Departmental Papers (ASC)   Annenberg School for Communication

1-18-1990

Models and Metaphors of Communication

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Disciplines
Communication | Social and Behavioral Sciences

Comments
Radio program for an educational series "Media and Communication, Construction of Realities," translated and aired by Hessischer Rundfunk, Frankfurt, Germany, 1990.

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Revised 1990.01.18

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Contents

Communication broadly delineated

Communication consists of a complex web of phenomena whose boundary is hard to draw and whose nature difficult to grasp. Yet, its growing significance fuels the work of many, from engineers who design sophisticated devices in its service to poets who create discourses that resonate with their own and others' thinking, and from therapists who empower their clients thought talk to social scientists who try to understand this all and communicate their understanding to a public.

Perhaps the broadest definition of "communication is the use of language by cognitively autonomous beings in the practice of living with each other in a medium." This definition may make sense only toward the end of this paper. Let me therefore start with fewer unfamiliar terms and propose "communication is any process of transmitting pattern from one system to another or between the parts of a system, thereby bridging different spaces, different times and different forms" (Krippendorff 1969). So, a book mediates between its author and its readers who may be a thousand years apart. Telephone conversation is based on a technology that reproduces sound almost instantaneously at a location perhaps a thousand miles away. Mail can carry from a sender to a receiver all kinds of written messages from expressions of love that influence if not create social relationships to purchase orders that unfold an orderly chain of events ending in the movement of goods, payment and perhaps further orders, thus successively embedding patterns, transforms of patterns, in different material forms or media. In the same manner, priests bring the voice of god closer to believers, journalists transform what they see as worth knowing into news to citizens, scientists publish theories and research findings, etc.

Communication does not need to result in reproduction, agreement, consensus, or success. It can invite misunderstanding, opposition, complementary reality constructions, and the evolution of new linguistic forms. The critical requirement for communication to have occurred is that some pattern can not be explained without references to some other pattern and that there exists some medium that accounts for the process of transformation of one into the other. Communication thus conceived also is not limited to the social world. Genetic material, DNA, is transfered from one generation of organisms to the next, carrying the message of species forward in time. Radio telescopes transform images from many light years ago into our current visual field. Computers can be made to communicate with each other solving problems humans consider significant.

The seeming universality of communication, our ability to look at so many different phenomena--perhaps even the whole history of human kind--from the perspective of communication, raises fundamental questions of how we could understand communication when we cannot talk about communication without presupposing it, when its evidence is so much part of our own

humanness. Let me seek to answer some of these questions by focussing here on models and metaphors that are widely used as vehicles for this understanding for it is arguably through the invention and play with conceptual devices that we can comprehend and create what is being modelled or patterned.

Models and metaphors

Regarding what a model can do for us, consider a complex economy. Our ability to experiment with it and experience the consequences of this experimentation always is limited to what its participants, consumers, business persons, bankers, producers, politicians, economists, etc., would be willing to accept, but a computer model of such an economy not only may account for many more data than anyone is able to grasp but also can be played with more freely and without disturbing the whole economy and harming its participants. On a computer model, one can experiment with seemingly outrageous economic policies, one can introduce stresses to find points of breakdown or revolution, one can study changes many years ahead of its actual occurrences, one can even invent a reality and test its viability, etc. Models enable us to understand what the modeled may not reveal.

Models need not be computational, however, for example, a model city may set an outstanding example of how other cities should ideally function and studying that model city may teach us about the problems we might expect in its imitations. Many functional objects can be declared models and then serve as normative guides. There are model citizens, model communities, model speeches, model radio stations, and of course models of communication. Examining one thing in terms of another, liberating one's own thinking from the constraints of existing practices, talking things through before acting are all fundamental features of human communication.

Early models of communication were largely taken from technology, computer models being just the latest examples of this genre. But models can also be and often are propositional in nature or verbal, providing coherent descriptions of the what, when, how, or why of communication, making metaphorical references to mechanical devices physical processes or social roles we know well. When someone says "communication is the nervous system of society" he or she uses "the nervous system" as a metaphor from biology to construct a conceptual model of communication in society. All metaphors have this property: They take an explanatory structure from a familiar domain of experiences and apply it onto something in need of understanding, thus organizing an unfamiliar or inadequately structured domain of experiences in a way that thereafter seems clear and obvious. Metaphors offer even greater freedom of experimentation than physical models do but, not only are users more easily doped into

accepting a metaphor as description of what actually exists but taking the entailments of these metaphors for granted as well. Our task will therefore be to tease out the social implication of models and metaphors in the medium of their description which is the language we are using.

In this effort, I will avoid scientific models of communication and references to established scholarly authorities on the subject. Although I will have to resort to them eventually, at least in the beginning of this paper, I am more interested in ordinary language accounts of communication, the metaphors we actually use in everyday life, the folk models by which we think and in accordance of which we act. In other words, I will initially rely on the authority of ordinary and familiar talk to make transparent the linguistic basis of understanding communication. It is my contention that social scientists can hardly avoid rooting their theories in such common constructions. Once some of these roots are made clear, I intend to offer some observations on what the use of models and metaphors of communication tells us about communication and cognition.

