Abstract

Communication appeared with handwriting and developed from hieroglyphics to the alphabet, from pictorial descriptions to the printing press. Verbal communication and dialogue developed in Greek antiquity. The philosophical concepts of Socrates were transmitted to present time by his followers. Similarly the messages of prophets have been transmitted to us by their companions. Transmission in periods of verbal communication does not make us certain of the authenticity of the works developed by the initiators. With the discovery of the communication pattern transmission becomes a key factor in spreading knowledge, in the influence of literature on the masses and in the extension of education. Communication becomes an element of the dissemination of culture and science. Communication will expand the universal nature of science and culture. The discoveries of the 20th century, radio, television, cable telephony and the satellite have continually revolutionized communication systems.

Keywords. Communication, transmission, education, culture, science

Introduction. Concepts and Specific Guidelines

Definition

Communication (from the Latin comunis; common) means: trying to establish a community with someone; to convey common information, ideas and attitudes, associating, appertaining or establishing links between them. Wilbur Schram understands communication as the process of establishing a communion, or a nature of perceptions, ideas or concepts between the transmitter and the receiver of the message through a communication channel (Schram W., 1995).

It is a basic concept in Sociology and Social Psychology, where it is used with different meanings:

a) The process by which individuals observe stimulations and react in different ways and to varying degrees according their perception;

b) The mechanism by which human relations exist and develop;

c) All symbols of thinking, along with the means of their preservation and propagation;

d) Social communication, defined either as, (i) a general expression referring to all forms of social relationships, in which a conscious participation of individuals and groups exists, or (ii) interpersonal relations following a communion or fusion of consciousness (Interpersonal Communication).

We will operate with this term being understood as a process in which a transmitter and source of communication (T), conveys a message (M) or a repertoire of messages (Rm) that contain communicational content, via a channel (C), towards the receiver, also known as the consignee, or public audience (the one who receives the message) (R). We will deal with each of these separately during the content of this paper.

A general scheme, independently discovered by two different researchers, better explains the concept of communication and its elements:
The Meyer- Eppler Scheme

S - Sender (source of information according to Shannon)
N - Noise (considered as generator, source)
C - Coding (transmitting, which operates on the message in some way to produce a signal suitable for transmission over the channel)
c - Channel ("the intermediate used to transmit the signal")
D - Decoding (receiver, performs the inverse operation of that done by the transmitter)
R – Receiver

The message, understood as a set of signs sent by the transmitter, is sent via a channel of communication, which represents the support material of the communication.

Communication experienced a truly revolutionary leap in the second half of the twentieth century. Professor Claude Allègre, a Geophysicist, who lectures at the University of Paris VII, and at the Massachusetts Institute of Technology-USA (1993) writes: "Communication is the multiplier of science, it is the machine that creates innovation and the medium of understanding". The most modern technical microelectronic tools, which record, store and process information electronically, have made communication a key factor in all aspects of science, technology, economy and culture. Knowledge, thinking and communication have become indissoluble.

Media of Communications - radio, TV, cinema, theatre, media, discs, tapes, etc. create the classic supports for human communication, in which information is encoded to a higher or lesser degree, using different levels of specialized techniques. The significance attributed to the message to the receptors is called decoding. The response includes all the reactions of the receptor after receiving the message. The retransmission may be direct or indirect (intermediate). During the process of transmission or retransmission of the message (feedback), one or more elements that influence the phenomena of learning or re-learning can occur. This is specific to the receiver and the receiver's subsequent actions. Therefore, communication is transformed into participation, the aim of all communication, is to create participatory communication in which an individual or an institution participates in the life experience of another individual or institution (Dessart F., 1992).

The characteristics and classification of communication

Communication between two people is complete when they understand the two signals in the same way, using the same decoding system.

Many people who communicate create a chain of communication or a communication network.

Any communication can flow directly (naturally) between Sender “S” and Receiver “R” or indirectly (artificially) by means of media communications.

Communication represents a field of interdependencies. All the factors that contribute to its realization can influence the communicative field that is created.

Communication is a complex process whose factors mutually inter-condition each other. Three models of communication can be envisaged: linear (communication is unidirectional); interactional (bi-directional communication) and transactional
(the transmitter and receiver of the message play permutable, alternating roles throughout the duration of the communication).

