Communication: The paradigms of symmetry, antisymmetry and asymmetry

■ W I N F R I E D   N Ö T H *

ABSTRACT

The paper examines how the process of communication is represented (a) in the etymology of the concept of communication, (b) in everyday metaphors of communication, and (c) in 20th century theories and models of communication. These reflect this paradox in three different scenarios: the paradigms of symmetry, antisymmetry and asymmetry. The dead end into which communication theory is led by the proponents of the latter paradigm is contrasted with some solutions offered by Charles S. Peirce's communication theory.

Keywords: Communication, metaphors of communication, models of communication, symmetry, antisymmetry, conjunction, disjunction, noise, black box, Peirce

THE NOTIONS OF CONJUNCTION AND DISJUNCTION IN THE ROUTES OF THE WORD COMMUNICATION[2]

There in the very routes of the word *communication* reside paradoxes and contradictions. The origin of the word remounts to Latin language, were we find the words *communis* 'common', *communion* 'community' and *communicare* 'to make' or 'to become common'. Regarding the lexical field in the origins of the Latin word *communicare* we may also find the words *mutare* 'to move', 'to change', 'to trade', *muttuus*, 'mutual', 'in return' and *commutare*, 'to change', 'to transform', 'to negotiate', 'to sell'.

All these senses of those words are quite compatible or yet closely related to the meaning of the word *communication*. *Communication* being a 'common doing', that depends on 'participation', 'living together' and 'cohabit'. It has to do with social the interchange and the exchange of information and may lead to changes in the way we think or on knowledge ground.

Nevertheless, *communicare,* in Latin, has also another meaning that goes completely in an opposite direction of such concepts. *Communicare* means not only a 'common doing' or 'to unify', but also the contrary, which is 'to divide' and 'to separate'. The routes to the word communication leads us, then, to the ground of two opposite logics. If meaning a 'common doing' is related to conjunction logic, meaning 'separation' leads us to the ground of disjunction logic:

lat. *Communicare*

'common doing', 'to unify'   'to divide', 'to separate'

~ conjunction logic   ~ disjunction logic

The idea that *communication* is related to *separation* sounds likely under the perspective of the one who communicates. Who communicates is at the same time giving something of his own to another person – ideas, thoughts or feelings. But such a separation between the sender and his ideas, once these last ones are communicated, is only understood in a restrict sense. In one perspective, the sender is never apart from his ideas for the knowledge they imply stays with him. The sender is only separated from his ideas in the sense that after they are communicated he is not the *only one* acknowledging them. From the communicative moment on he *shares* such knowledge with the receiver.

What is underlying the conjunction and disjunction logics in communication is not the opposition between *knowing and not knowing* something, but between *having* or *not having* in common such knowledge. This means it is an opposition between private and shared information. It is interesting to notice, in this context, that the word *private*, in its origin, also carries a sense taking us to disjunction logic. In the original sense *private* holds the idea of non-participation in the community.

It is the specific kind of opposition between conjunction and disjunction logics that establishes the difference between the exchange of words in communication and the exchange of goods in the market business or of endowments in the gift. When communicating, the information goes from one mind to another resulting that ideas multiply themselves in the minds of people. In the market business, on the contrary, the salesman is effectively separated from the object he is selling, whose property is shifted to the new owner exclusively. While

86

commercial disjunction is in fact happening over the salesman in relation to the property of the object in exchange, which goes from the salesman to the buyer, communicated ideas within an sender's message will always remain as his ideas even if they are, after communicative disjunction, also in the mind of the receiver. The communication process results then in a multiplication of sent messages which become, in such way, a common property.

The two opposite logics underlying in communicative processes are also present in the origin of the words *participate* and *share*, that can be taken almost as synonyms to the verb to communicate. In Portuguese, while the prefix 'com-' of the word *compartilhar* indicates respect to a conjunction logic, the radical, -*partilhar*, referring to the idea of *part* and indicating 'separation', belongs to the logic of separation. *Participating* is also related to the idea that to communicate is to *to-be-a-part-of*. In contemporary American English, the word *to share* used in expressions like *I am happy to share these ideas with you* holds the same idea of *communication* as separation of the subject from its knowledge. In Portuguese, the words *participar* and *compartilhar* carry out such sense, which suggests to us that to become common also entails the idea of separating or detaching yourself from something. The elements that build the word *compartilhar* mean 'com' + 'tear apart/ separate'. In German, a close synonym of communication (*Kommunikation*) is *Mitteilung*. In its etymology, such word carries a contradiction in itself for it means literally 'co-separation'.

Still more contradictions reside in the routes of the word *communication* if we consider it in its lexical ground. The radical of the word *common* is also found in the Latin nouns *munus* (with phonetic variants *manus* and *moenus*) and *moenum*. While *moenus* means 'city defense wall', *munus*, being the derivation of the same radical, means 'service', 'tribute' and also 'gift' (cf, port. *remuneração*). Federico Casalegno states the following on such duplicity of meaning found in the word communication:

> Considering the etymology of the word 'communication' we face the ambivalence of the Latin word *cum-moenis*, which means 'with a wall' and *cum-monus*, which means 'with a gift'. That is how "communication" can either interpose obstacles or prefer establishing relationships (Casalegno, 2005, p. 21).

The following diagram summarizes and represents both opposite logics on this lexical field:

Moenia	*Munus/moenus*
'city defense walls'	'gift', 'service', 'duty', 'tribute'
	(cf. port. *remuneração*)
cum-moenia 'com um muro'~	*cum-munus* 'com um presente"
~ obstacles	~ social relotionships
~ disjunction logic	~ conjunction logic

In terms of symmetry, the logics of conjunction and disjunction participate in its model as much as in the model of antisymmetry. The idea of conjunction belongs mainly to the model of symmetry. The invariant, being that which is common to the sender and to the receiver of the message, characterizes symmetry. Nevertheless, every image of a bilateral symmetric picture also represents an element of disjunction as both parts of the image are divided by the symmetry axis that puts aside the right and left sector of the symmetric form.

