process of the second type of exaptation is basically the same but now it is a non-functional feature which gets exapted. It was also this second type that Lass first recognized as a possible path for language change.

In fact, this type of exaptation is a necessary step in every single adaptation as all functional traits have been non-functional at one point. But, according to Gould, there are additional kinds of non-functional features ready to be exapted. One of these types is often referred to as a *spandrel*. A spandrel is a necessary by-product of a functional trait, or, in other words: its presence is merely caused by another functional organ. A spandrel that becomes functional can be also regarded as an exaptation. (Cuyper 2005: 14-15).

The semiotic significance of exaptation is seen in the history of Germanic languages. The evolution of the German *umlaut* started as a phonological process and than adopted a plural function. In various West Germanic dialects, the suffixal /i, j/ fronted the vowels of root syllables, as, for instance, into in OHG *gast*, pl. *gasti*. When the suffixes were dropped or when they had become a *shwa*, the vowel alterations they produced, were phonologized (MHG *gast* — *gest-e*). In Modern German the plural was then re-analyzed as an inherent property of the *umlaut*, so that other nouns with other plurals began to use the *umlaut* strategy as well (MG *Baum* "tree" / *Bäume* ← OHG *boum* / *boume*). In particular it must be noted that the exaptation is a conceptual invention, but not extension or leveling or reformulation of paradigms with a target or model. This is the basic conceptual model of the change itself (Ibid).

Thus the law of semiotic evolutionary row explains how the change in the history of culture and languages happens.

2. The evolutionary law of weakening intensity of an action

The majority of sign symbols undergo transformation from the stronger symbol to the weaker one and then to the weakest. It is a semiotic law. Below we consider the evolutionary stages of the concept court in the history of Roman law as well as other Indo-European legal systems.

It is expedient to draw attention to the panchronous semiotic foundations of law. Law, as the founding father of international law, and Grotius, stated, is influenced by the natural law, conventional law, and divine law respectively. According to Grotius, these layers of law

evolved into the rules of international law and thus they represent the semiotic nature of law. It is curious that these types of law have correlates, namely, the signs: natural, conventional and sacred. Therefore tides as well as volcanic eruptions and other phenomena have a natural significance for us. Conventional signs are handshaking or the V-shaped sign of victory or peace, or simply a word. The sacred sign is the Christian cross etc. In its core, law was considered historically as a semiotic multi-layered set up. The natural law was construed as the basis in the Grotius system. It might be God who in the distant past created the Earth and all thereon, but the natural law was given by God; it was not so important for Grotius, one of the strong advocates of natural law and the founder of the doctrine of international law on natural legal premises.

Grotius was wrong when he considered the name Jupiter as a name originating from the Latin *IUS PATER*, the father of law, but not in the sense of the currently accepted etymology *Deus Pater*, or *pater familias*. However the founder of international law was close to the truth which is divine origin of law. Modern scrutiny in the field of etymology shows that the Latin word *ius*, the law, and the Latin term *mos* "custom, tradition", as well as *fas*, the divine law, were created according to the same model of indeclinable nouns of neutral gender.

The ancient legal monument—The law of twelve tables, contains the old formula *ius ducere*, which is usually translated as "lead to the court-talking". As E. Benveniste wrote, "The verb *ducere*, in the meaning to lead, developed to the more abstract meaning "judge". The idea of transformation of the meaning from *to drag* or *to lead* to the meaning *judge*—is an enigmatic conceptual change. Thus, in Russian, there exists the word *тяжба*, which is connected originally with the word *тянуть*, "to drag". The word is etymologically connected with the word *ducere*.

The Latin verb *ducere* is connected with Gothic *tiuhan*—"to drag". The Gothic verb was used with a number of prefixes, which differentiated a mode of action *to drag*—*to lead*. Comparing the meanings of Latin and Gothic forms we can define the starting meaning of the verb *duco* as "to drag". Then the Old English word *þing* had the meaning "legal trial", "proceedings".

Why does such a connection of meanings exist? How could we explain the transition of the term from the meaning of vigorous, powerful, intense action to the legal term "trial", "legal proceedings". In the basis of evolution of legal institutions there was a trend of substitution of the strong semiotic action (beating, harsh treatment) to the weaker action (punishment) and then to the weakest in the semiotic sense—the law.

On table III of the Law of twelve tables it says "*post deinde manus*

infectio esto / in ius ducto"—"Upon the expiry date let the plaintiff put the hand on the debtor. Let him drag the debtor to the court talking". The formula *ius ducere* preserves the traces of the original stage of harsh treatment, thus the meaning is to drag by force. According to the judgment of some lawyers, the transition from private harsh treatment to the state court took place gradually; the intermediate stages were the systems of limitation of harsh treatment by installation of a certain order of punishment of the offender. Then the system of bails (at first voluntary, then compulsory) and at last the delegation of rights to protect the accused from the state organs followed.

Let us build a table of weakening intensity of action on the basis of evolution of legal terms (see table 6).

The survey of changing the meaning allows us to see the transition of the meaning *to drag*—*to lead* to the court—*to try*. From the full identity of the action and the informative model, the legal institutions developed a similarity between the action and the denotation when, instead of identity of a sign and the action, the speakers choose the ritualized process which imitated the evolutionary overcome value—the action by force. As a result the semiotically weakened action took place—the trial. The evolution of the concepts *to drag*—*to lead* ("to bring to the court")—*to try* gives us the chance to explain the development of law from the strong intensive denotations to the weaker ones, then to the weakest. It is sufficient to prove the trend with the concept of *wergeld* "money bail out" which substituted in Germanic law the revenge of a kind of talion *Eye for an eye, tooth for a tooth*.

Table 6

The semiotic level	An Action. Identity	Similarity. Gesture instead of action	Conventional level
Biologically relevant	Latin <i>ducere</i> "to lead" or "to drag". Goth. <i>tiuhan</i> "to drag" Russian <i>тянуть</i> "to drag"		
Partially biologically relevant		<i>Ius ducere</i> "bring to the court"	
Biologically irrelevant			Latin <i>ducere</i> —"to try". Old English <i>þing</i> —"trial". Russian <i>тяжба</i> —"trial".

The analogical processes are easily seen in the evolution of sacrifice when the sacrifices in the sense of bloody victims were substituted

with food or other substitutes. The same trend is evident in many spiritual domains. Thus we recognize it as a semiotic law.

3. The law of the quantity of information

The language signs create values which, along with the meanings, are responsible for the content. The dyadic Saussurean approach, as well as the triadic Peircean one, are models used in semiotics for making a program of the content built-up. The plane of content correlates with the plane of form on the basis of iconicity. There is some equivalence between the signifier and the signified. This basic law of semiotics says that the more form there is, the more meaning it has. This law has been defined as the law of the quantity of information. The length of the utterance is a key criterion to define the type of utterance in its capacity to convey the information, that is the more form—the more meaning.