Some archaic notions of communication

Communication not always was how we define it today. If we were to go some 5000 years back in time, to Babylon and Egypt, where writing is believed to have originated, we find no evidence that communication was conceived as transacted through a medium. This is not at all surprising. Any universally surrounding medium of life is difficult to perceive. So, gravity was "discovered" only recently because of its--for most practical situations--uniform presence. Because human communication, perhaps I shouldn't even use the term and say "language" or better still "talking," is a fundamental ability that defines the human species, it appeared so natural that it could be taken for granted for a long time. Nevertheless, writing introduced some "disturbance" of this "natural" practice of living and occasioned some archaic notions of what we may now see as communication.

Besides its use as counting and bookkeeping aids in the warehouses of traders and the courts of kings, early writing appears largely on major public buildings and on the walls of the Pharaohs burial chambers, all designed for "eternity." They state geneologies of rulers, major accomplishments, memorable public events, religious instructions and, last but not least, why these structures were built. Pictographs chiseled in stone could neither easily be altered (although they occasionally were by hostile successors) nor moved to another place (although the Romans took some Egyptian obelisks home for suveniers) and told their readers nothing other than what they already knew but should not forget: the civic knowledge they had to keep in mind and which law applied to those living with these written reminders.

These monumental inscriptions could hardly be seen as one-way communications, say from a Pharaoh to its people.

They were permanently there, demonstrating the power of legal authority, visibly putting existing social-political-religious reality in place and marking important transitions in a public ritual no living was to ignore. Let me call this archaic notion: "communication is the creation of monuments" whereby I do not wish to limit monuments to stone or metal structures as will become clear below. Monuments were manifestations of a history and a future not expected to change. They assured the permanence of social relationships that seasonal variations, wars, draughts, emigration, succession of rulers and new generations of inhabitants would not disturb. Who the readers were was quite unimportant and their creators possibly as well. The sheer presence of monumental writings presumably was sufficient to assure everyones compliance.

add here a picture of an
Egyptian obelisk and/or
wall painting of a burial chamber

The idea of equating such a fundamental human activity as communication with the creation of monuments may already have been present in the earliest artistic records we know, the Paleolithic cave paintings of Lascaux, some 15000 years ago, that depict animals, sometimes fused with human figures. We do not know for sure the authority that invested its magic in these paintings but we now assume they regulated everyone's understanding of the relationship between the tribe and their natural environment. They defined the tribe as hunters. They assured continuing success in gathering food and perhaps provided protection from unpredictable beasts. Magic fuses the distinction between reality and images and we can hardly assume these paintings to have been mere representations the way we interpret pictures today. They likely were an unalienatable part of a tribe's identity and established what had to be known, perhaps even worshiped. They were monuments in the life of the tribe's members.

add here a cave painting
of Lascaux, France or
similar painting

One could argue that the equation of communication with the creation of monuments has survived into the present, not only in the form of the familiar effigies of culturally important personalities, public structures erected in remembrance of those killed in war, not to forget the billions of gravestones all over the world, Luther's decrees, Lincoln's Gettysburg address, the announcement of someone's marriage in a newspaper or of a company's new product, even the insignias tourists apply to the historical sites they visit, all of these have much the same status: A self-proclaimed authority establishes lasting evidence of someone or something notable, often at a legally or personally significant transition point, whether this is the ascension to a throne, death, the end of a war, a major accomplishment, or a new stage in life. Think how often and at what near ritual