EVERYDAY METAPHORS FOR COMMUNICATION: MISTAKES AND INSIGHTS

Observing metaphors in everyday language, in which daily communicative interaction is stated, we find mistakes but also interesting insights on the nature of communication. Such metaphors provide us with images for communicational processes that show the same ambivalence of the double logic present in the origins of the verbs *to communicate* and *to share*.

The study of metaphors is one of the central subjects of study in the field of cognitive linguistics. Among the works specifically dedicated to the study of communication metaphors are Reddy (1979), Lakoff & Johnson (1980), Krippendorff (1993, 1994) e Grady (1988).

The oldest metaphor for communication is probably the one of the transportation of a message by a messenger (Krippendorff, 1994). One example of such metaphor is found in the following sentence extracted from a Brazilian internet blog: "I recommend the site […], which *brings* only good news."

Although an explicit messenger is not mentioned in the way the authors of the blog approach the communication between them and their readers, the existence of such intermediator is presupposed in the verb used on the expression *to bring news*. *To bring*, as we know, means literally *to move an object from one place to another* and then hand it to someone.

Well, in fact, such blog only *publishes* good news on the internet; it does not literally brings anything to anyone. The metaphor within the verb *to bring* suggests, then, that news are like objects and that the blog is like a messenger that *transports* news to readers.

Metaphors involving the transportation of messages have clearly been diversified and modernized with the progress of the technologies applied to the means of transportation and technologies of communication. Nowadays, instead of a messenger on foot we have vehicles that bring messages using roads. The messages, since we are in telecommunication times, travel through wires and as electromagnetic waves. All of these means of transportation and of communication provide us with new metaphorical images to talk about everyday communication. And so daily metaphors of communication keep being nurtured by images regarding the transportation of goods.

The transportation scenario entails at least three other sub scenarios:

(1) Messages are like objects,
(2) Objects are moved in containers, and,
(3) There is a path, channel, or conduit enabling transportation.

Contemporary cognitive linguistics has been studying the first and the second ones of these smaller scenarios under the title *metaphors of the container* and the third one of them as *metaphors of the conduit*.

According to such metaphors, messages are moved in containers, having an object as content. Senders *release*, *transmit*, *send* or *put* forward the objects in vehicles trough conduits such as paths, tubes, channels or electric wires to the receivers.

Some examples with metaphors that represent how we communicate like that are:

(i) Processes are *put forward*.
The metaphor (i) suggests that processes are as shipments released trough a non mentioned mean of transportation using the conduit of a path.
(ii) Philosophers follow *the track* of Nietzsche.
According to the metaphor (ii), the conduit through which ideas of the philosopher Nietzsche get to nowadays thinkers are like paths.
(iii) Words *carry a weight*.
(iv) *I was fed* up with what he was saying.
The metaphors (iii) and (iv) represent the message as heavy objects. In (iii), containers are the words themselves and in (iv), it is a type of bag.
(v) Ideas flow.
(vi) Radio broadcasting companies are like channels.

(vii) The *river of words* gets to the sea of the trivial.

(viii) *The leak of confidential documents on the war in Afghanistan.*

On the metaphors in (v) to (viii), messages are like liquids, and the conduit of the transportation are rivers, channels and tubes.

(ix) *I missed* (or *recovered*) the thread of the conversation.

(x) The internet is a *network* of communication, etc.

In the example (ix), the words in the daily conversation develop a thread, which apparently cannot be as an electric wire just yet, since it cannot simply be tied up. The metaphor on the internet network

(x) is also taken from the image of earlier networks, such like those employed by fishermen.

In summary, the metaphor involving transportation of messages by conduits presuppose the one of the message being an object in a container, which can be packages or *vehicles*. It is said, for example, that the language is a vehicle for ideas. We also use *package of ideas*. The most common referred containers are the words, their content are the meaning they *carry within*, the ideas of the sender.

The metaphor of the conduit presupposes, then, a second communication metaphor related to the transmitted message, it is known as the *metaphor of the container*.

When we say, for example, that an article contains a lot of information we are using such metaphor, for it represents the article as a container, in which the information is found. The critics of the idea that words are like containers for meanings have named such image in a derogatory way as bucket theory of meaning ("bucket theory of meaning"; cf. Krippendorff, 1993). Either way, such metaphor is very alive and it is being used to speak of discourses *full* of ideas as much as *empty sentences*. The content itself is a metaphor that presupposes a container in which such content is found.

But let us go back to the metaphor of the conduit: after placing the good in a container, the sender puts it trough a path to the destinatary. Such conduit represents the means or the technical media for communication. When the transportation of words ends, the destinatary receives the good, extracts the content from the container and reads the message.

The mean of communication that functions the closest to this description is the pneumatic mail used in big cities in the XIX century and which is still today for internal communication at banks, hospitals and other institutions (Picture 1):

The conduit in such mean of communication is the system of pneumatic tubes. In order to send a letter the sender has to place it in a capsule (Picture 2), which is literally the container in this scenario. The capsule is closed down and inserted in the tubular system. The sender activates the pneumatic pressure and that is how the container is transported to its destinatary. The receiver extracts the capsule from the tube, opens it, and takes the letter off the container and reads the content.
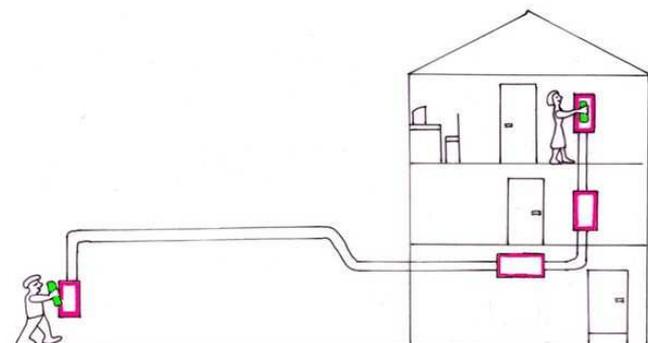
Picture 1 – Pneumatic mail

Picutre 2 – Capsule used in the pneumatic mail
**(http://www.bessa-laguardia.com.br/best_charger.htm).**

Other metaphors of communication are driven according to what the technologies in which the entities being transmitted and the paths to transportation are, such as:

- Hydraulic metaphors, in which the message is a liquid flowing on a river or channel;
- In telephonic metaphors the path to the message is the *conducting wire;*
- Metaphors of communication through radio waves, according to which *information are on air, or in case of problems in communication, we are off-air.*

In spite of the differences among the images of those metaphors of communication, they bring some elements in common, which reveal mistakes and truths about communication processes.

