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FOUR MODELS OF SEMIOTIC COMMUNICATION

All social actions undertaken within reality involve acts performed to create, process, transmit, and gather, as well as receive, replicate, or even destroy messages on a given subject. It is signs that constitute the material which undergoes such operations and the operations are generally carried out by people, although certain human actions of this sort may be simulated by machines. We will not be discussing the material dimension of signs, although their great diversity in this respect is worth bearing in mind, as they may take the form of gestures, movements, sounds, inscriptions, light or colour signals, compositions, structures, and sometimes even smells or tastes. We will limit our explorations to linguistic signs, both phonetic and graphic, for this category has been developed relatively well in different civilizations all over the world and therefore deserves the most careful attention. A linguistic sign may be considered either an acoustic object, produced as a sound and received aurally, or an object produced graphically on a physical base (like paper, board etc.) and thus received visually.

Any operation which involves signs may be called semiotic, from the Greek *semeion* meaning "sign"; in scientific jargon the term "semiosis" is also used to designate a particular semiotic act, while the branch of science which deals with acts of semiosis is called semiotics. This branch may be otherwise defined as the general theory of signs, which takes interest in all types of signs, especially the ones used to form ethnic (also called natural) languages. Semiotics itself, as the science which organizes human knowledge and experience in terms of communicating with others, uses the

so called metalanguage — a form of language serving to describe other languages, in this case languages used among different ethnic groups or in different human environments. Needleless to say, even people lacking academic qualifications can talk about the practical aspects of linguistic issues in their own environments. Such a discourse always qualifies as metalanguage; it can be referred to as the first-order metalanguage, while a scientist who discusses this metalanguage uses it on a whole different level — she uses the second-order metalanguage. Theoretically, one may speak of an entire hierarchy of languages of higher and higher orders, and it is not insignificant whether one has a thorough understanding of this hierarchy, as it can sometimes prevent her from drawing false conclusions. For example, the sentence "John heard that Wawel had collapsed" does not inform us about what had happened to Wawel but about the fact that John heard someone say it, but it does not by any means have to be true; John could just as well be lying that he heard that. Lying, confabulating, deceiving, and joking are all forms of semiosis, so when one hears a statement "I think that I'm going to die tomorrow", it only means that such a thought ran through its author's head, although these kinds of announcements are usually mistakenly considered premonitions, prophecies etc. From now on we will try to avoid metalinguistic issues, however interesting they are, in order not to overcomplicate the descriptions of basic semiosis.

Semiosis is therefore one of the forms of human behaviour. Humans sometimes behave in a semiotic manner without engaging in any kind of asemiotic activity which would have a clear connection with a given act of semiosis (e.g. talking to oneself while standing still) or, more often, an act of semiosis bears obvious relation to an asemiotic activity accompanying the semiosis (e.g. producing echo, chanting while marching, giving a command and executing it, an actor moving on stage and speaking his lines, etc.). Such a case is important because very often asemiotic situations accompanying semiosis provide us with the opportunity to notice a string of coincidences when specific sound sequences recur regularly right before or after a certain asemiotic event, which leads us to conclude that there is a semantic connection between the two phenomena (e.g. the word "car" appears in situations with a four-wheel motor vehicle involved, which allows us to assume that the word is linked to such vehicles).

If that was the only method we adopted to learn the meanings of words, our semiotic behaviour would be riddled with misunderstandings and inconsistencies to a much greater extent than it actually is. Fortunately, there are different modes of learning meanings, especially through verbal specification

of details or by establishing extemporaneous semantic conventions between communicating people. Conventions may also be regarded as a certain norm which regulates common understanding of the semantic spectrum of a word or a phrase and this norm is being established in a society by constant exchange of individual experiences. Despite temporary difficulties, an almost uniform standard and pattern of the use of words in speech is gradually set. The richness of one's vocabulary also depends on one's semiotic experience, and it is generally considered a norm that an average speaker in a given social environment, excluding children who have just started learning, knows specific words spectra, however this belief may also be false, since vocabulary deficits are very common.

Although we have been mainly discussing the semantic convention in language and although we have recognized the fundamental importance of this convention in semiotic behaviour, it is also worth emphasizing that other types of linguistic conventions come into play, even though some refuse to grant them the status of norms or conventions. It must be taken into account — in our view — that a well pronounced and correctly accentuated word sends a signal to native users of a given language about the possible homeliness and nativeness of the speaker's semiotic habits, while bad pronunciation arouses the suspicion of otherness, maybe even hostility. The same would certainly apply to syntactic habits, that is, the ways in which words are linked together to form larger meaningful entities. Such socially-established standards of pronunciation, syntax, meanings, vocabulary, etc. can also be viewed as competences of language speakers. At the same time, average mature individuals, who function normally within their ethnic groups and participate in consuming their cultural heritage have similar semiotic competences, although obviously there are certain discrepancies between individuals when it comes to mastering these competences. Not only children, but also members of a different social group who attempt to acquire foreign competences usually succeed only partially, yet an individual may sometimes measure up to the general level.