Abb. 1: Der Stein von Rosetta. 196 v. Chr. Gefunden
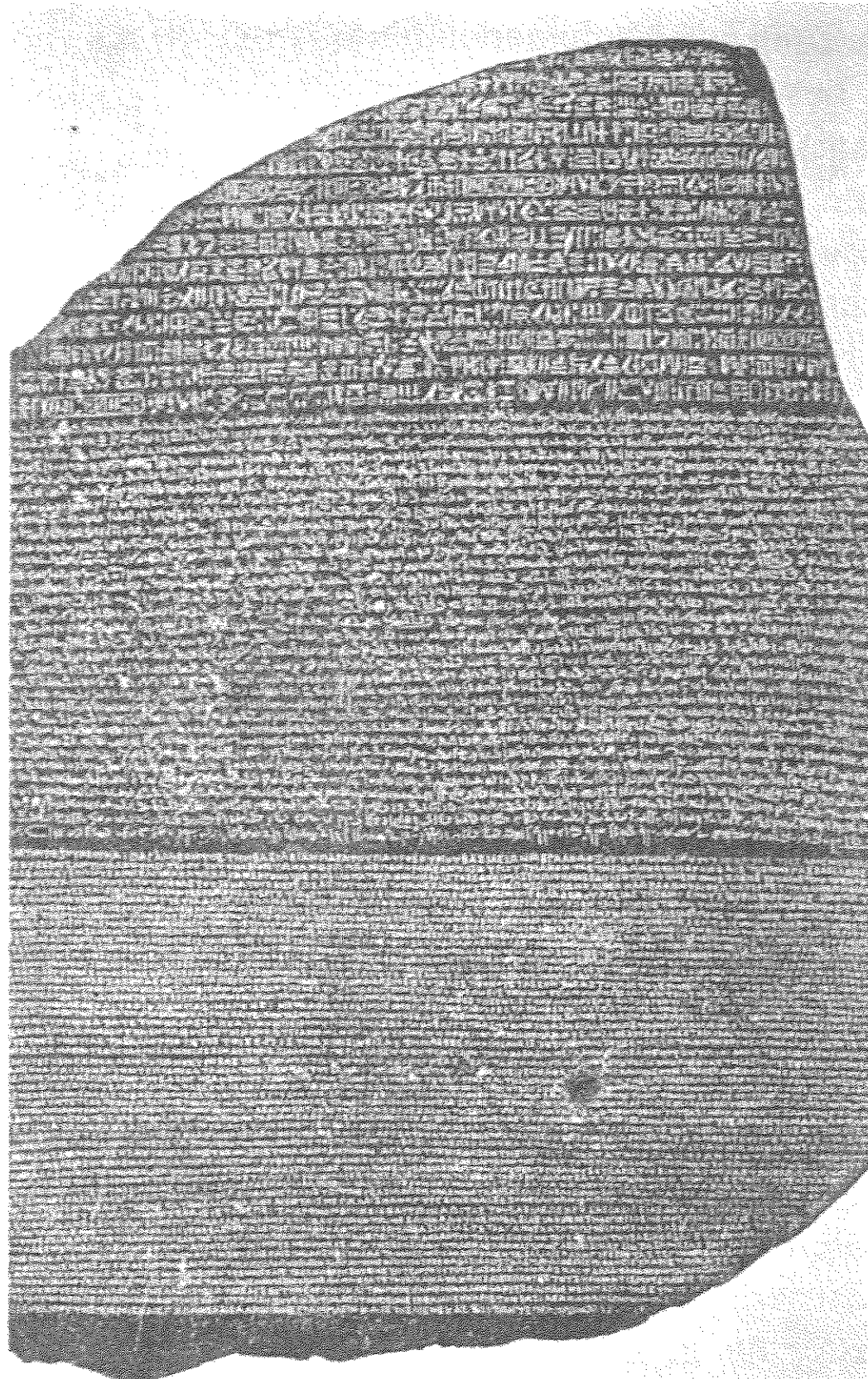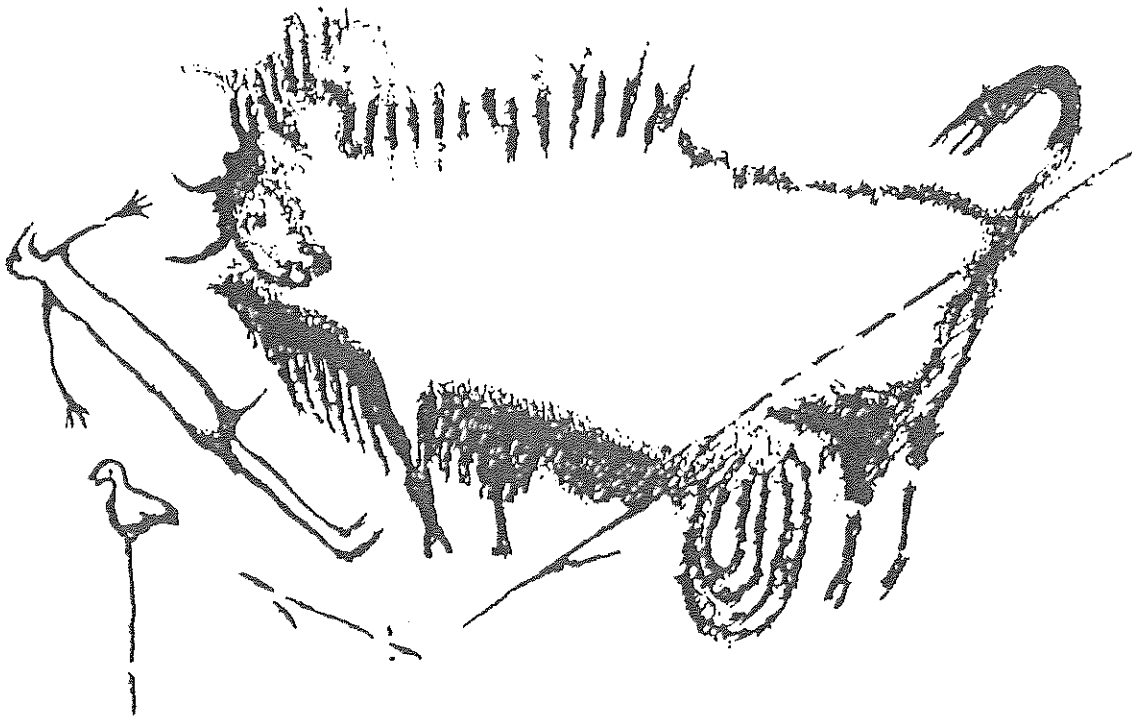in Rashid im Nildelta. London, Britisches Museum

Abb. 2: Wisent-Mensch-Vogel-Szene aus dem Schacht der Bilderhöhle von Lascaux. Etwa 13000 v. Chr.

Aus: Martin KUCKENBURG: Die Entstehung von Sprache und Schrift. Köln 1989, S. 120.

occasions modern politicians are asked "to make a statement," "to take a position," "to define an issue," what people do "to indicate their status" through performance, dress, or possessions, how important it is "to set a public record straight" that has been tainted or would otherwise go astray. The Congressional Records of the U.S. Congress, for example, do not account for what happened on the floor of the House of Representatives. Since congressmen and women can edit their speeches and introduce material never read, the Records are self-serving "monuments" to the representatives' own political present for future publics to see. In creating monuments, the idea of transferring something and especially of feedback from readers does not enter the concept. The mere act of putting it out is sufficient.