Amongst the things that are true is the usual insight that

- Communication happens between at least two people by means of external signs transmitted from one to another.

- Communication is the transfer of objects coming from a sender which detaches himself from them according the a logic of disjunction and that

- The objects of such transfer are preserved in their essence as they go through the path from their origin to destination.

- The three patterns of symmetry offer us the appropriate models to picture the different metaphorical scenarios of communication.

- The scenario of symmetry (Picture 3) characterizes metaphors that show the receiver as an agent doing the exact same thing as the sender – just in the inverse order. He extracts the same message content from the container according the sender's intentions
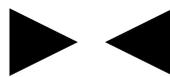
Picure 3 – Symmetry scenario

- The scenario of *antisymmetry* (Picture 4) is a variation of the *symmetry* one in the process of communication. Similarly to the scenario of symmetry it postulates that the content as understood by the receiver is the same that was sent by the sender. Nonetheless this scenario emphasizes the difference between the role of the agents involved in the communicative process. The most emphasized difference is that the sender is an active agent that is able to determine the process while the receiver is influenced by the sender and is limited to passivity:
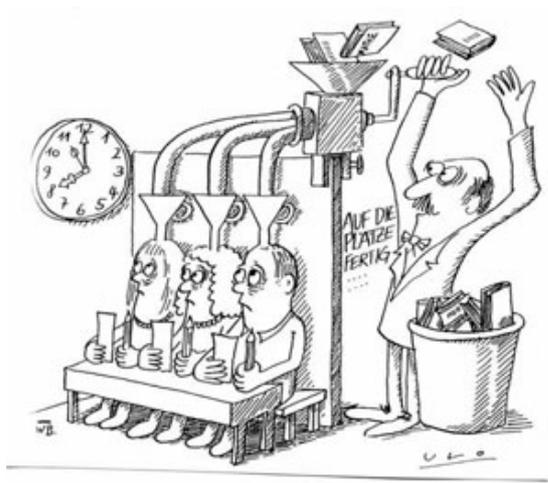
Picture 4 – Antisymmetry scenario

- The scenario of asymmetry (Picture 5) indicates the opposite: Communication is an antagonistic interaction, it is an interchange between fighters defending opposite interests.

Picture 5 – Scenario of asymmetry

A German caricature regarding the model of communicative antisymmetry (Picture 6) is the Nuremberg funnel, which represents the communication happening between teachers and students as being the transmission of knowledge through a funnel to the heads of those last ones:

Picture 6 – Nuremberg's funnel

Nuremberg's funnel is also an example for another metaphor of communication included in the antisymmetric paradigm which is called

- *Metaphor of communication as control*

Such scenario belongs to the antisymmetric paradigm of communication. The scenario is symmetric in the sense it presupposes that the same content goes from the mind of the sender to that of the receivers. It is antisymmetry in the sense that the roles of both sender and receiver are in uneven positions. Such metaphor presents the image of a brutal inequality between the involved in the communicative situation. The powerful sender influences or is even able to control its receivers using the media as manipulative instruments. This is the image that ideological critics attribute to the role of advertising in massive media: the communication by powerful communicators in publicity manipulates consumers resulting that they follow the directions given by advertising people without even thinking. If things were that simple, it would only be a matter of investing in publicity in order to increase profits.

The scenario of the founding *asymmetry* of communication pictures the

- *Metaphor of communication as a war*

Such metaphor is very common in argumentative scenarios, where the speakers *attack* their opponents, and this is found even in the university environment. The expression t*o defend a thesis* (to get a master or doctoral degree) entails the image that academic communication is a military activity (cf. Lakoff & Johnson, 1980, ch. 1-3, for more metaphors in this category).

The metaphor of communication as war clearly follows the communicative logic of disjunction, understanding that who is at war cannot be united.

The metaphor of the conduit demands a process or a narrative plot in the sense of Greimas' semiotic theory. It starts with an initial state of disjunction between the knowledge of the sender and that of the receiver and it ends in a state of conjunction. The scenario of communicative symmetry clearly follows the conjunction logic, but also follows that of the asymmetry as well. The model of communication as control presents the scenario of a forced conjunction.

The scenarios, insights and mistakes found in everyfay metaphors of communication are also found in the theories of communication, and with the same diversity as in the daily metaphors. We need only mention as an example of the relation between the usual and the theoretical the two antipodes of the field of sociology of communication: Jürgen Habermas and Pierre Bourdieu.

If "to the German philosopher communication is considered a synonym of the search for understanding, [and] for Bourdieu it is a synonym of dispute", as Sampaio summarizes (2001, § 4), the ideas of both scholars certainly find correspondence in the metaphors that represent communication as a symmetric event, at one hand, and in the metaphors of communication as war, on the other.