Such a long list of competences (which could probably be more detailed and rich) conclusively proves how complicated the mechanisms of human speech are and how much effort it takes to master a foreign language to near perfection. Putting aside the acquisition of a foreign language, we know that even in the case of a native tongue, learning native conventions in fact never ceases; every member of a society is learning her entire life how to use his maternal language more and more accurately and she keeps making mistakes and gaffes. Through contacts with the world, one expands her vocabulary and

particularly develops her ontic competence, that is the ability to describe and understand the world. Also one's syntacto-synsemiotic abilities constantly develop, so that one's creativity in using language grows as well, sometimes even to the extent that the asemiotic level becomes overpowered by the semiotic one, as it happens, e.g., in the case of writers, poets, public speakers, men of science, etc.

One of the most important phenomena within this scope is the presence of lacunae or unknown quantities (in mathematical terms) in interpersonal communication. Since they are, in principle, the missing links in semiotic chains, they can refer to either one of the competences necessary for a successful production of an utterance. From a descriptive viewpoint, noticing the lacuna, consciously attempting to fill it and discussing the phenomena connected with it are all activities which belong to the scope of metalinguistic phenomena.

Also, formulating questions while communicating is treated as a typically metalinguistic activity. When one asks if she wrote the name "Shakespeare" correctly, she is usually concerned if she conforms to the general orthographic norm. On the other hand, the orthophonic norm is interesting to someone who asks about the accepted pronunciation of the word "tortilla" or "murza", etc. Relations between words are perfected by asking others about the difference between the expressions "madam" and "lady", or if it is accepted to say "Pink is different than blue" or "Pink is different from blue". But the most common questions are "What is tinfoil?" or "What does <<statute of repose>> mean?", etc. — this is how the person asking attempts to fill the gaps in her semantic competence. This applies as well to questions such as "What is that?" or "What do you call it?" followed by pointing at the object: the purpose of this practice is to eliminate unknown quantities from one's vocabulary. The questions may also refer to accidental circumstances: "When did that happen?", "How much does it cost?", "Is it warm outside?"; this does not refer directly to linguistic issues, but it extends the inquirer's knowledge of her environment, which contributes to the production of stereotypical descriptions of the surrounding world, and it is precisely the expression of what surrounds us that is a necessary condition for successful communication between members of a community.

Thus, the question-answer mechanism may be worth regarding as a mechanism of language formation just like the practices of repetition and assimilation (i.e. operations using analogy, e.g., according to linguists, forms of Polish demonstrative pronouns "tego" ["of this"] and "temu" ["to this"] were created by analogy to personal pronouns "jego" ["his"], "jemu" ["to

him"]; another example: in children's speech the form "mouses" may easily replace "mice" or "goed" may be used instead of "went". The name for this mechanism may be borrowed from the logical term "erotesis" (from the Greek *erothesis* meaning "question"). Erotesis shows in a general manner the entire procedure of posing questions and receiving answers, which is of course present during the entire human life, but it is used with exceptional intensity in the early, formative stages of speech development and it has a crucial influence on later phases of one's linguistic existence. It is even the foundation on which the entire linguistic structure is built. Certainly, it is impossible to recreate the abundance of trivial erotetic interactions between a child and her mother, her grandmother, her siblings, or her playmates, although they have been described to some extent. Meanwhile, these interactions deserve proper consideration as this is precisely the source of our confidence that we are using the right words, even though most of us cannot by any means justify our confidence in linguistic terms. For an average user of informal language, there exist no other linguistic patterns than the ones they acquired in their childhood when they were asking people around them for a given piece of information.

As long as metalinguistic elements used by an educated person are discussed, one can speak of linguistic formulae for assessing the correctness of an utterance, while in the case of a person using language spontaneously, the method for speaking correctly and recognizing the beauty of certain utterances is developed on the basis of the knowledge gained during erotetic interactions. No matter if it is jargon, slang, or a dialect that serves as the criterion, it is still one's metalanguage, one's source of norms for speech acts. (Note that assimilation and repetition are also metalinguistic in character, since e.g. "I repeat" or "I imitate" are in a sense operations with respect to quoting the object language.)

Although linguistic habits of a given environment ought to be treated with due respect, as long as they do not violate social aesthetic and ethic sensibility (like swear words or obscenities), every civilized society displays a tendency toward unification, aiming to solve local, environmental, dialectical, and other differences, as well as to create a language common to the entire society. These tendencies are supported by the standardized education system of a given territory, the mass media (radio, television, cinema, press, books), the army, the church, theatres, and associations etc. It is in the interest of all aforementioned institutions that all individuals remain within the range of their influence, use the same language or at least be capable of receiving one standardized style of writing, talking, and understanding; what is more,

if particular individuals can meet these expectations, they usually benefit from it.

It usually takes the form of a well-planned and coherent linguistic policy of a country, which applies to all subordinated institutions that are implementing this policy. Even if on a given territory such a policy is pursued with a certain reluctance, the society itself spontaneously produces patterns and chooses its preferences. The language used by actors and radio or television presenters occasionally becomes the standard pronunciation, while the language of major writers and journalists becomes a pattern for the production of impeccable utterances. But the choice of a pattern can be more or less free and random, based on arbitrary criteria. It seems that the only reasonable, nonetheless imperfect, criterion, is to rely on the judgement of linguists who provide us with an impartial examination, as comprehensive as possible, of the justifications for using this or that linguistic form or material and who are capable of arguing rationally for or against the use of particular forms. Such a solution was generally adopted in most civilized societies, and the fact that eminent poets and writers of fiction see no need to fully conform to linguists' suggestions poses no problems. A good linguist acknowledges the possibility to create and introduce new words or phrases into the language if this proposal is justifiable and it does not shock the receiver enough to compel her to protest. Distinguished authors are usually recognized also by linguists, who can treat them as "dictators of linguistic trends" imposing new standards, standards which every now and then even the specialists must accept, thus gaining the exciting opportunity to support them with theoretical arguments.