Thus there are positive, comparative and superlative degrees of comparison in the Indo-European languages. They are characterized by the rise of the quantity of phonemes as well as the growth of quality, for example: *high—higher—highest, altus—altior—altissimus*. Thus the signifier reflects the gradation of the signified in the degree of quality. The length of the utterance *the girl is nice* contains less quality because of its form than the utterance *the girl is nicer...* The superlative degree *the nicest girl* has the quantity of phonemes as well as the quality which is maximal. However, by knowing the principle, *the more form, the more meaning* we can create the more powerful utterance in the sense of information than the superlative degree: *The nicest girl I have ever seen*. There are languages in which the plural form is usually longer than the singular form having an additional morpheme. According to Grinberg's data there is not a language in which this relation would be reversed. The signifier of the plural form has a trend to reflect the quantitative supremacy by increasing the number of phonemes. The personal forms of the verb in the singular are smaller in size than the corresponding forms of the plural:

1. je finis - nous finissons,
2. tu finis - vous finissez,
3. il finit - ils finissent (see Jacobson 1995).

The growth of the length of the utterance influences the embedded quality of information. The scale of formality is meaningful with respect to the length of the utterance:

Officialese:

The consumption of any nutriments whatsoever is categorically prohibited in this establishment.

Official: The consumption of nutriments is prohibited in this establishment.

Formal: You are requested not to consume food here.

Neutral: Eating is not allowed here.

Informal: Please don't eat here.

Colloquial: You can't eat here.

Slang: Lay off the nosh.

The degree of politeness is also regulated by the length of utterances:

Can I have a coke?

Could I have a coke?

Would you mind giving me a glass of coke?

Varying the length of the utterance we can create an impact on the recipient. What has been said above is of some significance for the semiotic theory of the language. When we analyze the power of registers in grammar and stylistics we come across the new understanding of redundancy in languages.

The basis for creating informational space is not a binary opposition but macro relations of the bigger units of the text. There are two ways of creation of informative sequences which are aimed at increasing and decreasing of textual units.

In the 1930s, Zipf formulated a law which says that the frequency of word usage influences the length of the word. As it turned out, frequently used words tend to be shorter than less frequently used ones. The most frequently used words belong to the lower registers. Thus the more frequently the word is used, the lower its register becomes. For example, the word *barbecue* became widely used and it acquired the lower register *BBQ* which reflects its high frequency in writing. The development of SMS messaging brought about a number of shortened written segments of text; 4u, IWLTMU etc. All these facts speak for the trend of the move from the higher to the lower registers due to the frequency models.

However there is a reverse trend of move from the lower registers to the higher ones which is typical of grammatical build-up. The whole grammar is based upon the increase of the segment of the utterance for creating a rich meaningful register e. g. Germ. *Gast—Gäste* etc. In order to create a grammatically relevant utterance the speaker as a rule resorts to increasing a quantity of phonemes in the textual unit.

Here is an important feature. The problem of the redundancy of utterances in languages acquires a new interpretation. As has become clear from psycholinguistics research, utterances in language are

redundant. In psycholinguistics one of the means to check the redundancy of the text is an intentional distortion of the text by the systematic omitting of the definite elements of the text, which must be restored in the experiment. The degree of difficulty to fulfill the task is a measure of the redundancy of the language *This car omits every xlitx letter*. If our language were more economical the people would be unable to use contextual information for the regulation of our comprehension and communication would be a difficult and unreliable process. However, modern cryptography admits the redundancy of common language and, for instance, after the letter *q* the English cryptographer never puts *u* because it is always presupposed in this collocation. Taking into consideration the law of the quantity of information, we stipulate the necessity of macro opposition of the rich and poor registers as the basis of grammar existence. It means that the redundancy of richer registers is natural and predetermined. The language grammar could not exist if the poor registers are not opposed by the richer ones. Thus the problem of redundancy is omitted due to the fact that the opposition of macro texts of the higher and lower registers determines the axis of the language system.

4. The law of sequence

The law of sequence, or the principle of the order of mentioning, is fully implemented in the known formula of the advertising business, AIDA—*attention, interest, desire, action*, in which the sequence of components corresponds to logically expected reaction of the buyer upon the consumer item.

The order of components in the formula *veni, vidi, vici* can not be changed and the senses I came I saw I conquered can be given only in this sequence.

1.5. The law of distance

According to this principle, the formal distance between components of the utterance corresponds to the conceptual distance between them. As an example, we could present data which are connected with the expression of qualitative characteristics of action in the English language. It must be mentioned that the conceptual distance between qualitative characteristics and the action is dependent upon its formal means. Thus the minimal distance will be in the cases of adverbial verbs, e. g. *do something badly* etc. It will be longer in the cases of nouns with the adverbial semantics way, manner, fashion etc. The implication of this basic principle is rooted in the etymology of the word adverb, compare the meaning *verb*.

V

Social Features of a Sign: Ethnosemiotics. Methods Related to Indo-European Semiotics. The Indo-European Model of the World

The purpose of this essay is to show that semiosis in language and cultural forms have traceable affinities. It does not mean that there is a rigid correlation between culture and language, especially between ethnological rubrics such as "agricultural", "hunting", etc., and linguistic ones like "inflected", "synthetic", or "isolating". However there are certain dependencies and connections between language and other aspects of culture. "If a study of a language, a set of patterns of speaking, uncovers a certain framework for reality characteristic of its speakers, and if a study of non-linguistic cultural patterns lays bare similar fundamental concepts, there is more than just a non-diagnostic connection between the several aspects of a culture" (Hoijer 1961: 143). This statement, coming from the hypothesis of linguistic relativity, was initially voiced by two American linguists, Edward Sapir and Benjamin L. Whorf. There are two versions of the hypothesis a "strong" one and a "weak" one. Each was simply elaborated in the process of re-evaluation of language—culture affinities in works of the above-mentioned scholars.

The strong version is conveyed in "The Status of Linguistics as a Science" (1929), where Sapir described language in part as "a guide to 'social reality'". The statement goes on to say:

"Though language is not ordinarily thought of as of essential interest to the students of social science, it powerfully conditions all our thinking about social problems and processes. Human beings do not live in the objective world alone, nor alone in the world of social activity as ordinarily understood, but are very much at the mercy of the particular language which has become the medium of expression for their society. It is quite an illusion to imagine that one adjusts to reality essentially without the use of language and that language is merely an incidental means of solving specific problems of communication and reflection. The fact of the matter is that the "real world" is to a large extent unconsciously built up on the language habits of the group. No two languages are ever sufficiently similar to be considered as repre-

senting the same social reality. The worlds in which different societies live are distinct worlds, not merely the same world with different labels attached" (Sapir 1933: 155).