THE CLASSICAL MODEL OF THE THEORY OF COMMUNICATION: THE ANTYSYMMETRY PARADIGM

The most famous, and at the same time notorious, model of communication is the one of Claude Shannon (1916-2001) and Warren Weaver (1894-1978). It represents communication according the scenario of telecommunication (Picture 7).
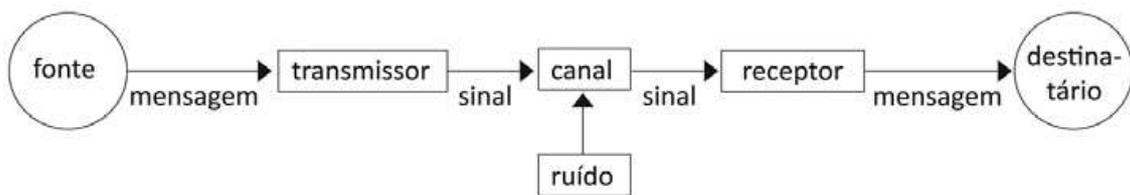
(Source – message- transmitter (Encoder) -signal- channel – noise – signal – receiver – message – destination)

Picture 7– The model of communication according to Shannon and Weaver (1949)

According to the model, the instances of interlocutors are divided in two, respectively. The speaker is the *source* of the *message;* he can communicate with the help of a *transmiter*. The listener is the *destination*; it manages a *receiver*. The locator produces acoustic waves that the transmiter is able to transform it in electrical *signs*. The signs, on is turn, in the form of electric energy pass on by a metallic wire known as channel. The quality of the signs may be decreased by interferences that in the model are understood as *noise*. The *receiver* of the destinatary transforms sent signals in acoustic ones to listeners.

In a version of this model that has been a somehow broadened and made popular in the Wikipedia, the scenario is represented like that (Picture 8):
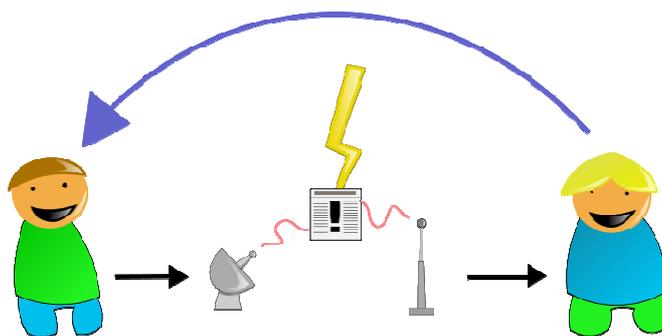
**Picture 8 – Shannon and Weaver's model of communication as found in
http://en.wikipedia.org/wiki/Communication#cite_ref-6**

In such version of the model, the source and the destinatary are represented as two different people. The message is the print paper in the middle. Electromagnetic waves are represented as a curved line and they work as a channel. The transmiter and the receiver are the

instruments between the two people and as for the message it is in the center. The noise is the lightning striking over the message.

The two people, with exception for the hair, seem symmetrical agents. Their open mouth suggest that the first as much as the second are speaking. The channel for transmission is the same for both. And not for that reason the elements of symmetry are merely superficial. In the original Shanon and Weaver scenario (Picture 7) antisymmetry rules. In fact, the messages's receiver stays silent and is limited to the passive role of getting the message the way it was sent. Communication is unidirectional as the arrows from left to right show in reinforcement. The sender is the active agent while the receiver remains passive. Such relationship between agents present the characteristics of an asymmetry.

It is in respect to this aspect that Shannon and Weaver's model was criticized by scholars in the field of communication and that is the reason why such model is many times taken as an antimodel for communication. According to the critique made by S.J. Schmidt, for example, "sender and receiver appear in the model only as formal data, as black boxes, as Input-Output machines or as computers that exchange information among each other" (1996, p. 52) and Sampaio adds: "The very relation among communicational agents, in the complexity and plurality of their interests and conceptions, is not taken into account, as well as there is a neglected debate over the context in which communication is identified" (2001, §2). Communication has not an exclusive direction and it does not correspond to the antisymmetric scenario of controlled communication for the speaker is in fact influenced by the presence of the listener. The listener, in this case, becomes a sort of coauthor of the speaker's message.

One of the first intents to improve Shannon and Weaver's model in the direction of representing an element of symmetry in the process of communication was the introduction of the *feedback* element. Feedback is a telecommunication technology's technical term which describes the procedures where sent signals are retransferred to the back to the sender in order to control the quality of the transmission. The model represented in Picture 8 shows such element in the shape of a curved arrow connecting the speaker to the listener of the message. Represented like that, feedback is not a mechanism belonging to the sender's technology, but it represents the influence of the listener over the speaker, as he gives signs of how he understands or not the first one. Feedback in communication studies is, in fact, a metaphor representing the

listener as having an active role in the communication. Nevertheless, feedback in its literal sense is, in fact, also a scenario of control. Considering the technology used in radio broadcasting it is not the receiver the one to activate the feedback process, but the sender himself. Behind the metaphoric scenario of feedback we do not find an active receiver agent, but the sender himself as the controlling agent checking the efficiency of his own influence over the destinatary.

THE TWO CODE SEMIOTIC MODEL:
THE PARADIGM OF PARTIAL DISJUNCTION

What is left for us to examine is the two other essential elements of communication classical model, the noise and the code. Both of them equally reveal the ambivalence of communication in its bipolarity between the conjunction and disjunction logics.

In a technical sense, *noise* is a defection in the quality of radio broadcasting. It indicates an undesired interference getting in the channel. In a semiotic sense, the noise metaphor introduces a third agent to the communicative process whose objective is to stop the understanding between the speaker and the listener. The noise is the villain in the semiotic of narrative scenario. To those who understand communication under the perspective of the symmetry paradigm, as a communicative interaction in order to share information or to reach a mutual ground, noise is only marked with down connotations. The noise logic is the one of the disjunction and it corresponds to an asymmetry model.

The metaphor for the code originates from army cryptography. For security reasons the sender encodes its message according to the rules of a code shared by him and his destinatary previously informed. The destinatary decodes the received message in the inverse order and translates it according to the rules of the same code into a non-coded text. Seeing it like that, the code scenario reveals the characteristics of the disjunction logic as much as of the conjunction one. The first case as it excludes unwanted destinatary and the second case as it is makes the communication between the involved more secure.