Therefore, it is assumed, and we want to stick resolutely to this assumption, that every individual who uses a given language bases her linguistic operations, consciously or not, on certain patterns, norms, and in some cases even on the laws of this language. Except that in different moments patterns which are different in terms of level and origin are being followed: from naive linguistic convictions of an incompetent and often conceited individual, through basic linguistic knowledge gained thanks to attending a school or reading printed texts, to linguistic studies in their most subtle form supported by a real contact with actual linguistic practice. We call these overall patterns metalanguage, and now comes the time to present a simple model of how — in our opinion — the metalanguage affects speech acts, in other words, how it affects semiosis. Charles Morris's (1938) theory of signs will be particularly useful for designing this model, although we will make use of other theories to some degree as well (e.g. Bühler 1934).

First and foremost, we should agree to restrict our examination only to communication between members of one society in a specific period of time. For the sake of simplification, we shall leave out more complex cases such as situations when a foreigner attempts to make contact with a group to which she does not belong, regardless of whether she succeeds or not. The temporal and spatial framework will be represented as a circle circumscribed around the entire graph (Figure 1). Inside the circle there is the plane of communication, i.e. the process of transferring a message to a receiver or receivers (those who listen) by a sender (a speaker; there may be more than one speaker/sender, but it is rare).

At the same time, it is common knowledge that communication is the most essential function of language. It is thanks to communication that all members of a society are relatively equally supplied with information which organizes the environment, so that it becomes generally understandable and safe for those who inhabit it. The exceptions to this rule only confirm it by prodding the society into making the transfer of messages more complete and improved. The sender performs the role of the 'speaker' when she linguistically (graphically or phonetically) expresses certain contents. This necessary feature of speaking could be called exteriorization or externalization. The role of the receiver seemingly consists in listening to the linguistic text and extracting its meaning, but in fact, listening is merely the preliminary phase of a much more complex process, namely, of making the form and the content of the received message part of one's nervous system (interiorization or internalization).

Interiorization may be more or less persistent depending on various factors, which are the subject of psychological study, but what is important is that the content of the message may sooner or later influence the will and the behaviour of the listener; in other words, her reaction and only her reaction proves if she understood the message correctly or not. It is extremely difficult to provide a theoretical analysis of this phenomenon, since the receiver may and can exteriorize her reaction at any moment, even long after the internalization has occurred, as it often happens. The person who observes both episodes is in position to link them together, but the person who witnesses only one of them does not know the precedence or the sequence, therefore they can only recreate the missing elements in their imagination. In an abstract (theoretical) description, the situation is usually simplified, and it is assumed that the reaction to the message-stimulus directly follows interiorization; this is the simplification we are going to make now.

When the receiver reacts positively to the message, manifests it (exteriorizes it) by making a movement, a gesture, a facial expression, or a comment. Lack of such an exteriorization means a negative reaction. Of course, a positive reaction may be misleading, because the receiver has every right to conceal her actual reaction by making a confusing movement or by saying something not related logically to the message. A detective must be able to interpret such situations properly, but a linguist is allowed to resort to a simplification. Not to overcomplicate matters, it seems that it is enough to carry out a scientific study of the positive reactions in both the existential (the very occurrence of a reaction) and the logical sense (the existence of a logical consequence between the reaction and the message). What kind of logical consequence? Generally speaking, a message that entails a reaction is either a meaningful syntactic structure or a single word, and such linguistic forms immediately refer the listener to their denotation, that is, to a class of objects (as well as events, facts, issues, etc.). If the behaviour (including the verbal one) of the reacting party overlaps with the classes of objects referred to in the message, it implies a relationship between the message and the reaction, but it is the most basic case of a direct logical consequence. Logical consequences may just as well be indirect, in which case several in-between thresholds are to be crossed before one can conclude that the message has been understood. For example, when a burglar hears a police officer cry "Freeze!" and starts running instead of surrendering, it must mean that she did understand the content of the exclamation, but refused to conform to it, as she does not wish to get caught by the police. In the same way, the decision to leave your umbrella at home (or a statement "I'm leaving my umbrella") is an indirect proof of the understanding of the information "Today there will be no rain", since you usually take your umbrella with you when it is supposed to rain. There can be numerous indirect situations like that and it is not always easy to follow their logic, although very often a quick and appropriate indirect reaction can entail major consequences.

We have been trying to prove with the above brief examples that even though the receiver's reaction to the message can take various forms, what underlies it is the proper understanding of denotation, in other words, the message's semantics, as well as a certain coordination of the elements of the denotation with the receiver's behaviour in response to the message. The typology of such coordination should be the aim of an in-depth study, but as far as we know, not much has been done in this area yet.