Gradually Sapir was rethinking the rigidity of correlation between language and experience. Later he moderated the so-called "strong" version saying: "Inasmuch as languages differ very widely in their systematization of fundamental concepts, they tend to be only loosely equivalent to each other as symbolic devices and are, as a matter of fact, incommensurable in the sense in which two systems of points in a plane are, on the whole, incommensurable to each other if they are plotted out with reference to differing systems of coordinates". In other words languages give a slant to our comprehension of reality, which is clear when one compares languages of extremely different structures, as in the case of our Indo-European languages, Native American indigenous languages, native languages of Africa etc." (Sapir 1933: 169).

Being Sapir's pupil, B. L. Whorf developed his teacher's thesis of relativity by putting a fundamental question: "Are our own concepts of 'time', 'space' and 'matter' given in substantially the same form by experience of all men, or are they in part conditioned by the structure of particular languages?" Answering this inquiry in "The Relation of Habitual Thought and Behaviour to Language", Whorf compares the language patterns of Hopi, an Indian tongue spoken in Arizona, with those of modern European languages, mainly English, French and German. Whorf found a significant diversity in basic concepts of experience: "Concepts of 'time' and 'matter' are not given in substantially the same form by experience to all men but depend on the nature of the language or languages through the use of which they have been developed. They do not depend so much upon any one system (e. g., tense, or nouns) within the grammar as upon the ways of analyzing and reporting experience which have become fixed in the language as integrated 'fashions of speaking' and which cut across the typical grammar classifications, so that such a 'fashion' may include lexical, morphological, syntactic, and otherwise systematically diverse means coordinated in a certain frame of consistency..." And further "There are connections but not correlations or diagnostic correspondences between cultural norms and linguistic patterns" (Whorf 1961: 92-93).

For the semiotician the proposed hypothesis means that various semiosis in various cultures can be studied only with respect to their relative nature. To some extent it is true.

Having taken into consideration the theory of Peirce one can say that though the sign activity is not predetermined and happens at random the interpreter is apt to finalize assessment of the reality in "final interpretants" that are in lexical meanings which are fixed and linguistic by their nature. We are thus able to distinguish semiosis in cultures

as the function, which is to a large extent linguistic. Special emphasis should be made on the "inner speech" or "silent thinking" which is, according to anthroposemiotic studies, a specificity of human beings.

Whorf stresses "Silent thinking is basically not suppressed talking or inaudibly mumbled words or silent laryngeal agitation as some have supposed." Further Whorf hints at linear dependencies of signs (words), which, as we have shown as a part of the theory of a sign in the first essay, are revealed by Saussure's approach. "Sense or meaning does not result from words or morphemes. Isolations of a morpheme, like 'John' or 'Come' are themselves patterns or formulas of a highly specialized type, not bare units (apparent isolations of words in a vocabulary list also derive what meaning they have from the patterned 'potentials of linkage', which ramify from them and connect them with complex patterns of linguistic formulation). And 'It is not words mumbled, but Rapport between words, which enables them to work together at all to any semantic result' (Whorf 1961: 130).

Exemplifying the above process Whorf referred to multiplicity of proper names and nouns which in English do not bear distinguishing mark of gender, however, the speaker has "an invariable linkage bond connecting it with absolute precision either to the word 'he' or the word 'she' " (Ibid).

Modeling thinking process on the basis of rapport as distinguished from a linguistic utterance Whorf wrote: "In English it is probably a rising toward fuller consciousness of the two great complexes of linkage bonds pertaining to the linguistic sex-gender system. It is, one might say, the total pronominal linkage pressure of the George, Dick, and William class of words, or of the Jane, Sue, and Betty class, that functions in the meditation and not a verbal concept like 'male' or 'female'. But in a language without sex gender, like Chinese or Hopi, any thinking in terms of a sex classification could not be of this nature; it would presumably operate around a word, or feeling, or sexual image, or a symbol, or something else" (Ibid). The last statement is to some extent ambiguous because modeling of "inner speech" in a rigid way as so and so is futile task. Semiotic description should be conducted in the given sample situation from the point of view that "inner speech" can vary ultimate interpretants under similar circumstances. In modern English for example speakers are apt to specify gender adding the concepts like male and female before nouns: He-goat, She-goat. Why not to be so in "inner speech"? In Marcel Mauss's words, "one must note that linguistic facts are effects rather than causes. On the one hand, the categories of collective thought are not necessarily expressed in the categories of language, and, on the other hand, those which are expressed by language are not necessarily those which are the most conscious or most important (Mauss 1961: 125). Thus the final interpretant can

appear as a final feature of semiosis in any forms including verbal concepts, feelings, experience or may not appear at all. So, according to Whorf's terms, differences between "overt gender" in Latin and "covert classes of gender" in English can be elucidated through the idea of a semantic potentiality which entails the question whether such an effect is to be caused at all.

"We witness a complete divorce between linguistic forms and substance of thought. And this divorce is normal, because language is but one of the means of expression of collective thought and not the adequate expression of that thought itself.

Secondly, one must note that the division into masculine and feminine genders as, in certain cases, a close correspondence with quite definite social phenomena. One must recall here the work of Sir James George Frazer on "The Origin of Gender" (Fortnightly review, 1900). Sir James thought it possible to connect that origin with exogamy and the fact the wife, normally of another clan than her husband, spoke another dialect". "For - and it is on this point that we wish the first part of our observation, Mauss argues, - it is not only according to clans and sexes, but also according to all sorts of other social categories that things have been classed or apportioned by language" (Mauss 1961: 126).

Speakers of various languages actualize sometimes different semiotic webs of reality. To study these webs is possible as if they had components of firstness, secondness, and thirdness (modeling "inner speech" as Peirce's theory matches) or as divisions within a continuum (modeling linguistic nets as Saussure's theory outlines).

Continuum studies are especially interesting in linguistic lexicological comparisons. Differences in patterns of word clusters are scrutinized in synchrony and diachrony.

"It is an established fact that the colour terms of particular languages cannot always be brought into one-to-one correspondence with one another: for example, the English word brown has no equivalent in French (it would be translated as brun, marron, or even jaune, according to the particular shade and the kind of noun it qualifies); the Hindi word *pila* is translated into English as yellow, orange, or even brown (although there are different words for other shades of 'brown'); there is no equivalent to blue in Russian—the words *goluboj* and *sinij* (usually translated as 'light blue' and 'dark blue' respectively) refer to what are in Russian distinct colours, not to different shades of the same colour, as their translation into English might suggest.

According to the study of the lexical and conceptual fields of knowledge and understanding in Middle High German the distinction between clusters of words varied in time. For example, around 1200, part of the intellectual field consisted of three terms that patterned in the following way:

Table 7

<i>Wîscheit</i>	
<i>Kunst</i>	<i>List</i>

Kunst referred approximately to courtly knowledge, including social behaviour, *List* was used for more technical skills or knowledge, and *Wîscheit* was a more general term covering the whole field. By 1300 the intellectual field has changed. *Wîscheit* came to be used in a religious or mystical sense, and *Kunst* was used for more mundane skill and knowledge, having lost its connotation of courtly and social knowledge. *Wissen*, a new term in the intellectual sphere, was used for art, and *List* moved out of the semantic field (Trier 1931, 1934).