A second archaic notion of communication is found in the root of our modern word "symbol." It goes back to the ancient Greek "symbolon," a coin that two friends would break in half, each carrying one piece, in the hope that this would bring them back together again. The parts meant nothing by themselves but become magically empowered by the unity their bearers knew existed. The notion of "communication is a symbolon" can now be found in the idea of community, having a history in common, sharing some knowledge all of which are more or less embraced by the modern conception of communication. Incidentally, the way a symbolon worked was very much consistent with the then existing laws of physics. According to Aristole, things always had to find their destiny: smoke had to rise, stones had to fall, so it is not surprising that a symbolon had to be reunited. The parts of a symbolon simply matched, were mirror images of each other, and reestablishing the once existing unity was its ultimate purpose. The many statues the Greeks left behind may well have been crafted as the parts of a unity that everyone could complete by seeing, not as the representations we like to see them today. Thus "communication as a symbolon" is not to be confused with the representational function we now associate with symbols.

The third archaic notion well established in antiquity points to the concept of "communication is what divinely inspired messengers do." When the Greeks won a major battle against the Persians at Marathon in 490 B.C., a runner ran 26 miles and 385 yards to bring the news to Athens (and is said to have collapsed upon arrival). The Greeks were enamored by the physical accomplishment of the runner and we still celebrate this feast as an athletic category but, surprisingly, this incident was not seen as an exemplarily efficient act of transmitting information and one may speculate why this was so. The Greeks knew Hermes, the God who served as the herald and messenger of other gods. So, the idea of a messenger undoubtedly existed. But the runner was neither a god nor inspired by anything supernatural. He "only saw" what he conveyed. There was no divine command or mission which the concept of a messenger may then have required. To be inspired probably was quite common at that time. According to Julian Jaynes (1976) the Greeks that lived up to the time of the Illiad were largely unaccustomed to take individual

responsibility for their actions. They heard voices in their heads, believed to be from gods, and acted on what they took to be commands. A messenger had to be divinely inspired into action to be one. We don't quite know how the act of Moses bringing the commandments from Mount Sinai was conceived by the Israelis. But Muhammad much later clearly described himself as Allah's messenger and prophet, as a medium through which Allah spoke.

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add here a picture of a statue
of Hermes here or better of
Moses with the ten commandments

Divinely inspired messengers claimed accuracy in oral reporting but more importantly, disclaimed responsibility for the contents thus conveyed. The archaic meaning of "message" actually is "mission" and in the oral tradition, messengers also were the missionaries for a godly cause. Incidentally, what being a messenger entailed in ancient Greece may well be seen in Hermes' duties. He presided over roads, commerce, invention, eloquence, cunning and theft, all of which undoubtedly are now seen to have some connection with communication but he had to speak for other gods to be a messenger.

The fourth archaic notion might be called "communication is the presentation of arguments." The lack of unity among the Greek city states and the subsequent decline of their aristocracies brought many issues into public debate whose truths were uncertain and in need of clarification. Although debate is a process of communication by modern measures, the discipline of rhetoric that emerged with these problematic issues captured the increased awareness of the role of language and became concerned with proper argumentation, with logically conclusive reasoning, with tropes or figures of speech, with well constructed propositions and dealt with these normatively. Tradition has it that rhetoric originated in Syracuse and scored its first major success in convincing the Athenian assembly to conclude an alliance that resulted in a devastating expedition (Kennedy, 1963). Taught by the sophists, rhetoric acquired the reputation of rendering unsound advice acceptable and enabling its students to sucessfully defend themselves in public. In Phaedrus, Plato opposed the teaching of rhetoric, ridiculed the sophists for being willing to argue any point, regardless of merits, and instead praised the philosophers who, as the friends of wisdom, sought to approximate the truth of arguments by dialogue. Whether the criterion was (proper and convincing) form or (absolute) truth, the presentation of arguments became the center piece of a "sophisticated" understanding of language, a concern that focussed on messages but left processes of communication, the negotiation of meanings, etc., as unreflected givens.

That there was little awareness of communication seems to be true not only in these Western examples but perhaps even more so in other cultures. For example, only recently has the word "KOMYU-NI-KEISHO-N" been introduced into the Japanese language. While many people understand what it means, they seldom use it (Ito, 1989:174). Traditional Japanese and

Chinese references to communication apparently are rather specific and require concrete references as to what is given, received or exchanged. Nevertheless, in search for what may have been an archaic notion of communication, Shutaro Mukai (1979) directed my attention to the written word "NIN-GEN" for "human being." It consists of two separate characters, "NIN" which resembles an abstract human form and means "someone," "one" or "a human someone" but never occurs by itself. And "GEN" or "MA", which means "space" or "in-between-space." Accordingly, in Japanese, a human being is someone with space. Remarkably, someone without that space, written as "MA-NUKE" is a crazy one. Furthermore, "MA" is a character composed of two images, a gate which is a human artifact that can be opened to let things pass through or be closed and allows access by others; and the sun which is a natural phenomenon. This suggests that the Japanese and Chinese "MA" may indeed be an archaic form of what we now construct communication to be. It unquestionable does denote a spacial relationship thought to be fundamental to all human beings, a relationship whose absence renders someone as something other than a human being, unable to think, unreasonable, unintelligible, all of which denote inabilities in the communicative use of language. Here then, one might say: "communication is MA".