A few words of comment should also be said about the situation in which the receiver's reaction is observed by the sender of the preceding message

(which is an act of interiorization as well) or by a third party otherwise uninvolved in the communication. It may also happen that the receiver herself wonders about her own reaction and thus becomes the sender. Whatever the case, the point is that the place of the sender and the receiver may be held by different individuals, who are performing the roles appropriate to a given process, as indicated in the graph (Figure 1). Similarly, if one has missed the adequate reaction, she might take interest only in the transferred message; or the other way round — the reaction may be taken for the message; but then one loses sight of coordination, which makes the discussion less complete.

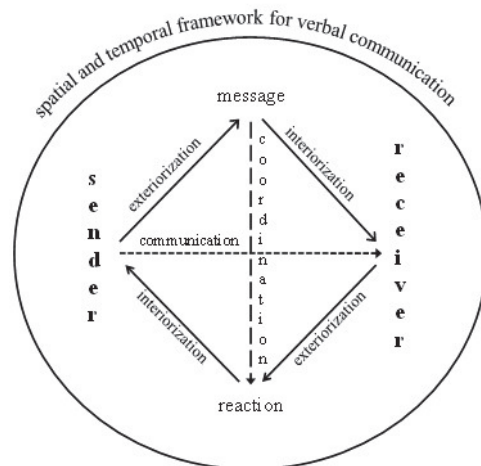On the basis of all foregoing clarifications, a simple model of semiotic communication may be proposed.

Figure 1.

Note: we assume that there is a hypothetical relation of 'coordination' between the message and the reaction, however — in our view — it is merely a product of the observer's (e.g. the receiver's or the sender's) mental process, in which case one can speak of an ontological non-concurrence of the communication process and the existence of coordination; for that reason the arrow on the graph is represented by a dashed line. To be more specific, the very communication may occur thanks to the 'exteriorization — interiorization' phases, so on the graph it must as well take the form of a dotted arrow.

Once this model is established, the previously announced normative patterns can be introduced: patterns which are followed by the participants

of the act of semiosis so that they can play their parts efficiently. Since their roles are different, corresponding metalinguistic patterns must be just as diversified. Anyway, we agreed earlier that every language user has some convictions about how and what to communicate or how to react (exteriorization), as well as about why and when to respond to the message or to the reaction (interiorization). Adopting a theoretical approach, used only in special situations even though it offers the most accurate and possibly the most precise description of the relation between the sender and the receiver in the communication process, we can speak of patterns of receiving procedures, patterns of message creation, patterns of transmitting procedures, and patterns of reaction development; reaction, being eventually received (perceived), ought to be included in the model as well.

Transmitting procedures, according to Bühler's theory, are envisioned as a field of speech acts, in other words: speaking; which corresponds to Morris's pragmatics as the branch of semiotics which deals with relations between signs and their active users (e.g. phonation, graphic qualities, expression, communication). Message creation is in fact the second aspect of the actions undertaken by the sender, but because of its particular importance for semiosis scientists treat it separately. Bühler uses the terms "text" or "linguistic product" and considers it a fairly static element of speech acts; to Morris, on the other hand, it is a branch called syntactics and it is concerned with relations between elements of a compound expression. The latter is closer to a dynamic approach and it deals with the rules for the formation of expressions by combining simpler units into more complex entities. It seems that pragmatics and syntactics brought together constitute the exact equivalent of exteriorization. However, pragmatics, or a transmitting activity, has its own power source; namely, thanks to the receiver's reactions, certain impulses are transmitted to the sender which provide her with motivation and sometimes inspire to produce another statement; generally speaking, we call it interiorization.

In Bühler's theory, the moment of reaction corresponds to understanding (also called a speech act), while Morris uses the general term "semantics", that is the science of the relation between signs and the environment to which they refer (designation, i.e. signifying concepts, naming, denoting classes, connoting an object's qualities and fulfilling, which is the temporal and spatial concurrence of events or phenomena and the locution's content, etc.). The semantic aspect of a particular reaction discussed above influences the process of further exteriorization; semantics as a general set of meaning-related rules is, along with pragmatics, an exact equivalent of interiorization,

which can perhaps be explained as the process in which meanings attach themselves firmly to the remembered acoustic material.

Receiving procedures (such as listening or interpreting the content) are not usually treated as an independent object of study. It is assumed that even if the sender seeks to form her utterance so that it is easily receivable to her interlocutor, she rarely takes into account the latter's personal preferences (acoustic, syntactic, and semantic). However, some predictions may be made based on direct observation of the interlocutor (e.g. when talking to a child, one starts using a simpler language; when talking to an elderly person, one refrains from using teen slang; when approaching one's superior, one adopts a humble attitude, etc.). However, in such cases, phonation, semantics, syntax, and vocabulary usually do not depart from the general norm; rather the opposite — there is a tendency to impeccably conform to the socially-approved norm, as it is generally more appreciated. Consequently, the ideal or the standard of receiver's behaviour is the common language. If it was defined traditionally as a set of socially-established acoustic signs (secondarily also written) operative within the society with rules governing their use, it would seem that this standard, or rather a set of patterns, is superior to the other three (pragmatics, syntactics, semantics), but it is a rather unfortunate approach.