The cryptographic scenario of the code started off as a metaphor for non-ciphered message production and reception processes by Shannon and Weaver (1949, p. 36). The authors understand metaphorically that the transformation of acoustic waves into broadcasted signals in the shape of electromagnetic impulses is like a process of encoding and the inverse activity by

the destinatary decoding the message. The presupposition in such scenario is a founding symmetry between messages sent by a locator and the ones received by a destinatary, which only the noise can disturb. In the core of the original model for the code we find the two opposite logics, the one of conjunction, which characterizes the symmetric and pursued understanding between allies, and the one of disjunction, which characterizes the wanted exclusion of enemies. While the process of including the receiver corresponds to the model of communicative symmetry, the process of its exclusion corresponds to the model of asymmetry.

The model for the code prevailed in the structuralist semiotics from the 60's to the 80's. Among the authors inspired by such element in communication model were Eric Buyssens, Max Bense, Luis Prieto, Roman Jakobson, Jurij Lotman e Umberto Eco (cf. Nöth 1990, 1996, Santaella e Nöth, 2004). Differently from the logic of cryptography, which demanded that the sender and the receiver would use the exact same code, the semiotic in linguistic tradition works the notion of code as a metaphor for linguistic and cultural competence of the message's sender and receiver. In such sense, the codes of speakers and listeners are clearly and forever distinct. Once the concept of code was turn into a metaphor indicating the repertoire of all the signs within the competence of the sender and of the receiver, the model had to take into account fundamental differences between the codes of both senders and receivers.
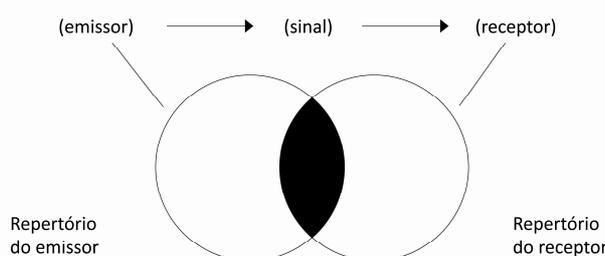

(Sender – signal – receiver)/(Sender's repertoire – Receiver's repertoire)
conjucntion (in black) and prevailing disjunction (in white).
Picture 9 – The codes of the sender and of the receiver: partial

Picture 9 shows a model representing the codes of both sender and receiver as two circles and in between them an intersection area indicated in black. The areas indicated in white represent the repertoire of signs which cannot be used for communication because they are incomprehensible to the listener. It is only the common knowledge of the signs in the intersection area that makes communication between the locator and the listener possible. The

intersection being of a small size even suggests that two quite uneven communicators are at stake. And although the model tries to be politically correct: none of the two communicators is characterized as having a smaller signic repertoire. At this point, the model is clearly influenced by sociolinguistical ideology of the 60's (e.g. Bernstein), which argued that the linguistic codes of both younger generation and their parents and teachers were nothing but simply different. According to sociolinguistic founder Basil Bernstein, a student, for example, does not have a remarkably smaller vocabulary, a restricted code, but he has what is merely *another* code, diverse from that *worked* by the teacher. The fail of a receiver to understand the sender, in such theoretical tradition, is not imputed to a restrict repertoire of signs, but to the fact that both repertoires are different.

Communication, in this circumstances, can only result in partial understanding. The impossibility of connection between the sent message and the received message is merely due to a difference of perspective between both communicators.
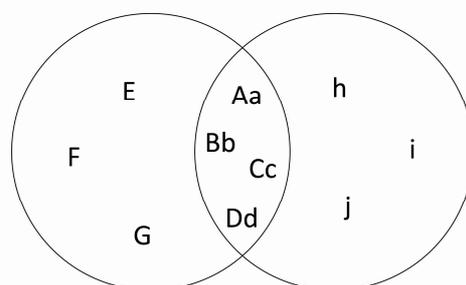
**Picure 10 – The intersection between the codes of the sender
and the one of the receiver: the place enabling communication.**

The Picutre 10, on its turn, represents a more detailed model of the difference of repertoire of a sender and a receiver. It makes visible why perfect mutual understanding is not entirely possible. The model shows that the signs E, F and G of the sender (left) will not be understood by the receiver because they lack in his repertoire. The repertoire of the receiver is not smaller, having the same number of signs. While it lacks E, F, G, it includes h, i and j, and this last ones lack on the repertoire of the sender. Such model for communication, based on code differences, presents another aspect of the insight that communication is connected to the logic of conjunction as much as that of disjunction. The area of conjunction is the intersection between both circles; the disjunction on the understanding between both communicators is

represented by the remaining sections on the right and on the left. They symbolize in which measure communication is not possible.

The symmetry between the sender and the receiver, according to this scenario, is, then, only a partial symmetry. As the two circles include a different repertoire of signs they are asymmetric.

THE POST-STRUCTURALIST SCENARIOS OF COMMUNICATION: THE PARADIGM OF FUNDAMENTAL DISCJUNCTION

The two models of communication that we have considered so far in this article are characteristic of two prevailing paradigms in XXth century theory of communication (cf. Santaella & Nöth, 2004).

The first one of them is the model of the theory of information of the 50's and 60's. The second one is included in the paradigm of the semiotic of codes of the 60's and 70's. The first one is based on the ideal of a communication regulated by the logic of conjunction and symmetry between the sender and the receiver of the messages. The second introduces elements of the logic of disjunction and of asymmetry between the the sender and the receiver in the sense that the code of the first is diverse of that of the last one.

Since the 80's new paradigms have emerged in the horizon of the theories of communication and of interpretation and they have taken the model of partial disjunction between the sender and the receiver to its extreme, to the point that one may say that such paradigm postulates a founding asymmetry (Picutre 5) in communication.