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add here or above appropriate
characters for NIN-GEN, MA-NUKE,
and perhaps KOMYU-NI-KEISHO-N.

Before moving to more contemporary models and metaphors of communication, I must disclaim exhaustiveness and historical accuracy in describing these archaical notions. From what we know about ancient cultures, it is difficult to reconstruct how its people conceptualized their own practices of living together, their own social world, and particularly the way they engaged in communication, a process whose cognitive nature leaves so few physical traces behind. However, we can say with some confidence that awareness of communication, the way we are constructing it now, is a much more recent cultural invention. Monuments, symbolons, messengers, arguments and MA may nevertheless be recognized in contemporary notions of communication.

The message carrying metaphor

To inform someone by a secular messenger surely must have been an ancient practice, but the idea of a message as something physically carried from a sender to a destination could not have developed without portable writing, first on papyrus then on paper, which extended the archaic notion of a divinely inspired messenger to someone who simply carried something written to a designated person or place. The written message, a light weight and hence easily portable material object of finite

Abb. 4: Japanische Schriftzeichen für „Kommunikation"

KOMYU NI KEISHO N
コミュニケーション

NINGEN
人間

NIN
人

GEN(MA)
間

MANUKE
間抜け

dimensionality that could retain the physical traces of writing, provided what we now call a technological solution to the human problem of unreliable recall and the social problem of intentional distortions. The ability and willingness of messengers to memorize and reproduce exactly what he or she was told to tell at a destination required considerable mental skills and a relationship of trust with the originator, in the absence of either, transmission became unreliable. Portable writing changed all that. With its invention in place, communication reduced to a problem of transporting messages not much different from delivering amber, spices or gold.

The notion of a message that could be carried to different places probably was the most influential invention in the history of communication. Much like monuments, but in contrast to the largely oral tradition of divinely inspired messengers, written messages acquired rather objective qualities. They could be read by many receivers, shared, reread, and filed. There were no losses in "meaning" due to their transmission. Written messages served as evidence of what a sender intended. Messages could be copied and compared. It gave rise to movements dedicated to the preservation of religious texts and supported early scholarly efforts of sharing calendars, calculations, observational records and knowledge. Quite unlike monuments, messages could be encrypted and concealed to prevent unauthorized reading. Letters and written decrees supported new forms of administration, starting especially with the expanding Roman Empire. It substituted for travel, produced new forms of communities, the scientific community for one, and created historical records. The notion of a message also became the catalyst of numerous technological inventions. It lead to the profession of scribes, established libraries, perfected elaborate networks of roads, developed a postal system along with its technical and human infrastructure of carriers, posts, tariff conventions, to name but a few.

The idea of portable messages survived numerous technological revolutions and adapted to printing with moveable type, the press, telegraphy, telephony, radio, television and computers: "messaging" by electronic mail. However, in the course of this adaptation the word "message," which initially stood for "mission," later for rather concrete physical objects that could retain traces of writing, has now become a metaphor of what "really" is or was intended to be conveyed through media that are no longer tangible and concrete. We speak of electronic messages that can no longer be taken into ones hand. We buy message answering machines that "capture" what an unsuccessful caller had to say. We say we "didn't get the message" when we mean we have not understood. We ask someone to deliver a personal message when we want that person to talk privately to someone. We apply "message systems analysis", a technique for obtaining statistical accounts primarily of news print, radio and television programming. When asked what the message of a sermon, political speech or movie was we expect to get an account of its gist,

omitting all details that were accidental to the physical circumstances of its communication, boiling it down to its essence.

Historically, the invention of portable writing solved certain human, social and even spiritual problems by objectifying (literally by putting an object in place of) what had to otherwise be remembered and by reducing the communication problem to one of transportation, carrying something from one place to another, whatever this something was, obviating the human involvement in the process. The now turned metaphor of carrying messages, or "messaging," retains this very objectivity, in the sense of requiring no references to human capacities. It applies the notion of portability to what "actually" is transmitted, that is, to the transformation of pattern from one medium to another. It implies directionality, emphasizing the movement from an active and informed sender to a passive and ignorant receiver.

The container metaphor

In the conception of a divinely inspired messenger, the distinction between the messenger and what he or she was destined to convey was essential. Since the human carrier of written messages was no longer concerned with what a message said but with getting it to its destination, a distinction between the material form of a message and its meanings became necessary as well. The former affected portability the latter did not. Because it was thought that meanings could be locked into a word much like whole messages could be put into an envelop and sealed against unauthorized inspection, the metaphor of "a message is a container" came into being. Some communication researchers jokingly call it "the bucket theory of meaning" but the metaphor has to be taken more seriously. It permeates virtually all discussions of communication today. We ask someone about what was in a letter, what someone got out of a lecture or we complain that someone reads something into the message that wasn't there. Even more literally, we analyze the content of television, judge a sentence meaningful or full of meanings, declare a paper to be crammed with ideas or claim there wasn't anything new in it at all. We might even believe that if someone hasn't put her heart into what she says, she hasn't said anything. Similarly, engineers speak about signals having information content or being polluted by noise. All of these phrases depict messages, linguistic expressions, pictures, electronic signals as containers for meanings, ideas, or things that were conserved in them until they where removed at their destination.