Table 8

<i>Wîscheit</i>	<i>Kunst</i>	<i>Wissen</i>
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As we have seen above, the values of words vary in time as well as their meanings.

If the value of a word changes the meaning also changes. This is an explicit rule of a system. The storage of lexemes within a language system is under scrutiny of Saussure-based theories. Interrelations are of special importance for ethnosemiotics, because they deal with various discrepancies arising from communication of heterogeneous language and cultural societies. For example, "when one is translating the Bible into some aboriginal language, Eugene Nida writes, the problems of cultural equivalence are far more evident than if one were translating a literary product of our own culture. It is easier to see the problem when one's own culture is not involved, for there is too much about one's own patterns of behaviour which is taken for granted.

The immediate importance of proper ethnological background for the translator can be seen in noting the two most common errors which translators make. One of these is literalness and the other is the desire to avoid foreign words. The ridiculous consequence of literalness is evident in translation of the Semitic idiom "children of the bridechamber" (Matt. 9:15; Mark 2:19; Luke 5:34). In one of the Bantu languages of Africa the translator had attempted to translate this idiom literally, and the result was "children of the house of the man who marries the woman". The translator thought that the children were in some way related to the bridegroom and not to the bride, so he chose the "house of the bridegroom" rather than the "house of the bride". Actually, however, the Bantu translation designated the children of the bridegroom by his other former wives, for among the people of that tribe polygamy was commonly practiced. There could be no other interpretation for the

native. The translator was not aware of the Jewish marriage-customs nor of the idiom "children of the bridechamber", which designated either the guests who participated in celebration, or, as other authorities contend, the friends of the bridegroom" (Nida 1961: 91). It is also important to take into consideration differences in the "pictures of the world". For example, in the Totonac language if one translates literally the expression "from the uttermost part of the earth to the uttermost part of heaven" occurring in Mark 13:27, the native is likely to be confused, or even to laugh, as one did. He commented that such a distance would be nothing at all. His explanation of the Totonac cosmogony was that the earth and the heavens (this is identical with "sky" in Totonak) are formed like the half of an orange. The earth's surface corresponds to the flat surface and the sky corresponds to the curved surface, but the farthest point of the sky and the farthest point of the earth would both be at the extended horizon, in other words, would be identical. The translation of this expression must be changed in Totonak to "from all over the earth to all over the sky", if it is to render the original correctly in terms of the closest cultural parallel" (Ibid: 92-93).

Ethnosesemiosis is a specific cultural sign activity that presupposes such a sign perception that will be common for all members of the society. In order to understand the situation properly one should study its context. For example, "in Maya the normal expression for "thank you" is *diosbootic*, which means literally, "God pay you". Moreover, this is the translation which almost any Maya Indian will give when he is asked about the literal meaning of the word. Nevertheless, when the Maya Indians pray to God, he gives thanks to God with this same term. The specialization of meaning is good-bye. To the native investigator, however, it might seem that in saying *diosbootic* the Mayas are instructing God to pay himself for having done some favour to His suppliant" (Ibid: 97). Close equivalence is presupposed in Russian Bozhe "thank you" that always reproduces its "inner form"—Spasi Bozhe "Save me God" in Old Slavic prayers. A part of a ritual became a common form of courtesy in quite distant cultures. Languages are a part of culture, and words cannot be clearly comprehended apart from the local cultural phenomena for which they are symbols. Thus any fruitful approach to the semiotic problem within any language is based on ethnological premises.

Modern semiotics, the science which deals with modes of signification and the theory of signs, faces a burning issue today - studying the correlation of codes and texts within the process of semiosis. The emergence of a sign is preconditioned by established codes and cannot take place in the culture without adopting a specific program of Umwelt by the individual. The study of world languages reveals various aspects of vision and "tailoring" the reality as well as, in essence, multiple basic

codes of cultures (Proskurin [Проскурин 2005]).

The question is whether the basic codes of different cultures are similar if their language contents are located within the cognate languages of one family, for instance, Indo-European.

From the semiotic standpoint the Indo-European cultures are characterized by features, which make them unique. Indo-European Culture as a whole possesses the original line of development in presenting data through anthropomorphism. Thus, in descriptions of Gods, Indo-Europeans use anthropomorphic images in contrast to the zoomorphic Gods of Egypt.

The similarity of codes in Indo-European cultures can be exposed through typical interpretations of the world, ideas about the time and a human being. The semiotic method allows us to specify also the other parameters of Indo-European culture. The similarity in the preservation and development of information is thus established. The Indo-European culture is characterized by the same matrix of the alphabetical concept of writing. The powerful tradition of poetics has been developing on the ABC's basis.

The unique nature of alphabetical writing is underlined through basic interpretations that the Indo-Europeans conceive in their tradition of the sign making, semiosis. The possibility to denote in writing vowels and consonants, thus reproducing the linear stream of speech, has not been matched by non-Indo-Europeans. The consonant syllabic Semitic writing is used for Old Jewish and has completely different matrix principles of the build-up.

The enumerated features seem to be significant in stating the issue of a special discipline—Semiotics of Indo-European Culture or Indo-European Semiotics. The semiotic method in application to the study of languages and cultures in the Indo-European area draws together cognate languages and cultures not only due to the similarity of linguistic forms but the similarity of images that stand behind the vocabulary, grammar and texts. It is possible to differentiate core images from marginal and borrowed ones. Thus in naming Gods the Indo-Europeans rarely resort to zoomorphic images; if any, they have symbolic reading (Proskurin [Проскурин 2005]).

In fact, we propose a new field for semiotics that concerns ethnolinguocultural constituents of the language sign. So in this tenor semiotics appears to be a multilayer array, which encompasses achievements of the comparative historic linguistics, as well as data of the history of ethnic cultures and languages.

The principal stipulation of such semiotics is determined by dominant codes of Indo-European Culture, which are precepts of existing forms of preservation of non genetic data. Such semiotics brings about specific means of measurement of linguistic and cultural domains.

The codes that we consider crucial for the Indo-European world are the following:

- 1) anthropomorphism in descriptions of Gods,
- 2) the dominant cosmological concept - the center of the world,
- 3) functional subcode: the language of men and the language of Gods,
- 4) homogeneous Indo-European poetics that inherited common personages and plots, e. g. The hero kills the dragon (see (Watkins 1995)).

To this end we add a linear mode of signification. It is arranged through the expression of vowel and consonant sounds in writing as well as preservation and transference of data through generations: the culture of anagrams precedes the culture of acronyms.

Indo-European cultures tend to preserve linguistic data in specific matrices. Thus symbolic lexis are transferred through a matrix copying the values standing behind the concept. For example, the concept 'belief' preserves the values of *trust, confidence, reliance, credence*. It is differentiated from the other matrix 'belief' of *faith, religion, worship, cult*. The decisive sense we call a matrix dominant is the governing value, second in rank. Thus symbolic concepts, which do not possess evident references, disclose some in-built hierarchies, which are known and shared by the most of the speakers.