The postmodern paradigm characterizes the most diverse branches of communication and representation theory that have set their basis on much diverse presuppositions. Among them we highlight deconstructivism founded with Derrida's grammatology, the semanalysis of Kristeva, Roland Barthes' post-structuralism, constructivist theory of communication, systems theory of Luhmann and radical constructivism (cf. Sampaio, 2001). Derrida, for example, postulates the impossibility of communication (Chang, 1996, p. 171-220). It is not possible to get to an agreement in relation to the meaning of a text, since its meanings are *unsolvable* and permanently *differed* in the process of interpretation and thus escaping any determination. A mutual agreement between senders and receivers, in this case, is unthinkable.

Niklas Luhmann is equally radical in its theoretical positions over the founding asymmetry of communication. Basing himself in constructivist axioms and in system theory, the author postulates the *impossibility* or at least *the improbability of communication*. Also that communication is a essentially self-referred process, since any mind can only build its own thoughts and is not aware of others think (cf. Nöth, 2001). According to Luhmann (2005, p. 30), communication is impossible because minds are closed cognitive systems. The mind of the sender as much as that of the receiver are like black boxes, they do not allow having reciprocal information on each other thoughts. The receptor cannot see what goes on inside the head of the sender and vice versa; in case one of them had information on each other minds communications itself would become useless and it just wouldn't happen (Luhmann, 1984, p. 156). Such paradox was stated by Wittgenstein in the following terms: "*But* when we say 'How can I tell what he meant being that I only have access to his signs', I say: 'How can he tell what he means when he too has only signs'" (Wittgenstein, 1953, p. 504).

It is not possible, from this point, to go further into the details of the different positions regarding the paradigm of communication based on the logic of disjunction. It is a paradigm that is as much opposed to the scenarios underlying most of the daily metaphors of communication as to the classical paradigm of conjunction. It is only a matter of looking at a Cary Nelson summary of the critiques made by poststructuralists Roland Barthes and Michel Foucautl to the classical communication theory. They try to deconstruct it as a *myth* (Foucault) or as mere *verbal* creation that *does not entails any reality* (Barthes). Such summary of poststructuralist deconstruction of the classical idea of communication based on the logic of conjunction is in the sequence where the author contrasts the intrusive role of noise in communication according to Shannon and Weaver to the poststructuralist model of communication as disjunction:

> According to poststructuralism […], the noise *is* the message. The noise is the sender; the noise is the receiver. The noise is not out of the message and neither is a complement to the truth in the message. Noise is the semiotic process by which messages are build; it is its substance: it is irreducible. Such is the radical outcome of Saussure's argument: there are only differences; not positive terms (Nelson, 1985, p. 9).

The poststructuralist model of communication would be, then, a variation to Shannon and Weaver's model (Picture 7) in which, travelling from the source to the destinatary, the

message would be completely missed, being replaced by noise. Noise, according to this model would not be an external interference messing up the channel of transmission but rather an spontaneous transformation of the message without external interference. Revisiting Picture 7 according to those statements we would get to Picture 11, although it is necessary to keep in mind that poststructuralists have basically opposed themselves to any diagrammatic model of communication.
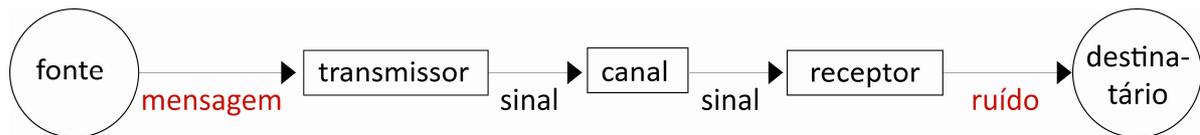
(Source – message – transmitter – signal – channel – signal – receptor – noise – destination according to the postmodern logic of disjunction.)
Picture 11 – The hypothetical model of communication in the paradigm of communication

Communication means, then, the transformation of a message in noise – or to say it in a way that will sound less radical – the message of the sender, according to the paradigm of asymmetry is, by definition, interpreted in an entirely different way by senders, on one side, and by receivers on the other. Now, if it is so, the notion of communication not only completely diverges from historical and daily life on the way we communicate, but it also ends up in the following insoluble paradox: scholars also communicate, but if they communicate a message to their readers and they transform them in noise, how can scholars spread their ideas? And if they cannot have any hopes of spreading their ideas, they as well cannot escape the dilemma brought by the following question: why is that scholars, in spite of that, keep communicating their ideas?

COMMUNICATION THEORY PROVIDED BY PIERCE

Showing the possible ways to solve XXth century theory of communication's paradoxes and dilemmas without repeating the defects of mechanical models, that is a challenge for another article as long as this one. Charles S. Pierce (1839-194)3 provides us with some solutions to the matters and dilemmas posed above (Nöth 2009, 2011, Nöth & Santaella, 2009), but in this final

---

[2] Pierce work will be referred to according to the following notaion: CP indentifies the Collected Papers in the form "CP x.y"; numbers identify the volume followed by reference to the paragraph; the same notation is used for the EP (Essential Pierce) and the MS (manuscripts edited by R. Robin) in the form "x:y", numbers indentify the volume followed by page number.

chapter we can only offer a quick overview. Among the issues Pierce's semiotics has anticipated or even solved we highlight the following: (1) the matter of the black boxes; (2) matter of symmetry, antisymmetry or asymmetry between the sender and the receiver of the message and, (3) the matter of the noise.

(1) *The matter of the black boxes*. Pierce too recognizes that the speakers's mind in a certain sense is like a black box to the listener and vice-versa. Nevertheless, differently from constructivists, he does not conclude that both subjects involved in the dialogue practice are completely independent in making meaning out of the message.