In our view, the receiver's language ought to be defined in terms of the relation it represents; as opposed to pragmatics (which describes the relation: sign — individual), it shows the relation between the sign and the society. This means that the social circumstances of language use, the environment, the traditions, hierarchy, and authority should all be taken into account, and that language changes constantly in the face of new civilizational needs, although at the same time protects its identity and does not allow any changes that would prevent, e.g., three or four different generations living at the same time from communicating. Sociolinguistic studies apparently take this direction, but their attitude towards the three above-mentioned branches has not yet been properly discussed, although it would seem reasonable, if not required. In accordance with the Greek terminology of other branches, I would like to propose the term "ethoglottics", meaning the dominant worldview of a given period expressed through language. Not only does this worldview change, but it also exerts a tremendous impact on speakers, although it may still be home to anachronic views that were excluded from science, since society is reluctant to accept rational explications and favours irrational, traditional elements (e.g. we say "The sun rises", even though it is a known fact that it is the Earth that turns and not the Sun; a sentence

"He's full of the devil" may be recognized as a metaphor by an educated person, but a superstitious one may well take it literally).

The conclusion is that a human being sees the world through the etholanguage ('ethoglossa') of her social group, therefore this phenomenon deserves a proper place in the language system. It does not mean at all that the categorization of the world is fully determined by the language structure, but what it does mean is that particular languages reflect in their vocabulary and in their morphology (derivation or inflection) the distinctions that are important from a cultural point of view and typical for a given society. It results from the fact that the language of a given society is an indispensable part of its civilization and its culture and that lexical items reflect those features of objects, relations, and activities that are important in one's collective existence, so the worlds inhabited by various communities differ from each other linguistically. Hence, users of different languages will behave differently in the same environment, because their languages provide them with different praxeological suggestions. It can be also put this way: one does not know a given custom, but the knowledge of customs is rarely transmitted through movements alone; the movements are usually accompanied by a linguistic comment, which acts as their unconditioned stimulus and it is more common to make use of this stimulus than to actually reproduce the movements. For that reason, non-verbal customs are considered separate and extraordinary, but in this text we are preoccupied with the cases of linguistic manifestations of customs.

On the other hand, it just so happens that during the course of historic events, cultural territories begin to overlap, and then expressions from two different languages or more, sometimes completely dissimilar, start denoting a similar custom, function, symbol, dish, piece of furniture or clothing on different territories, which conclusively proves that within certain domains the worlds of societies speaking different languages may become alike. But it seems more important to focus on the differences which lead to mutual misunderstandings and to those which are difficult to overcome.

This brief sketch of the central thesis of ethoglottics, to some degree clearly modelled on the claims made by such linguists as Wilhelm von Humboldt, Edward Sapir, or Benjamin Lee Whorf, directs ethoglottic study towards lexical material and morphology, which was traditionally included in grammatical descriptions of language and which perfectly completes syntactics. It does not seem correct to introduce here the entire 'language system' and its 'grammar', as Bühler does, because according to the adopted scheme, pragmatics, syntactics, and semantics shall be considered separately,

in other words — there is room only for vocabulary and morphology; the language system comprises of four abstract branches. Yet we ought to assume that these four branches are interconnected and that the analysis of the message's content expands the ethoglottic resources of the receiver, which corresponds to interiorization (according to the model). On the other hand, the receiver, in reacting to the message, exploits her ethoglottic resources in order to coordinate her reaction with the message about the interlocutors' common environment and thus exteriorizes her new semiotic experience, which is the very essence of exteriorization on the part of the receiver.

As to the reflection of the world in linguistic productions, we will return to this subject later in the text. For now, in order to summarize what has been said so far, we shall present a complete, synchronic model of semiotic communication. "Complete" meaning that the simple model of communication presented before (cf. Figure 1) will now be elaborated by adding the metalanguage, or four normative patterns. The model is synchronic in the sense that it describes the act of semiosis carried out at a particular time and place. It means that it is being modified within these limits; yet the very process is theoretically abstracted from its space-time continuum for the sake of clarity of description, so, in that sense, the process is as if immobilized. Obviously, when enlarging the observed fragment, one can notice more relationships and semiotic changes, but for methodological reasons it is advisable to clearly see the simpler process first and only then can it be expanded with more details and additions.
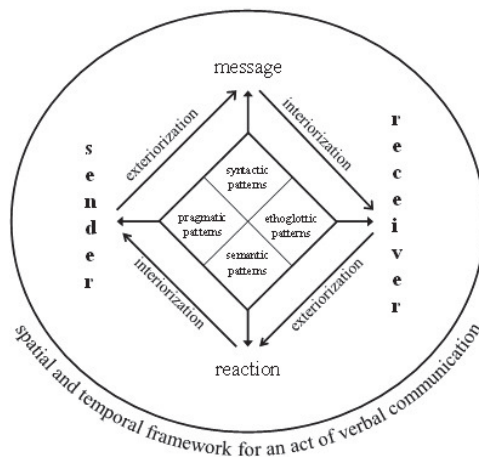

Figure 2.