Communication may refer to:
(a) Direct or indirect communication;
(b) Unilateral or reciprocal communication;
(c) Private or public communication.

Combining the first three types of communication can create four other forms of communication, which are the most commonly encountered ones.
1) Direct Reciprocal (face-to-face);
2) Indirect Reciprocal or interactive exchange (via the radio, phone);
3) Direct Unilateral (i.e in a conference);
4) Indirect Unilateral (through the disc, film, letters).

Depending on the different types of human activities, J.L. Aranguren (1967) specifies communication as: ordinary (common); scientific and/or technical; related to the news (information); advertising, educational, aesthetic (art); social, economic, political, religious, etc.

A very special form of communication is empathic communication (from the Greek word patheia, pathos; what you feel). H. Pieron (1968) calls it a species of affective communication whereby someone identifies with someone else, their emotions and feelings. N. Sillamy (1996) refers to it as—“A phenomenon of psychic resonance, of affective communication with each other”.

The meaning of Communication; Early Studies

Communication means the transmission of ideas, information, attitudes, and feelings through a communication channel (communicational), it is therefore intermediary. In 1962, Raymond Williams proposed in his research the term “Communications” without separating it from the phenomenon of communication (direct, non-intermediary transmission). Paul Foulquie (1978) understands communication as a set of processes (periodical press, advertisements, cinema, radio, TV) which disseminates information to the wider public, shaping their opinion and determining some of their behaviors.

Several similar or different communication channels that transmit various communications create a chain of communication or a communicational network.

Communication - Mass Communication

Mass communication is a public communication addressed to several individuals. According to Gina Stoiciu (1977), mass communication represents a special type of human communication (with particular characteristics), which may be studied by analyzing the channels, the type of content transmitted, the specific language, as well as its different ways of reception.

This is made possible by technical means of mass communication (mass-media), namely media, radio and television. Mass communication is a process which is done through the media using technical means. Technology and media enable and facilitate the performance of mass communication. The term media denotes any way in which a message is conveyed and supported. Mass media (media of the masses) refers to the common group of supporting elements which constitute the means of the message’s expression to the public (e.g., radio, TV, cinema, press, posters). Mass media, as a support for communication, is classified as:

1. Autonomous means of technical electronic-media, using the TV screen in order to view the data and images. It works by connecting a device (video camera, video cassette recorder), to a network of cables or antenna (regular or satellite), it also can be operated by connecting to a computer as a console for electronic games;
2. Communication media, which allows the communication of information (the telegram, telephone, radio, TV, telex, fax, etc.);
3. Diffusion media, using techniques for transmitting the message (e.g., radio waves, the press, TV, etc.). New media includes the cable (optical or coaxial) and the satellite, allowing the multiplication or the transposition of messages (direct, intercontinental) or the reception of multiple channels (Miquel, 1990).

George Friedmann (1971) defines communication as an assembly of inseparable cultural phenomena. Different methods of communication used in civilizations include: the press (daily and weekly), illustrated magazines, radio broadcasting, cinema, television, disks, advertising, this list is far from exhaustive.

### Information

**Information** (from the Latin *informatio*; to give shape or form, to make known, and actualize) is defined as:

- data overview, news, indices, etc., which modifies the internal state of the system receiver, prompting a response to a particular object commonly referred to as the source;
- resources of skills, that change mindsets;
- mental requirements, the basic form of mental nutrition, with important functions in the development of knowledge and human affirmation as a social being;
- the carrying out of all activities; institutions and the effects they have on their object and receptor; the transmission, choice and presentation of the facts considered as significant for life in society (Ilombi, 1984);
- A raw product or semi-finished one which is far from rare, and is generally abundant (Simon, 1977);
- Measure of what is new or unpredictable in the message (Moles, 1976).

Various theorists highlight the power of information as:

- To be informed means knowing not only what is going on, but also to know the reasons and methods of decision making...
- A lack of information, is thereby a lack of participation in the decision making process and organizational system, otherwise defined as alienation;
- Information means power and represents an essential tool of power;
- Information is a powerful catalyst for progress ...It is necessary for international and intergovernmental cooperation between developed states and less developed ones, so that positive information and communication contributes to the strengthening of peace and international understanding and to the promotion of human rights (Dessart, 1992);
- The man when is well informed is a citizen, and he who is ill-informed is a slave;
- The nation that controls the domain of processing information will possess the keys to world leadership in the 21st century (Robert E. Cahn, the Agency for Advanced Research Projects in the Field of Defense USA);
- Being the most communicational part of reality, it can be easily passed from one entity to another, making it possible for different entities to bring the same information and similar entities to bring different information. Although it is inextricably linked to the substance and the energy that it generates and transports, information represents another aspect of the matter, which has other laws of transformation and preservation (Restian, 1980).