Indexical elements of languages are more evident in transferences and are preserved as shifters (pronouns), referential concepts of deixis. Iconicity of Indo-European languages is illustrated by reduplication as well as the mode of word changes (compare degrees of comparison of adjectives and the principle of the mass of the sign—the more form, the more meaning).

However, it should be noted that a slant of our vision in Indo-European Cultures is determined by fundamental concepts of Indo-Europeans. It means that we stipulate a possibility of existence of a number of semiotics (Assyro-Babylonian semiotics, Chinese semiotics etc.) as well as plausibility of some other Indo-European semiotics which might be built from the standpoint of an alien non-Indo-European culture.

For example, the person who speaks Dyrirbal, an Australian aboriginal language, should use before every noun one of the following four words: *bayi, balan, balam, bala*. In order to speak good Dyrirbal, one should use a classifier properly. With a certain degree of simplification the taxonomy of classifiers can be as follows:

- 1) *bayi*
man, kangaroo, majority of snakes and fish, some birds, a great number of insects, the moon, rainbow, some kinds of spears,

- 2) *balan*
women, dogs, some snakes, some fish, majority of birds, scorpions, everything that is connected with water and fire, the sun and stars, shields, some types of spears, some trees,

- 3) *balam*
all edible fruit and plants, ferns, honey, cigarettes, wine, flat cakes,
- 4) *bala*
parts of the body, meat, bees, wind, sharp sticks, some types of spears, majority of trees, grass, mud, stores, sounds, language.

U. Eco sees some similarity between the principles of distribution in Dyrirbal and the European languages. Using an approach of shifts the author of the treatise "Kant e L'Ornitotrinco" reduces the grammar of Italian articles to Dyrirbal taxonomies.

As a result of that move a structure similar to Dyrirbal emerged, where the Italian articles *il* and *la* were classified through the accustomed distribution rules (with words like *man, birds, tiger* etc). Instead of the traditional Italian language grammar the author of the project tried to imitate semiotics of Dyrirbal. U. Eco says: "Let's suppose that a people lives on one Mediterranean peninsula, who have a strange habit of using two words *il (lo)* and *la* before every noun. The usage is loaded with the following categorical effect: they use *il* with man, kangaroo, a great number of snakes (boa, python, cobra), many fishes (pike, sword fish, shark), many insects, the sun, a season of the year, boomerang, a rifle, sunrise, rhinoceros.

They use *la* with women, a tiger, some snakes (viper, grass-snake) some kinds of fish (goldfish, trout), many birds (sparrow, large blue-bird), insects (a wasp, a fly), water, the moon, stars, armour, a pistol, a spear, some trees (oak, palm tree), giraffe.

Thus a completely new classification, which is based on a different principle, appears in Italian".

The above has importance for semiotics as a whole.

The modern semiotics is conscious of its fundamentals. There is semiotics of music, architecture, fashion and cinema but all these kinds of semiotics have fundamental principles, which are not alike. The sign in semiotics of cinema as an alternated sequence differs from the sign in semiotics of fashion, where it is more static and stable for apprehension. So shifts and transpositions between specific kinds of semiotics seem to be impossible and semiotics are closed. Thus every semiotic experiment demands its own semiotics.

The semiotics of Indo-European Culture possesses principles in its basis, which could be seen as universal but only at first glance. Nevertheless, at a closer examination the researcher comes across the

unique conceptualized domains (Proskurin [Проскурин 1990]).

According to Peire, the sign is everything we attach meaning to. The members of Indo-European societies attach signification to the whole chain of sounds and denote all the speech stream (the linear principle). The semiotics of other cultures are indicative of other principles, for example, image generation that is secured by the speaker to a certain sound segment.

The Japanese tradition used *mora*; the concept that corresponds to a phoneme or a syllable. The latter concepts appeared in Japan due to the outer influence in the period of openness to the Western culture. The treatment of *mora* as an elementary particle brought about various consequences up to attempts to single out the meaning for every *mora*, that begot the rest. Meanwhile it seems difficult for Europeans and Arabs to specify the etymological meaning of a sound. Such an approach to the text that is to analyze from *mora* to a sound has been preserved in Japanese tradition now (Алпатов [Алпатов 2001: 32]).

The utterances in Indo-European tradition have freer distribution of phonemes and less firm structure of a syllable.

The most important feature of Indo-European Culture, as we said, is anthropomorphism. Indo-European Gods appeared manlike. There exists a strong belief, which is shared by majority of scholars that even the languages and their vocabulary have two subcodes: the language of men and the language of Gods. The very name of the Supreme God of Indo-Europeans is the ancient formula of descriptive nature **diu-phter* "pater familias". According to the rules of descriptiveness the researcher should admit the existence of a hidden name that could be the authentic and sacred. Let's compare this hypothesis with the descriptive analogue *Beowulf*, the name of the hero-bear ("bee's wolf" = "bear") that has another hidden name for a bear Ind.-Eur. *Orks*, Old Ind. *Rksa*, Lat. *ursus*. The name has got only one replica in the Old English vocabulary—the name of paradise—*норяна word* (more details in (Stepanov, Proskurin Степанов, Проскурин 1993)). The implication of the other name that is existent instead of descriptive **diu-phter* is more evident in Old Irish and Hittite than in Latin and Old Greek with their personified Father (Father Zeus and Jove). The registered tendency of these names to become proper names in Old Greek and Latin reveals their peculiarities—descriptive semantics.

However, there is another point of view. The analysis of Summer cuneiforms in Hittite shows that all the names of Gods among Indo-Europeans have a complex nature, because these cuneiforms often served as the sign of God and preceded the proper name:

Ha-ba - tu
Goddess Hebat

Diagram 5

The Indo-European formula **diu-phter* occurs in Hittite *Attaš šiuš*, "the father šiuš" that was written with the help of Summerogram (Watkins 1995: 8).

The definite article (earlier demonstrative pronoun) of the Irish in Dagdae emphasizes archaic modality as in Hittite *šiuš šummiš* "our own God".

In the Indo-European formula the manlike God is described by the name *Father* in the sense of "the head of the household" but not in the meaning of a parent. In Latin there is a prayer's formula *Mars pater* that gives evidence of availability of a mark of any male God (**phter*). If this approach is applied, the name of Supreme God was probably **dius*, which was later personified in the name of Greek god.