The study of semiosis and human communication is not restricted only to the synchronic model of communication. Although the methodology of synchronic studies is absolutely necessary, rational, and systematized, it is obvious that human semiotic activity develops in time and space. Numerous phenomena, incomprehensible from a strictly synchronic perspective which treats them as primary data, accepted without any questions about their origin, can be explained only through language evolution, which is the subject of diachronic linguistics. There is no need to despair if someone is not interested in either language evolution or language origin, but it would be just as unjustified to condemn someone who takes particular interest precisely in those two, especially that — as we have already said — no unbridgeable chasm separates synchrony and diachrony. The point is simply to broaden the temporal and special framework of scientific observation. Besides, being interested in something and poorly solving problems are two different things. The latter used to be the bane of diachronic linguistics, particularly because it would underestimate the systemic nature of language, but this weakness can be overcome.

Next, we will propose another model in the attempt to explain the evolution of language in time if it is to keep its systemic quality, i.e. the durability of opposite dependences between various relations in a given synchronic language system. It must be emphasized that we will not discuss particular formal elements of language. They too form a system in which no element is loose but remains in relations to the others. Our task will be to show the primary relations, that is the relations between equivalent relations, since limiting ourselves to secondary relations (to paired objects between which particular relations occur) would easily lead to the system's breakdown into unconnected fragments. When one analyzes relations between an infinite number of objects, it is better to treat these relations as ordered pairs, that is as objects characterized by a specific relation and constituting adequate sets (classes, multitudes). Such sets of ordered pairs allow us to diachronically order the process of language development without losing its systematic quality.

If only these four sets discussed above were to be taken into account in terms of their metalinguistic function (sets which can be just as well regarded as branches of linguistics or four aspects of linguistics theory), it would still be, in our opinion, a poor presentation of the language system, although the general relations which we have described above do occur within the branches. We will briefly enumerate these relations: sign — sender (pragmatics), sign — message (syntactics), sign — society as receiver (ethoglottics),

sign — reaction (semantics). What probably belongs here as well is such relations as: sender — receiver (communication), message — reaction (coordination), sender — message or receiver — reaction (exteriorization), message — receiver or reaction — sender (interiorization). Of course, it would be possible, if required, to come up with double terms for exteriorization and interiorization. The same goes for the relations between the pairs of sets of a higher order: pragmatics — semantics, pragmatics — syntactics, pragmatics — ethoglottics, semantics — syntactics, semantics — ethoglottics, syntactics — ethoglottics, but it is not our task to describe them in more detail.

Since our actual purpose is not to enumerate all possible relations but to achieve an orderly vision of the language system, we need only those pairs which stem directly from the earlier established sets. Our method of reasoning — in accordance with Bühler's theory — will be based on producing abstract definitions of various semiotic concepts out of symbols which represent axiomatic conceptual categories and which at the same time are the simplest factors or features constituting the speech phenomenon. The definitions take a classic form, that is they consist of a type (*genus proximum*) and of a difference (*differentia specifica*). The names of categories are paired and intersect each other. The first pair is subjectivity — intersubjectivity (su—in), the second one is process — effect (pr—ef). Each following pair will lead to the change of *genus*, while the elements used earlier become *differentia*, which makes it more precise. We will present this in a form of a dichotomically ramified tree (a dendrite). The symbols of the regulatory categories which belong to the definitions will be preceded by the names of sets and subsets. I call such a model of presentation a combinatory model of language communication. The part of the tree which we have already discussed looks as follows:
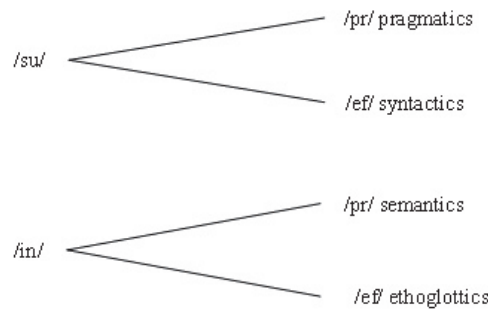

Figure 3.

The next pair of regulatory categories will be: /de/ description and /no/ nomothetics, which is the establishment of rules, laws, and principles. The point is that there are two ways of approaching the tasks assigned by environmental conditions. One of them can be expressed through the question: "What is the purpose of human activity?", and the other one through: "What should be the purpose of activity?". Both points of view carry out very important functions in human life, that is in every aspect of human behaviour and in the activity of entire social groups. Yet they differ so much that the answers to the questions they pose must not be treated equally, much less put into practice. It is because an activity inspired by "What is the purpose?" is grounded in specifics and its performance remains within human capabilities, while attitudes dictated by "What should be the purpose?" tend to be irrational and subjective, they tend to be the expression of dreams, fantasies, delusions, etc. Supporters of the latter attitude are quite numerous and they are usually willing to identify it with the former. The two attitudes are sometimes confused even in academic dissertations, although they ought to be differentiated there as well. The first attitude prevails in science, where it is called 'descriptive science'; its Latin equivalent — description — has already been used in the text and it basically consists in studying the state of a particular phenomenon in a specific time and place.