> add here a schematic drawing of
> containers with entities
> being shipped in them

A corollary of the container metaphor is that both "messages and their contents are entities" of a particular kind. In the case of the container, this might appear obvious. The paper on which something is written, the electronic signal, the sound of

voice have a physically measurable existence. But everyday discourse seems to treat contents as entities as well. We get something out of a course of study. We receive pieces of information or news items. We believe someone told us half of the story. We can't nail meanings to a tree but have no qualms posting signs, warnings and announcements on street corners or on bulletin boards thereby treating what they say as tangible things. We compose letters not much different from how a mechanic assembles a technical device and we analyze units of content not much different from how geologists might sort stones into different boxes.

If both, messages and their contents, are entities, then one could also have containers in containers. So, ideas are contained in words, words are contained in letters, letters are shipped in (thus become the content of) bags used by the postal system, etc. The entities contained in messages become the purpose of communication, the container its means which reduces the process of communication to nothing more than shipping. In fact, in the military, communication still is equated with transportation: building roads, providing logistical support for the troops, making sure that messages get to their destination. Treating messages and their contents as entities of different kinds, is an objectification of communication that excludes human cognition from all of these considerations.

How deeply entrenched the notion of "messages are containers for entities" is may be seen in the explanations offered for when this folk logic does not work: if a message contains entities that someone has put into it, then it would follow that a receiver must be able to take out exactly what was put into it. However, should this receiver get something different out of the message then there have either been transmission errors or the receiver is incompetent, devious or crazy. The possibility that the metaphor may be inappropriate rarely is considered in distributing blame for experiences of misfits. The logic of putting meanings into messages and removing them upon reception at another place encounters no problems when communication is perfect. It recognizes even empty containers like blank sheets of paper or unmodulated light, but one of its entailments, that entities cannot be removed more than once, is contradicted by the ordinary experiences of reading. The second reader of a newspaper will not find it empty, yet we maintain the metaphor despite the absurdities to which it leads.

The sharing metaphor

The notion of communication as sharing logically follows from the metaphors of carrying messages and of messages as containers of entities and may have been anticipated by the archaic notion of a symbolon.

To prevent misunderstandings here, let me add that there are two rather different notions of "sharing." The first is

"being part of," "playing a role in," etc. The second, and the one I am referring to here, is "having in common with," "being in some respect the same," "thinking alike." This latter kind of sharing can be visualized by the well-known Venn-diagram. It consists of at least two partly overlapping circles denoting sets of elements. The intersection of two sets contains the elements both have in common or share and the remainder contains elements in one but not in the other set, hence elements not shared. Now back to communication.

add here the drawing of a
Venn-diagram

If the sending and receiving of messages is conceived of as putting such entities as meanings into messages, shipping contents in containers to another place where they can be taken out by receivers, then it would only be natural to equate communication with the condition that whatever is sent also is received as such, that the intentions of a communicator are realized by the receiver of his or her messages, that if two individuals receive the same message also get the same content out of it and in the case of mass communication or similar mere duplicatory efforts, that all those exposed to the same media events end up being informed about the same thing, having the same pictures of the world in their heads, conforming to the same conventions, having the same repertoire of symbols at their disposal, subscribing to the same values, thinking alike, in short, share the contents of communications, have a media history in common, etc., and thus find themselves represented inside the intersection of a Venn-diagram.

What is outside the intersection of that diagram, the meanings not shared among communicators, must then necessarily be in error. It is what someone put in and others didn't get out or what someone took out of a message that wasn't entered there to begin with. It is that part of someones repertoire of symbols the other doesn't understand. It is where communication didn't take place. What is outside the intersection of a Venn-diagram contributes nothing to defining speech communities, social classes, the unity of culture and what communication supposedly does and is therefore either ignored as theoretically irrelevant subjectivity, idiosyncrasy, etc., or branded as deviance, distortion and failure.

Evidence for the working of the sharing metaphor is abound. For example, in courts of law, a judge will make sure that the signatories of a document possess the competence of understanding the language in which it is written but never doubts that there is but one (his or her) correct reading. Or, in content analyses of mass communications, research results end up painting objective pictures of what television, radio or the press presents to the public as if there could be only one correct interpretation which every competent viewer or reader shares. Assuming message contents to be objectively analyzable also makes it quite

Abb. 5: Darstellung der Schnittmenge (schraffierte Fläche) im Venn-Diagramm
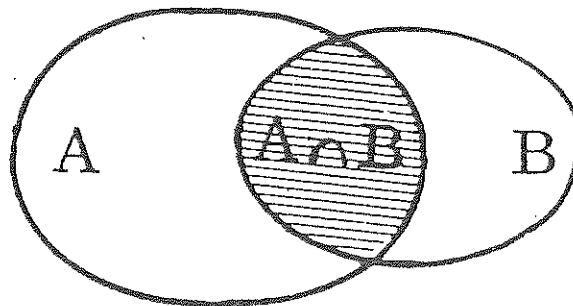
unnecessary for communication research to study how meanings get out of someone's head into a message and back into someone else's head. Since these all are assumed to be the same entities, having an objective account of the content obviates concerns for the human cognition involved in the process, thus reducing questions of how someone comes to know to questions of which messages with known contents someone was exposed to, or to questions of who the audience of a TV show was.