The concept of the world that was current in the Indo-European tradition several millennia ago is the subject of reconstruction. As reported in some works the world concept for Indo-Europeans was thought as a constituent part of mythological topic of the world tree, Indo-European **medhio*, that divides the space and creatures into three parts. The authors of "Semantic dictionary of Indo-European language" T. V. Gamkrelidze and Vyach. Vs. Ivanov built up a tree of semantic features of nonwild animated beings. The wild animals, in their turn, are subdivided into three groups, namely, creatures of the upper world [**h₂ue(i)* bird, eagle, crane], animals of the middle world [**bhudhn* - wolf, bear, leopard etc.] and animals of the lower world [**medhio* - wolf, bear, leopard etc.] and animals of the lower world [**bhudhn* - snake, worm, otter]. The stem **h₂ue(i)* is represented in Old Indian *vati, vaiti*, Old Greek *aei* "it ains" and the replica of this name is found among the names of creatures of the upper world. Compare Old Indian *vi*, Lat. *avis* and so on. The stem **medhio* is found in Old Indian *madhya* and Old Icelandic *Mithgarthr* "Middle world". The stem **bhudhn* occurs in Old Indian *budha*, Old Iranian *bottom* (Smalsitig [Шмальстиг 1988: 44]). Sometimes features of a reconstruction are compatible with peculiarities of another, when they are considered altogether. Thus Old Germanic **midja-gardaz* was considered as a partitive phrase, that denotes an absolute center of the tradition, that is symbolically embodied in a tree, mountain, pillar, pit (Proskurin [Проскурин 1990]). In comparative linguistics it is noted that a similar phrase is the Latin partitive phrase *medius collis* "the middle of the hill", that gives direct evidence of acceptability of such reconstruction in Germanic studies. So the basic semiotic categories as well as a micromotive of the world tree and taxonomies of culture are compatible with etymologies, lexico-grammatical phenomena of the languages. However such compatibility is evident only in some cultural areas, particularly, in Baltic and Old Germanic regions.

One of the criteria of establishing conceptual structures is a new

approach to the analysis that is a combination of the etymological analysis, on the one hand, and the analysis of excerpts from the texts, on the other hand.

In the traditional approach that has been intensively developed in Anglo-Saxon studies, primarily in the works by Ch. Benning and E. Dick etymological meaning is transposed into the contexts and brings about "enforced" interpretation that ignores synchronous, current semantic bonds (see criticism of such an approach in the work by Shabram). In the conceptualized domains the search for interconnections, that is laid in the basis of signification of cultural phenomena, is conducted within the frameworks of the specific reconstructed topic. The ideas, reflected in semantics or principles of nomination, can be indirectly traced in contextual motives of the investigated tradition: plots, archaic formulae, poetic figures, epithets etc. In a nutshell, the scholar, researcher of spiritual culture is bound to restore primarily these fragments (words, phrases, texts, poetic means) and only then specify "grammar"—the structure of rituals, genres of folklore, mythological beliefs, symbols and functions. As a whole such an analysis allows us with a certain degree of precision, to distinguish the most archaic texts and their parts from the totality of texts and to picture evolution of the concept in the chronological perspective. These conceptualized domains help to reconstruct the basic theoretical and ideological phenomena laid in the archaic texts, because principles of nomination are treated in this approach within the development of cultural themes while the real contexts are screened through specific motives (Proskurin [Проскурин 1990]).

For example, the most ancient motif of the world tree as a symbol of the total world is thought about in association with a trunk of the tree, its crown, trunk and roots, revealed through the Indo-European studies (Gamkrelidze, Ivanov [Гамкрелидзе, Иванов 1984]) and backed by the facts of Anglo-Saxon tradition. The concept was discovered in a number of archaic texts, which were analyzed in the chronological perspective. In Anglo-Saxon tradition the grammar of the ancient Indo-European ritual **medhio* is evidently due to the analysis of the word *midlangard* word to word—the middle of the world (Old Germanic **midja-gardaz*), that is connected with the cosmic symbol—the tree in archaic context of Daniel and then the cross (the tree) in the poem "The Dream of the Rood". The world, which was thought as the space with the sacred center—that is the principle of nomination or the language theme, is represented through various cultural topics.

The shift within the motif (the tree—the cross) is based on two fundamental mechanisms: the conservative and the innovative. The conservative mechanism is embodied in two types of formulae in poetry and in prose. The innovative model possesses relativity and the

innovative texts become evident against the archaic background.

In some Indo-European languages there is an overlapping connection of senses "the tree" and "the middle". Indo-European **medhio*, which generates the meaning in Baltic and Slavic languages: Lithuanian *medis* "tree" and Slav. **medja*, Russian *межа* "middle" or "the boundary between two parts of the land (compare Russian preposition *между*—"between").

We can immediately sense some specific relations between "the tree" and "the middle", something that illustrates a particular semiotic law; the transference of the name of the vessel to the content of the vessel (e. g. *two spoons of oil*) or the transference of the name "boundary of the space" to the whole space within its borders (e. g. *come into the circle*). But the latter are really universal, however the related senses "the tree"—"the middle" in other languages are not observed and consequently the relation is not universal.

So in this part of Indo-European vocabulary we state a common semantic feature—the strong association between the concepts "the tree" and "the middle" and this association does not have a universal character. Thus the researcher deals with the areal phenomenon in Indo-European culture.

Now it is not difficult to indicate, except in a geographic area, where a tree or a number of trees were used as the sign between fields and settlements, some basic foundation, namely the myth (a mythological concept) of the world tree or the tree of life. We should remember that Adalbert Kuhn, a founding father of comparative textology compared the Germanic *ashtræ* with the synonyms *Weltsche* "the world ash tree" or *Welbaum* "the world tree".

From the semantic standpoint it can be represented as follows:

The world has its middle, the center; there is a tree in this center, which is the pillar of the world, axis mundi; the keeper of life strength and the roots of the tree extend to the inferno; its rich crown is in the middle of the world; on Earth, the upper part suspends the heaven—the place, where Gods live.

The first brief description of the concept world tree was given in the material of Old Germanic Culture by J. Grimm in his German mythology (Grimm 1844: 756-760). Later Veselofsky developed this research. The first enlarged description with multiple analogues from Indo-European and non-Indo-European traditions of the peoples of Eurasia (especially the northern Eurasian parts of Russia and Finland) belongs to Uno Holmberg (Holmberg 1922). He showed in particular, by publishing pictures, that it was possible to see the world pillars in the Finnish settlements of this time. Thus, the association of the concepts: "the center of the world" and "the center of our world"

implemented.

Gothic *fairhus* "world" is related to Gothic *fairgumi* "mountain" on the one hand and Indo-European **perkuns* "oak" on the other. The association of the central sacred symbol with the tree is a unique phenomenon of Gothic etymology, proving the reality of the Indo-European reconstruction of the ancient model of the world and its main mythological concept—the world tree. The marginal etymology that is revealed in one of areas of the Indo-European world can be considered as the basic etymology for the whole system, the concept is preserved in the outskirts of the system.

Developing our common thesis about the mythological concept of Indo-European tradition Yu. S. Stepanov says "...there is another research line: they all (the Russian *перст* "finger", Old Russian *пърстъ, прѣстъ, перстъ* "ashes", "earth") descend from Indo-European **perkū*, as Latin *quercus* "oak" and Slavic *Перун* "God of thunder and lightning", Lithuanian *Perkūnas* "the same", Old Icelandic *forr* "man" and "tree". Thus the basic, original sense arises—that is the center of the world (Stepanov [Степанов 1997: 957]).