Scientists seldom engage in establishing a perfect, infallible state, although a priori, deductive and formal sciences (especially formal logic and mathematics) strive for infallible, formalized reasoning and even assume that their formulae apply to every area of study, provided that it can be reduced to the patterns of proper reasoning. The difficulty lies in the extreme generality of these patterns, so that it is hard to apply them to all sciences and to everyday needs, where much less general expressions are required. There have been attempts to bring logic closer to the world of objects, to the reality in which people live, and we may presume that in due time, as it happened in the case of linguistics, applied logic will emerge, oriented to the practical use of logic in various areas of life and aimed to make human reasoning more efficient for the sake of social relations. It seems that such branches as interrogative logic, modal logic (preoccupied with concepts of necessity and possibility), or deontic logic (concerned with obligation) can be regarded as examples of branches similar to applied logic, although they do not yet intend to approach the concepts formulated by ordinary men; they rather adapt common ways of thinking to logicians' requirements. . .

When we use the term "nomothetics", we do not mean the formal and deductive approaches, which lead to infallible reasoning. The idea is to present

certain linguistic relations by imagining them as if, at a given stage, they were as unquestionable, flawless, impeccable, and exceptionless as possible. And this goal is usually achieved through generalizations, systematization, and sometimes simply by improving already-existing approaches or making proposals based on simultaneously investigated phenomena. While the material aspect of certain linguistic branches is undoubtedly to be classified as description, that is to say the portrayal of the actual state, the theories concerned with establishing the best ways to present its formation should rather be called nomothetic, since it is only one scientist's opinion that a specific phenomenon should be presented this way or the other, while another observer could propose a completely different version. Similarly, two subdivisions can be attributed e.g. to pragmatics — /de/ articulation and /no/ phonemics; to syntactics — /de/ syntax and /no/ syntagmatics; to semantics — /de/ designation and /no/ sememics; to ethoglottics — /de/ vocabulary and /no/ morphemics. A careful reader, familiar with linguistic issues, will easily notice that the presupposed dichotomous structure of the tree compels the author of this text to resort to shortcuts, simplifications, and ambiguities, which could be explained perhaps only by a detailed elaboration of the first premises, but the purpose of the text is to give a general idea of our theory, without going into details, as these may still change.

Therefore, the author wishes to offer a rather tentative description — merely a bird's-eye view — of yet another attempt to develop a combinatorial model of communication by means of the fourth pair of regulatory categories. We believe that it would be consistent to end our model's branching with the indication of two directions that each activity takes: one being extravert, 'for show' so to speak — that is /ex/ exposition — and the other — introvert, in other words 'for personal use', which is represented by /pe/ perception. For each of the eight subdivisions described so far, it seems possible to propose two new ones, however some of these suggestions are not to be found in the works of other authors. Some cases are questionable or at least they need further explanation, but we are unable to provide one at the moment. We will present this classification in a form of a complete, dendritic structure, since particular fragments can be grasped only when the whole picture is given (see Figure 4).

This model of verbal activity is the basis from which we can proceed to the presentation of a diachronic model of linguistic communication. Such a model can be developed around the opposition pr—ef or de—no (there are probably other ways of presenting it, but right now we shall content ourselves with these two). To make it more simple, we will describe only the

first model. The second one was based on the same principles, so the reader herself, if interested, can attempt to interpret it to recreate an even more detailed model.
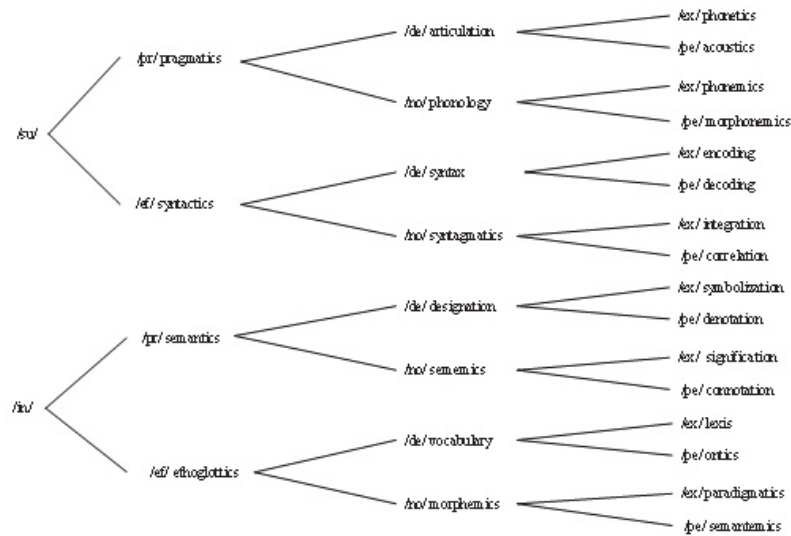