### Historical Overview of information and communication among nations

Since 1949, the Universal Declaration of Human Rights has proclaimed the human right to information and communication (article 19). However, today the dissemination of information is largely one-way, going from a few centers located mostly in developed countries, which have established a true monopoly upon information and news. This information reflects the concerns, aspirations and cultural models of the societies from which they are broadcasted.

In the 1980’s and 1990’s the society of information used to be mentioned a lot; namely a new global order in the field of information and communication or a global information society, a new society of holonic informatics (from the Greek words *holos* = the whole and *on* = part; organic harmony between the whole and parts). In 1972 the Institute for the Informational Society was created in Japan. The Japanese strategic objectives for the year 2000 which the European Community approved, included the following program profiles:

- ESPRIT (since 1984)-the coordination and promotion of research in the field of information technology;
- IMPACT - The stimulation of demand for electronic information services;
- MEDIA - Encouraging the establishment of a cross-border audiovisual network;
- TEDIS - Promoting the exchange of the informative data, to which the following national programs were added:
  - RENAC - National network of computers;
  - RENAC/RENOD - Regional network for RENAC;
  - CEDINF - Research and development in computer science;

In March 1994, at Buenos Aires, delegates at the first World Conference on the development of the International Union of Telecommunication agreed on the realization of a universal service for all members of society on a global scale and the creation of the global information infrastructure. At a meeting on the island of Corfu (Greece) 24-25 June 1994, a group of experts led by M. Bangemann, the European Union commissioner for telecommunications and information technology, presented a paper to the European Council entitled "Europe and the Global Society of Information, also called “The Bangemann Report”.

The Bangemann Report
This report contains the following sections:
I. Informational society - new ways to work and live together;
II. A revolution (industrial) imposed by the market;
III. Implementation of the program (to be worked out);
IV. Technological Bases of Informational Society - a task for the private sector.

In 1995 “The Rome Club” studied “Society and Multimedia”, during a meeting of the seven industrialized countries in Brussels (23-25 February 1995). A program to create so-called highways of information, as a support of the informational society, was discussed.

Information – A Fundamental Category of Existence
Steinbach (1995) believes in a fundamental category of existence, called information. The genes that transmit heredity, bird song, a painting by Picasso, a letter, a photograph, a film, music of all kinds (such as, the percussion of the timpani and Beethoven’s Ninth Symphony), books ranging from the phone book to the Bible or the Quran, laws and regulations, are all information. According to B. Wiener (2006), "Information is information; it is neither matter nor energy. Material which does not take this into account, is nowadays undisputed". In Steinbuch’s view, in the future development of science, the concept of information will have the same fundamental importance, as the concepts of matter and energy have had in the past. Information will also be the central concept of future science: "Information is the beginning and the foundation of society".

The Chronology of Some Discoveries
1920-1930: R.A. Fisher defines information as a classical notion of mathematical statistics; 1932-1948: the electronic engineer and mathematician C.E. Shannon published his research "A Mathematical Theory of Communication", which defines information entropy (the level of truth) as a unit of measurement which gauges uncertainty in news media;
1948: Norbert Wiener published "The Cybernetics or the Science of Order and the Communication of Beings and Machines";
1950: the first symposium on the mathematic theory of information was organized in London
1953: - The Transaction of the Theory of Information was written in an edition of IRE journal;
- By the year 2015, South Korea will have spent 60 billion dollars for the building of a powerful data bank, aimed at supporting and promoting Korean firms in the international market of informatics and telecommunications.
The characteristics and classification of information

As an inexhaustible resource, information may be local, but also universal; confined and expandable, and can function as a substitute for capital, human resources and raw materials. It is transported at different speeds. The concept of information tends to become a fundamental concept of science and contemporary civilization. Information has always stood at the foundation of human activity and is part of the common heritage of all mankind (Telespan 1995).