In fact, no listener has access to the mind of the locator. In a dialogue situation what the listener actually understands are mere "fragments of the life of the other" (MS 318: 194, 1907). As to understand the speaker, says Pierce, the listener compares the fragments of the life of the other to the universe of the cognitive horizon itself. That is how he can find out where such fragments can be "inserted or copied again" in the "universal life framework" (MS 318: 194, 1907). Understanding the other is not, thus, impossible and it doesn't need to be taken as the new theorization over what is unreachable. As the listener recognizes the signs of the other in the semiotic horizon itself the access to the mind of the other becomes possible. So, the receptor does not build the meaning of a message once again, but rebuilds it considering a perspective of closeness rather than of a fundamental difference between both cognitive horizons.

Another reason why communicating minds cannot be considered mutually closed systems according to Pierce's cognition theory is the principle of unity of thought and expression (CP 1.349, 1903). It is not true that thoughts stay forever hidden in the brain's black box. They are living signs and they reveal themselves in the expressions of those who have such thoughts. The interpreter of the message does not interpret only its words, but a myriad of verbal and non-verbal signs that provide him with more information on the thoughts of the speaker than just the words.

(2) *The matter of symmetry*. Pierce's theory of communication recognizes the conjunction as much as the disjunction among the involved in a dialogue. Disjunction is a daily life reality resulting in the incompleteness of signs. All of the signs are vague and generic, especially verbal signs (cf. Nöth & Santaella, 2009). So the speaker, in verbal communication, can never have expectations of representing what he wants with perfection or absolute

adequacy. The more complex the issue the more vague the words have to be (cf. CP 5.447, 1905). But such founding vagueness of signs is not despicable; it opens up creative room for interpretation, which allows signs to grow on interpretations.

And not because of that the result of communication is a free game of interpretation as deconstructivists entail. In spite of the impossibility of a perfect symmetry between sender and receiver of the message, the ideal of symmetry is not absent of the dialogue between the speaker and the listener. Such ideal makes itself present as a normative principle of communication. Pierce names it "co-mind" [commind or commen] (EP 2: 478, 1906). The ideal of symmetry is, then, a normative one performing an actual influence in communication. But being an ideal, its goal can never be achieved in daily practice. In this sense, communication remains forever shattered.

(3) *The matter of the noise*. As the noise interferes in the dialogue between locator and listener, it is a third agent between sender and receiver within the communication process. But it has an ambiguous role in the interpretation of the XXth century theory of communication. The ones that defend the communicative symmetry paradigms understand the noise as intrusive and its effects being then destructive in relation to the message. In their paradigms of a fundamental asymmetry of communication, poststructuralists take it as the natural result of a natural transformation of the message during its way from the author (or speaker) to the reader (or listener).

In Pierce's semiotic a third agent is considered between the locator and the listener, such agent is not the noise but the sign; Words, topics and meanings of the message, that being signs take part in and at the same time determine the dialogue between sender and receiver as active agents; noise is not mere instrument of two independent communicative agents (cf. Nöth, 2009). What the sign represents is not a mere construction of their users. Just like other signs, the speaker's message is also determined by the objects that it represents, the grammar, which determines whether the discourse is correct or incorrect and the logic, that determines if the message is true or false, are characteristics of signs that are the communicating agents cannot determine. Reality, represented by the message, is involved in the communication trough the presence of signs and its objects. These are some of the factors by which we should consider the message as a third agent in the communicative process. Differently from traditional models of

communication, that show only a bilateral symmetry, the model resulting from such a perspective on communication (Picture 12) is three times bilaterally symmetric and this reveals its triadic nature. The model can also be understood as a picture of triple radial symmetry. The rotation of the picture 120o. and 240o. in relation to any axis, passing by the geometric center of the figure ends up in the same geometrical configuration.

Mensagem (ou signo)

Locutor   Ouvinte

(Meesaage (or sign) – Speaker – Listener)
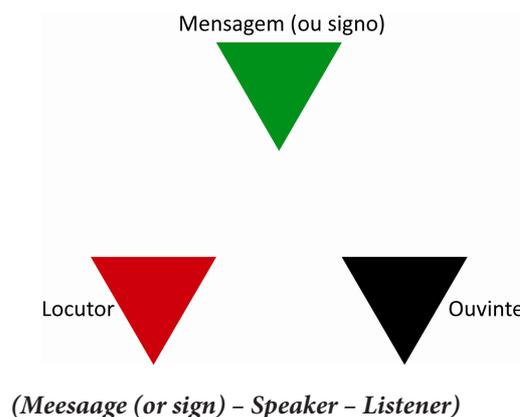
Picture 12 –The three independent agents in the communicative process, according to Pierce.

According to Ransdell interpretation of Pierce's theory of semiose, the sign would not only be an agent between a speaker and a listener; It would be the main agent:

> What creates the interpretant is not a mind which is interpreting the representation, but the representation itself. Semiosis, in Pierce's definition is the action of representing the sign generating his own interpretant. Semiosis is not a metal act of interpretation (Ransdell, 1989, p. 9).

In this context Ransdell does not approaches communication specifically, but everything that is valid for any process of semiosis is also valid *a fortiori* for communication: *What creates the interpretant* and also the *representation* are clearly the communicated messages. And the interpretant, which should not be confused with the interpreter, is the interpretation of the message or simply the received message in the classical model of communication. Ransdell thesis that only the sign, meaning, the message (not the speaker!) generates the interpretation itself is certainly radical and maybe its too radical in the sense it suggests the exclusion of speaker and listeners of the process of communication. Although they are not independent agents they have their own autonomy. As the man himself is a sign, as

Pierce states (CP 5.314, 1868), they take part in the communicative dialogue with semiotic autonomy, which characterizes any sign (cf. Nöth, 2009).

Another aspect of the Peircian axiom saying that signs are independent agents in communication between senders and receivers has been highlighted by Vincent Colaprieto in the context that investigates the triadic structure of conversation. Without establishing the same autonomy to the sign as Ransdell in communicative process the author underlines:

> Even if there are only two people taking part on the conversation it is not a dyadic matter as it is irreducibly triadic. In fact, the topic of conversation is one of the involved in the interchange. If the topic is a result of an agreement by the other involved, the attention and the respect it deserves is commonly as important as it would be if locators would give attention to each other and the respect each other deserves. The theme has a tendency to state himself by action of its representant or witnesses. But to say that they state themselves indicates that they, in one way or another and to a certain extent, have their own agency. As much as objects are opposed to each other (at least they have the ability to oppose themselves in respect to our statements about them), themes have their way of opposing themselves in relation to distortions or misguided representations (Colapietro, 2010).