As mentioned earlier, one of the contextual usages of the concept "the world" in Old Germanic Culture is common Germanic **mīdja(n)-gardaz* (word for word—"the middle of the circled (fenced) space").

The data, received on a linguistic basis, directly relate to the origin of Old Germanic words with the meaning "world", and the symbol—central point of the world—center in general, that is a cultural universal idea, typical for the mythological tradition of various peoples. In the mythopoetic tradition the center is the most sacred domain, that is, a district of absolute reality (M. Eliade). Coming from the polysemantic nature of the composite **mīdja(n)-gardaz* in the chronological prospective we do not exclude ambivalence in the principle of nomination of the word. It presupposes a possibility of another interpretation "the middle fenced space" (the concept *Mithgarthr* in the Old Icelandic tradition). However, it is the sacred meaning of the central point of the world that allows us to understand the metonymic nature of this term and the transference of the signifier to the whole world. Thus both conceptions reconcile and become compatible. The restored picture of the pre-written period gives evidence of the center of the Old Germanic world that coincides with the center of the circled areas: the central point, the fenced space or the country within its borders.

It demonstrates the heterogeneous character of archaic space (compare typological plans of mythopoetic space in various cultures: sacrifice on the altar in the center—temple—own settlement—own country etc). Further in the written tradition the relation "the middle"—"the tree" is traced; it is implicitly preserved in the Old English noun *middangard*—the name of the "middle world" and is indirectly reflect-

ed in the early Anglo-Saxon Christian manuscript "Daniel A", in which there is a passage concerning world tree of Germanic tribes. This passage presents itself as an autonomous poetic text, a sample of the Old Germanic alliterative tonic system:

On foldan faegre stode
Wudubeam witiſg, se waes wryrtum faest
Beorht on blaedum naes he beaerve gelic
Ac he hlifode to heofontunglum
Swilce he oferfaethmde foldan sceatas
Ealne middangeard oth merestreamas,
Twigum and telgum

There is a nice tree on the Earth
It was firm in roots, bright in fruit,
It was not equal to the grove
However it grew to the heaven
It covered the earth space
All the middle world to the sea-oceans.

In the later Old English poem "The Dream of the Rood" the cross (Old Engl. *beam*—"the tree") is represented as the central cosmic symbol that connects the middle world with heaven and defines the extension of space. In the excerpt, the alliterated tonic text is a replica of the earlier text and it stands alien to the text of the poem.

In its turn it enables inclusion of the description of the cross in the text of Old Germanic poetry and presents its comparison with the traditional world tree.

On lyfte laedan leofhte bewunden
Beam beorhtost
Eall thaet beacen waes begoten mid golde
Gimmas stodon faegre aet sceatum [...]
He tha on heofonas astag;
Hither eft on thysne middangeard mancyn secan

The tree (cross) grows up into the heaven, surrounded by light
The tree the brightest
The stars stand in the corners of the Earth
He (Jesus) went up to the heaven
Hither in the middle world return - the people to judge

Instead of the contextual meaning in Daniel, the concept "middangeard" enlivens the chain consisting of the lower, middle and upper world which prevails in Christianity.

In a code word of the world there is an implicit presence of an object—the sign of the real world. The concept of the world tree is relat-

ed to the pagan map of the world while the cross is related to Christianity. In the semiotic codes we sense an evolutionary sequence of objects. One object in the material culture is substituted by another but can fulfil the same function. During a certain period of time the second object imitates the shape and features of the previous one. The second object preserves some peculiarities of the substituted thing, e.g. the modern railway sleeping car evolved from a series of coaches mounted on a flat-car.

So in the history of the Indo-European world a special significance is attached to the substitution of the central cosmic symbol by a new one—the cross. Is it possible to compare the given cultural objects? The general answer is yes, but it is most evident in the evolutionary sequence.

Among the Roman festivities there is a celebration called *Larentalia*, devoted to the wet nurse of Romulus and Remus—Acca Larentia. The festivity was celebrated on the 23d of December. According to legend, Acca was the mother of twelve sons, from whom Romulus organized a priest board of the Arval brothers.

Larentinae, quæm diem quidem scribendo Larentalia appellant ab Acca Larentia nominatus, cui sacerdotes nostri publice parentante sexto die, qui alta dicitur diem tarentum accas tarentinas (Varro, *De lingua latina* 6, 23). "Larentinae is a day, which is called *larentalia* in writing, that has its name in honour of *Acca Larentia*, in which our priests publicly make reminiscence sacrifices for their dead parents on the sixth day, that is a fatal (sad) day and it is called Tarentum Accas Larentinas".

The place of sacrifice is Tarentum, which is a cult place, a grave. The fact of creating such a place at the other festivity *Ludi Saeculares* on the Campus Martius is known. Tarentum of Acca Larentia is situated in one of the districts of Rome which is called *Velabrum*. It should be noted that the name of the games varies: the centuries were completed by the festival called *Ludi Tarentini*. Thus *Ludi Saecularis* took place in 249 and 149 B. C. and signified the end of the past century. Along with the idea of expiation, the festival had an idea of purifying. The festival *Larentalia* was devoted to an outstanding event—the foundation of Rome and was accompanied by the same rituals which denoted the spatial, temporary rebirth of the world.

Both R. Merkelbach and C. Watkins considered a grave in Tarentum as the Roman altar—Lat. *mundus*. During the festivities the Romans carried out the ancient ritual of the revival of the world, which was also called *mundus*, in the pit—altar. Plutarch wrote about the importance of *mundus* in the geomantic rituals of Romans. Again the *mundus* symbolized the sacred center of the world.

Quite similar is the Celtic idea of *dubno*—the central sacred pit, the

bottom from which the world originated.

A unique conceptualized similarity of the Indo-European peoples' concept of the world makes us think of the common cosmological doctrine, which dominated in the Indo-European past. The sacred center was denoted as the place where a central sacred pillar was installed.

Scrutinizing data from Indo-European languages researchers regularly came across a phenomenon which has been little known and rarely described or investigated by scholars. That is the existence of two layers of words respectively connected with the expression of ideas of divinities on the one hand, and ideas of the layman, on the other. The reflexes of this Indo-European phenomenon have been registered in Old Greek, Celtic, Old Germanic languages etc. It is remarkable that this phenomenon acquired a special signification—"language of men" and "language of gods" and has been considered to be a proper Indo-European episode.

Thus, E. Benveniste wrote: "If one reads Iliada 2,419 ως ἔφατ' οὐδ' ἄρα τίω ὃ ἐτεκράναι κε κρονίωv one understands that the god does not properly fulfill the wish, he does not execute anything. He simply must accept the wish and this god's sanction allows the event to happen. The verb denotes the action that should be always carried out as an act of power sanctioned by the upper level to the lower level. Only the god possesses a necessary quality in order to κρᾶναι, that does not mean a material implementation, but firstly, acceptance by the god of that wish expressed by the man, secondly, the god's permission to that wish to happen (Benveniste [Бенвенист 1995: 265]).