Communication is sharing is even more at home in everyday life. Witness the rather familiar questions: "do you understand what I said? " "Did you get the message (meaning its content)?" "Do these candidates say the same thing?" "Can you make it out?" "Do we agree on this?" "Do we share the same background?" All of these questions presuppose the existence of just one legitimate meaning any competent communicator will naturally recognize by sheer contact with it. Under the metaphor of communication is sharing, the objective status of the content of communication is not in doubt, save for the ability of communicators to remove it from its container.

Drawing of two people
<u>putting messages into each other's heads</u>

The popularity of the metaphor of communication is sharing is furthermore demonstrated etymologically. After all, the word "communication" can be seen to have the same root as "common," "commune," "community," even "communism," all of which have something to do with sharing, with being in some respect the same, having a common history or concern. This may even have been carried over from the archaic notion of a symbolon, the sharing of the common experience of friendship. Unfortunately, I will have to show later that the equation of sharing and communication carries the seed for potentially oppressive authorities to arise.

<u>The argument is war metaphor</u>

Presumably out of the oppositional climate in which Greek rhetoric arose or perhaps grounded in the British tradition of public debating comes a metaphor, more associated with talk than with writing, equating argument and war. George Lakoff and Mark Johnson show it to be reflected in a variety of everyday language expressions

"Your claims are <u>indefensible</u>."
"He <u>attacked every weak point</u> in my argument."
"His criticisms were <u>right on target</u>."
"I <u>demolished</u> his argument."
"I've never <u>won</u> an argument with him."
"You disagree? Okay, <u>shoot</u>!"
"If you use that <u>strategy</u>, he'll <u>wipe you out</u>."

Abb. 6: Kommunikation als Erzeugung und Mitteilung von Gemeinsamkeiten
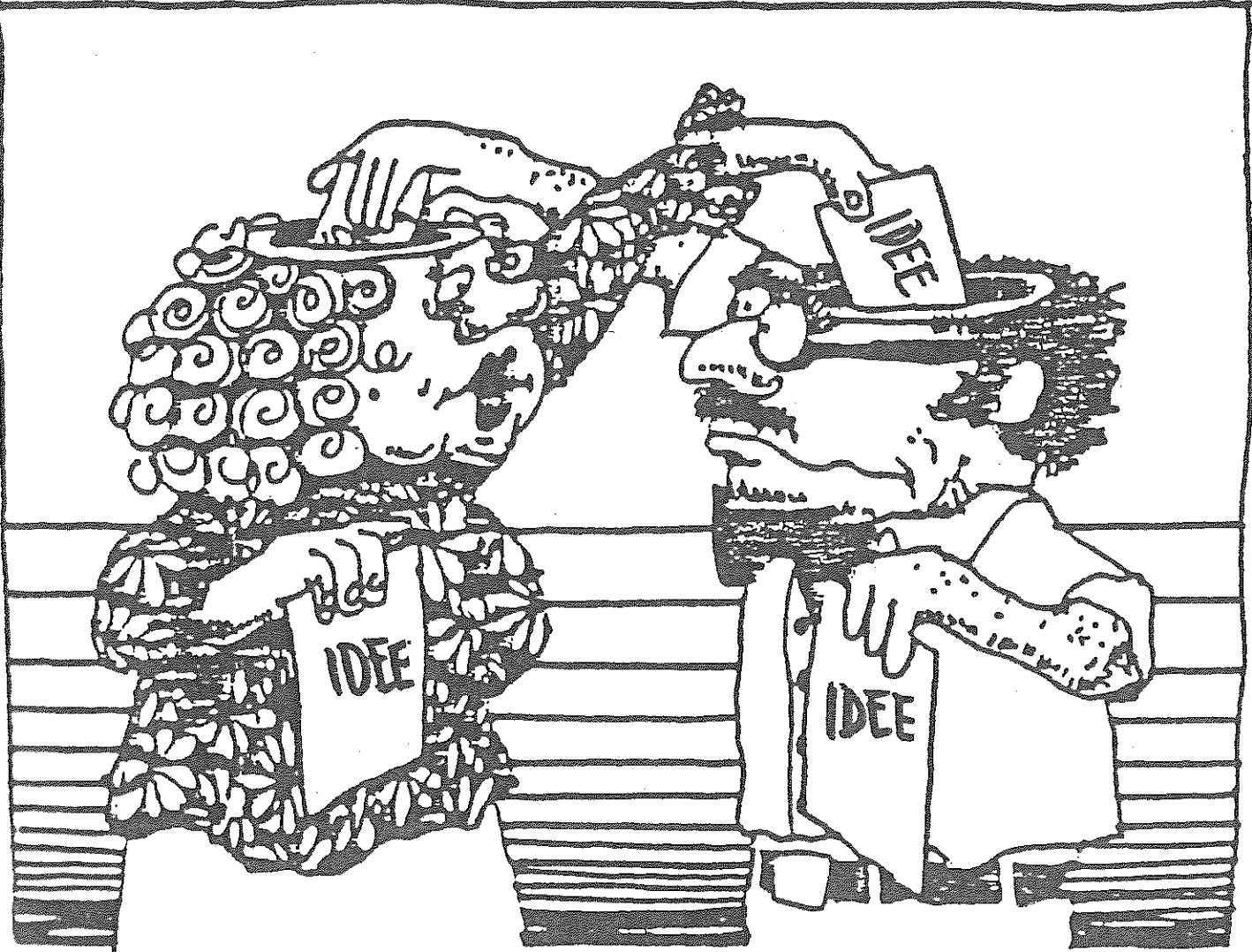
"He <u>shot down</u> all of my arguments."