Figure 4. Combinatorial model of the language system

The symbols pr—ef represent the opposition between the categories 'process' and 'effect' (i.e. the result of the process). Combinatorial rules allowed us to determine that the process is represented by four language disciplines: articulation, sememics, designation, and phonology. The same goes for effect; there is syntax, vocabulary, syntagmatics, and morphemics. Both groups of disciplines are represented in our chart (Figure 5) in two configurations (in the corners of the quadrilaterals), which expresses the view that the two groups are opposed to one another. If we treat 'process' as 'transformation of x' and 'effect' as 'x transformed into y', then the sets 'process' and 'effect' constitute an ordered pair: 'x transforms into y'. An important feature of such a pair is that we can attribute symmetry to it, that is, we can accept intuitively yet another ordered pair: 'y transforms into x'. The reservation expressed by the words "intuitively accept" is justifiable when we consider e.g. the sentence "A stone transforms (in a sculptor's hands) into a sculpture", which cannot be symmetrically turned into: "A sculpture transforms into stone". However, a certain generalization seems acceptable,

namely that every result of a transformation may become the object of further transformation and when that happens, the relation x—y actually becomes equivalent to the relation y—x, so it indeed proves symmetrical. Since such symmetrical substitution may repeat itself indefinitely, we can see the mechanism which in the discourse of mechanics (or cybernetics) is called feedback. To put it simply, every process leads to a result and every result can give an impulse for a new process. This symmetry (equivalent to feedback) is represented here by a two-headed arrow pointing in opposite directions.

However, there are twelve arrows of this sort in our chart. At each of the eight terms that altogether form two configurations, three arrowheads are pointed. Since each of these terms' definition consists of three symbols, the second head of every arrow points at a term different from its counterpart only in terms of one symbol. For example: articulation was equipped with symbols: su.pr.de. Out of the three arrows directed at articulation, one leads to designation /in.pr.de/, indicating the opposition 'subjectivity — intersubjectivity' (of the process), the second one leads to syntax /su.ef.de/ and indicates the opposition 'process — effect' (in description); the third one leads to phonology /su.pr.no/, indicating the opposition 'description — nomothetic' (against the background of a subjective process). Similarly, it is possible to formally define the arrangement of each pair indicated by an arrow.
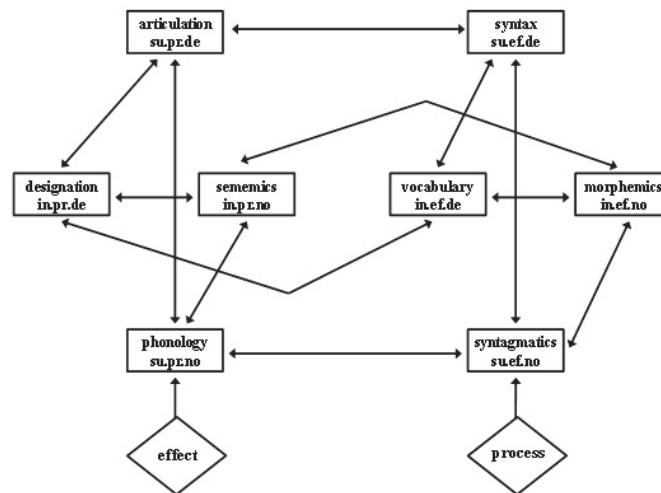

Figure 5. Diachronic model of communication based on the opposition pr—ef

Clearly, a metaphoric reading of every pair's meaning must be more complicated, but the reading of the 'process — effect' pair offered above can serve as an example of how to do it. Due to the length limit of this article, we must abstain from more attempts of this sort to interpret the meaning, but let us just repeat the general conclusion: each of the twelve pairs can be presented as both symmetrical relation and feedback, which means that linguistic communication is not only a movement from process to effect, since such movement is followed by yet another process and effect etc. and it is not limited in time (we should add that it is not a circumferential, but a spiral movement, because every 'turn' occurs in a different time span). Apart from a few dominant movements /su.in, pn.ef, de.no, ex.pe/, we must remember about the internal movements around smaller orbits. Our model includes twelve orbits (while in the opposition de—no in Figure 6we indicate 32 of them). Thus the presented diachrony illustrates great variability and dynamism of linguistic issues, which is exactly what was to be demonstrated. All this activity takes place in a certain time and space, so it ought to be imagined as the movement of celestial bodies recreated in a planetarium. Anybody who cannot see this, simply deforms the vision of language, reduces it to a static model, which is hardly sufficient for a proper understanding of language issues in their entirety.
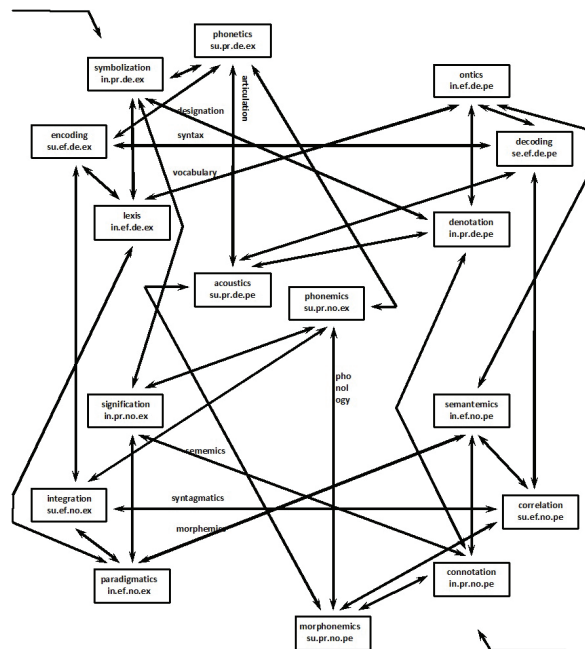

Figure 6. Diachronic model of communication based on the opposition de—no

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