The conclusion reconnects with the insights on the fragmentary aspect of communication that we have discussed above. If communication has always had, to a certain extent, a fragmentary aspect, such defection should also be characteristic of the communication of the present work. The overview presented here on the theories of communication had to be necessarily generic and, thus, incomplete. But if this text was able to be truthful to the semiotic principles presented in it we can expect at least to have it offering a guideline to surpass partially the inevitable incompleteness of its words.

REFERENCES

Casalegno, Federico. (2005). Living memory: Une approche écologique de la mémoire em réseau. In F. Casalegno, ed. *Mémoire quotidienne, Communautés et communicationà l'ère des réseaux* . Sainte Foy: Presses de l'Université Laval.

Chang, Briankle G. (1996). *Deconstructing Communication*. Minneapolis, MN: University of Minnesota Press.

Colapietro, Vincent. (2010). Conclusive and open conversations. Manuscrito de uma palestra na Faculdade Cásper Líbero, São Paulo, September 3.

Grady, Joe. 1988). The "conduit metaphor" revisited: A reassessment of metaphors for communication. In: J.-P. KOENIG (ed.). *Discourse and Cognition: Bridging the Gap*. Stanford, CA: CSLI Publications.

Krippendorff, Klaus. (1993). Major metaphors of communication and some constructivist reflections on their use. *Cybernetics & Human Knowing* 2.1: 3-25.

_____ . (1994). Der verschwundene Bote: Metaphern und Modelle der Kommunikation. In: Klaus Merten, S.J. Schmidt & S. Weischenberg (eds.). *Die Wirklichkeit der Medien*. Opladen: Westdeutscher Verlag.

Lakoff, George & Mark, Johnson. (1980). *Metaphors We Live By*. Chicago & London: University of Chicago Press.

Luhmann, Niklas. (1984). *Soziale Systeme: Grundriss einer allgemeinen Theorie*. Frankfurt/Main: Suhrkamp.

_____ . (2005). *A realidade dos meios de comunicação*. Trad. Ciro Marcondes Filho. São Paulo: Paulus.

Nelson, Cary. (1985). Poststructuralism and communication. *Journal of Communication Inquiry*, 1985.

Nöth, Winfried. (1990). *Handbook of Semiotics*. Bloomington, IL: Indiana University Press.

_____ . (1996). *A semiótica no século XX*. São Paulo: Annablume.

_____ . (2001). Auto-referência na teoria dos sistemas e na semiótica. *Revista de Comunicação e Linguagens* [Lisboa] 29: 13-28.

_____ . (2009). On the instrumentality and semiotic agency of signs, tools, and intelligent machines. *Cybernetics & Human Knowing,* 16.3-4: 11-36.

_____ . (2011). Semiotic foundations of pragmatics. In *Foundations of Pragmatics*. W. Bublitz & N. Norrick (eds.). Berlin: de Gruyter, pp. 167-202.

_____ . & Santaella, Lucia. ([2007] 2009). Die Relevanz der peirceschen Semiotik des Vagen für die Theorie der Kommunikation. In *Die (Un)möglichkeit der Kommunikation*, S. J. Schmidt (ed.), 73-96. Frankfurt/Main: Peter Lang (=Special Issue *SPIEL:* Siegener Periodicum zur Internationalen Empirischen Literaturwissenschaft 26.1.

Peirce, Charles Sanders. [CP](1931-58). *Collected Papers*, vols. 1-6, (ed.). Charles Hartshorne and Paul Weiss; vols. 7-8, ed. Arthur W. Burks. Cambridge, MA: Harvard University Press.

_____ . [MS](1979). *The Charles S. Peirce Papers,* 30 reels - 1963-66, 3rd microfilm edition. Cambridge, MA: The Houghton Library, Harvard University, Microreproduction Service.

_____ . [EP](1988). *The Essential Peirce. Selected Philosophical Writings, vol. 2,* 1893-1913, ed. by the Peirce Edition Project. Bloomington. Indiana University Press.

Ransdell, Joseph. (1989). Is Peirce a phenomenologist? French translation by André DeTienne as "Peirce est-il un phénoménologue?" in Ètudes Phénoménologiques, 9-10, pp. 51-75. This English-language version is the original and has never been published. [Online] Retrieved May, 2010, From: http://www.cspeirce.com/menu/library/aboutcsp/ransdell/phenom.htm

Reddy, Michael. (1979). The conduit metaphor: A case of frame conflict in our language about language. In Andrew Ortony (ed.). *Metaphor and Thought*. Cambridge: Cambridge University Press.

Sampaio, Inês e Sílvia, Vitorino. Conceitos e modelos da comunicação. *Ciberlegenda:* Revista do Programa de Pós-graduação em Comunicação da Universidade Federal Fluminense 5, 2001. Retrieved Aug, 2010, From: http://www.uff.br/mestcii/ines1.htm

Santaella, Lucia & Winfried, Nöth. (2004). *Comunicação e semiótica*. São Paulo: Hacker.

Schmidt, Siegfried J. (1996). Kognitive Autonomie und soziale Orientierung: Konstruktivistische Bemerkungen zum Zusammenhang von Kognition, Kommunikation*, Medien und Kultur*. 2. ed. Frankfurt/Main: Suhrkamp.

Shannon, Claude E. & Warren, Weaver. (1949). *The Mathematical Theory of Communication*. Urbana, IL: University of Illinois Press.

Wittgenstein, Ludwig. (1953). *Philosophische Untersuchungen – Philosophical Investigations*. Oxford: Blackwell.

_____