Here are two main components of the given meaning. The process which is denoted by the verb κρᾶναι was exemplified in contexts with the following agents: gods, czars, supernatural powers. The process presupposes a permission, an affirmation, that makes the message to be effected. And further "it's the god's approval, the nod of a divinity makes a word into a deed. That's why the czars power is denoted by the verb κρᾶναι, based on a gesture, which grants implementation to that something that otherwise would remain only a word (Ibid: 268). Thus the linguistic data show that the activity of gods and the activity of men are distinct and separately denoted.

Moreover, there is a tradition of recognizing different kinds of language "to refer to a hierarchy of aesthetically marked versus aesthetically unmarked appellations of the same entity" (Watkins 1995: 38).

In Homeric Greek Iliada 20,74 it is spoken about the river Ὀνείων καλέουσι θεοί, ἄνδρες δὲ Σκάμανδρον "Which the gods call *Xanthos*, but men *Skamandros*". The tradition of naming in divine and human senses was typical of ancient cultures. For example, every Egyptian had two names: one for the world, the other for the gods that

was never divulged. There exist still many traditions and ceremonies which require a change of the name (names given to laymen, and names acquired by priesthood in Christian tradition).

It should be noted that there exists a certain unity of opinions, which proposes that Indo-European gods were believed to have their own vocabulary. It is a different occurrence than the biblical motif of some basic words invented by Lord and the rest invented by Adam. That is the idea of consecutive nomination. The Indo-Europeans considered that the divine lexis and human words exist simultaneously yet simply in different worlds.

[Thor] seǥthu mér pat, Alviss...

[Alviss] iǥrth heitr meth monnum en meth ásum fold
hve su iǥrth heitr

kalla veg vanir
ígræen iǥtnar, álfar gróandi
kalla aur uppregin

[Thor]

Tell me that, Alviss...

[Alviss]

how the earth is called
earth is called by men and by Aesir land
the Vanir call it way
green the giants the elves growing
the Uppregin call it sandy soil

Manifold nomination of the same entity can be of some consequence to the history of Indo-European poetics. Old Norse data signalling the semiotic foundation of various names is closely connected with different poetic styles that existed in literature. Celtic languages preserved the unique Indo-European system of sound delivery based on specificity of genres and opposition of two planes of poetry: the epic and the folk. For example, Old Irish verses present themselves a type of Indo-European poetry characterized by woven formulae. Such rules were at the core of knowledge of druids not revealed to everyone but the selected. Old Irish dichotomy *giath berla*—"everyday language", *berla teibide*—"processed language" (the latter was a generic term for the specialized language *berla—na* filed the language of poets).

Berrla ehnascartia "partitioned language" and etc. is preconditioned by the existence of the opposition "the language of men"—"the language of gods" which was available in Indo-European. Let us consider such a coordination of syllables in Old Irish tradition. It should be noted that there are two layers of syllable coordination: on the basis of the syllable An and the syllable As. According to our preliminary hypothesis all the verse technique of the poem was based on counterposing of the higher epic belonged to the language of gods (*DULAN*) to

the profane (*DULAS*).

Duan is a poem composed by the poet while *Duas* is a remuneration given for the poem. It is not accidental that the poem begins with the address to God Amorgein. According to the hypothesis of two Indo-European languages—the language of gods and the language of men—there should be a some principle of this phenomenon within the text of the poem:

AN A Amorgein ánmollaig

ara-fesser márfodla
ferbae filed feith
Furim sénsamaisc
ar déin co dronchóiri.
Dligid boin mbáinlaeg
ar main soir sétnatha.

AS Sías Iulgach lámmeasab

ar lér laídi léringther
Ech dá bó bélfotach
láath a réim, ar ardmain
Biaid bó fó cainchetair
ar anair n-ilchoraich.
Cúic boí cadaha márnatha
nad écressa ceramna
Carpat cumaille cachae anamna

Oh, Amorgein, brightly praised
You know the great distribution
Of cows among filids (poets) according to their ability
You should prescribe to give a cow for *Dian* (poem) with sound proportion
The white cow with a maverick is to be given
For the noble treasure of *setnath*
It is required to give a cow with milk at a full price
For *laid* composed on the see shore
The stallion at the price of two longlip cows
Quickly running, for the high *emain*
There should be four fine cows for multysounded *anair*
Five cows for every large *nuth*
The bodies of which are not thin
The chariot at the price of the woman slave
For every *anmainin*.

We shed light on the content of the verse through the opposition of two syllables. Such a partitioning is conditional and it reflects specifics of divine and profane in poetry. The first part of the verse, headed as *An* (as *Duan*) is connected with the address to God Amorgein, the giver of inspiration (*A Amorgein ánmollaig*). According to the tradition the

address to God was the first postulate of *Dian* and possessed the sound proportion of that language. It is not accidental that almost all the names of Old Irish pieces of poetry had names with anagrammatic nature *dian*, *etain*, *amatin* etc.

The second part of the verse *As* (the reason of *Duas* remuneration and the content of the verse) is a description of the poetical process as well as received gifts (*Sias luglach linnesaib*) and was a genre of common poetry (profane language). It described what kind of *Duas* was prescribed for the composed poem.

Thus, in accordance with one of the Indo-European ideas, the language of the verse is a part of an archaic ritual of gift exchange. The epic (divine) and the profane (gifts) are neighboring each other and are reproduced anagrammatically.

In this way Indo-European poetics presents itself as a semiotic frame that is consistent with basic semiotic codes.

The other vivid example of division of lexis is in the ancient Roman prayer to Mars pater. The ritual has a specific name *su-oue-taurilia*, i. e. "bull". The most remarkable feature of the ritual is the availability of the other names of the same animals. E. Benveniste considered them to be the names of sucklings. However there existed special rules in the prayer. The first row of animals, profane, which were not sacred and separately not pronounced, preceded the sacred divine matter, the second names.

Commencing the ritual a landowner used to say: "Mars, pater... this is the prayer appealed to Mars, the request that he would accept three sucklings". Then the prayer continued as "Mars, pater, euisdem rei ergo, macte hisce suouetariibus lactentibus esto" — "Mars pater, in honour of that, be glorified by this sacrifice of these sucklings". Then Cato who quoted this prayer wrote: "ubi porcum immolabis, agnum uitulumque, oportet" — "When you make a sacrifice porcus, agnus, uculus will be necessary" (Benveniste [Бенвенист 1995: 40]). Then, in the Indo-European world, the second names became nicknames of divinities. Among them there is the name of Christ as AGNUS.

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This book contains a series of essays, which are devoted to burning problems of semiotic research in the past and the present. The continuation and enlargement of semiotic approach nowadays brings to the forefront issues of general semiotics, biosemiotics, anthroposemiotics and cultural semiotic studies. The book is recommended to the students, postgraduates and scholars.

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