Vernon Rutham from the University of Minnesota (USA) distinguishes between:

- Direct information communicated between two or more interlocutors who stand face to face;
- Indirect information, communicated through the mass-media or contained in entities (new varieties of seeds; atoms, molecules, etc.), machines and other modern equipment.

Mahele Ilombi (1984) in his doctoral dissertation submitted to the Department of Social Communication of the Catholic University of Louvaine, points out the fact that information should be an inalienable right and a fundamental duty. Blocking access to information and its censorship are daily practices. M. Ilombi believes that there are three categories of factors that produce “blocked information”: political and human factors (entry level); news agencies, newspapers and the spoken media (treatment level); and once again, political policies and human factors (output level of information).

It is noted that the latest information, found in new products and images of the human mind, can all be considered direct information, if its transmission by the broadcaster is not mediated. Moreover, in 1966 the French Academy defined informatics as – the science of rational treatment via automatic informational machines, considered as a support of knowledge and communication in the technical, economic and social domains.

At present specialists estimate that about 45% of all French human resources exercise their activity in the information sectors, and about 2000 data banks are established across the globe. The world has entered a new era of information and of informatics. The global society of information is taking shape right in front of our eyes.

National strategy sample for informational society

A strategy to build a society of information should have the following elements: Layout- framework of the strategy domain; General status and major trends of development of the ICT sector (Information and Communication Technology); Basic concepts education; Continuous Learning; Principal problems of the society; Requirements concerning the computerization of the society; Risks of dithering; Characterization of the status of the development of the ICT sector; Target status for the country; Structure of the nucleus of informational coherence; Territorial projection of the nucleus of informational coherence; Development strategy of the ICT sector at country level; Contribution of the national industry in the development of ICT domain and automation; Concept of the national program for a given period; A national program in the ICT field; A special focus on the information policy on financial movements; Cost-benefit analysis; Immediate measures for the implementation of the program.

Sociology of Communication as a Science

The Sociology of Communication and Sociology of Mass Communications are branches at the borderline of Sociology and Informatics, along with the Sociology of Information, Informational Aesthetics and Informational Psychology etc. The Sociology of Communication studies the social implications of the communication act (or process), whereas the Sociology of Communications deals with the study of communication channels and their influence on human society. Specialist literature has various definitions for the object of this branch of Sociology. The Sociology of Mass Communications defines the relationship between a communicational channel and the various aspects of a mass society: mass production, mass consumption and mass reception. For John Friedmann the four areas of study are:

1. The relationship with global society;
2. The effects attributed to mass communications: manipulation, crowd disclosure;
3. The content and importance of the communicated message;
4. Attitudes, roles, needs and their functions.
Traian Herseni (1981) defines a Sociology of Communications and Information (mail, telegraph, telephone, radio) by putting an emphasis on: the means of mass communication (press, cinema, radio and TV); the related institutions and organizations; the socio-cultural effects according to social categories; the degree of interest and receptivity, through which it passes unnoticed to the different branches of Sociology (Sociology of Mass Culture, Sociology of Information, Sociology of Propaganda, etc.).

Conclusions

Mass communication, like all communication is the transfer of information, by means of a message, using a communication channel. It facilitates the circulation of the information in society, as well as its blocking, distortion, and standardization. Mass communication can be included among the most powerful and effective drugs, whose influence is studied by sociologists of advertising. Mass communication therefore functions as an agent that reinforces existing values and attitudes (Friedman G., 1971). The Dictionary of Sociology, points out that in the case of mass communication, the same transmitter has the possibility of transmitting the same message to a larger number of potential receptors (Zamfir & Vlăsceanu, 1993).

Money and trade; the printing press; photography and film; the mechanical, electromagnetic and photoelectric recording of the sound and image; the telephone, radio television and computers - are all developments of information technology without which the society of today would be unimaginable. Therefore, language and speech, essentially represent a tool for the circulation of information. Communication, at any level, human, animal or even the informational aspects within the vegetable, mineral, and the atomic sphere of elementary particles, is an exchange of information. Information has now become a power factor. Traditional society only recognized the ownership of assets and the sources of energy as being equal to power. Today, information has been added to this list. The concentration of the means of information is a process with political consequences.

Wurtz, (1990) states that the fundamental reality of the theory of information is the possibility of a choice, chosen from an infinite number of possible variations that leads to the required goal.

Communication principles serve as an essential medium for educational process. The one who holds this essential tool has the power over the future.

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