It is important to see that we don't just talk about arguments in terms of war. We can actually win or lose arguments. We see the person we are arguing with as an opponent. We attack his positions and we defend our own. We gain and loose ground. We plan and use strategies. If we find a position indefensible, we can abandon it and take a new line of attack. Many of the things we do in arguing are partially structured by the concept of war. Though there is no physical battle, there is a verbal battle, and the structure of an argument--attack, defense, counterattack, etc.--reflects this. It is in this sense that the ARGUMENT IS WAR metaphor is one that we live by in this culture; it structures the actions we perform in arguing.

Try to imagine a culture where arguments are not viewed in terms of war, where no one wins or loses, where there is no sense of attacking or defending, gaining or losing ground. Imagine a culture where an argument is viewed as a dance, the participants are seen as performers, and the goal is to perform in a balanced and aesthetically pleasing way. In such a culture, people would view arguments differently, experience them differently, carry them out differently, and talk about them differently. But we would probably not view them as arguing at all: they would simply be doing something different. It would seem strange even to call what they were doing "arguing." Perhaps the most neutral way of describing this difference between their culture and ours would be to say that we have a discourse form structured in terms of battle and they have one structured in terms of dance (1980:4-5).

Argument obviously is not a subspecies of war. Verbal communication and armed conflict are different kinds of human actions, but using the terms of the argument is war metaphor cannot but set communicators against each other with the aim of establishing who is right, who is the better of the two, or who ends up as winner, etc. Naturally, the metaphor would work best when there is something to win, like in bargaining for a good price or even the recognition in a debating competition, but when there is no obvious criterion for gaining or losing something, the use of the metaphor immediately attracts extraneous criteria like maintaining personal pride, needing to be dominant in a relationship, demonstrating superior competence, etc. All of which may have nothing to do with the issues under discussion and can effectively prevent solutions to problems people need to communicate about.

<u>The conduit metaphor</u> or the flow of signs.

In the 19th century, a new technology entered human communication. Early experiments with continuous sources of electricity during its first quarter led to commercial telegraph lines already during the second. The telephone was invented in 1876 and widely in use by the turn of this century. The speed of this technical development was staggering leaving the understanding of how messages with their undenyable physical dimensionality could be "squeezed through solid wires" far behind but for a few experts. The situation is a perfect example of the need for new metaphors that would apply familiar explanatory structures to a new domain of experiences in need for understanding and organizing otherwise incomprehensible phenomena. The idea that communications must be "squeezed" through wires already appeals to a metaphor from fluid mechanics, perhaps even shipping, which quickly became the dominant metaphor for conceptualizing what this new technology of communication could offer. The wire could be seen as a tube with something flowing from a sender to a receiver much like a plumbing system.

Early experiences with the technical constraints on such communication, for example, that telegraphy was restricted to the transmission of the dots and dashes representing characters of the written alphabet (and in fact operating ticker tapes at a distance) whereas telephone was limited to the transmission of voice, lead to the notion of <u>channels</u> of communication, the chunking of the "spectrum" of expressions by transmittable characteristics. With hydraulic metaphors of communication as conduit now well in place, one has no difficulty conceptualizing human communication as a <u>multi-channel</u> phenomena, simultaneously employing verbal and non-verbal or auditory, visual, tactile, olfactory, and gustatory channels of communication. In the analysis of mass communication one speaks of <u>gate keepers</u> who selectively direct the <u>flow</u> of information to the public. In the analysis of information processing in the brain one speaks of <u>filters</u> that let some information through but stop others from entering. In the analysis of communication in social organizations one speaks of <u>bottlenecks</u>. In describing how governmental decisions are processed <u>through</u> an administrative network one speaks of long or short <u>pipelines</u>. One measures <u>volumes</u> of communication, compares this to channel <u>capacities</u> and complains of <u>overloads</u>. All of these contemporary concepts of communication come from and are familiar in hydraulics.

---
add here the Johnson Model
or a more suitable adaptation
of it

Although the conduit metaphor came to us from experiences with the flow of fluids, it posed problems similar to what the metaphor of carrying messages had solved before: How could one comprehend what it was that passed through these channels and made sense at the other end? The physicists' explanations in terms of motions of electrons, wave form modulations, quantum physics, etc. were far removed from the social constructions within which telephony, radio, and television communication was comprehended. Even engineers did not need to and perhaps could not get into the physics of communication and developed their own metaphorical understanding of signals <u>travelling</u> through wires and <u>carrying</u> information and noise "on their backs" as if there were an objective difference between signals and what they carry. This is the container/content distinction rephrased into the distinction between channels and what flows through them. This objectification of what was sent, again at the expense of recognizing the cognitive contributions senders and receivers made in this process, continued the path well trodden by the metaphors used in understanding written communication. So, with the addition of the notion of "transmission" to account for the experiences that we may not be able to recognize the signs, symbols, images or messages while they flow in a medium through channels connecting senders to receivers, we now speak rather naturally of the

Das Johnson-Modell
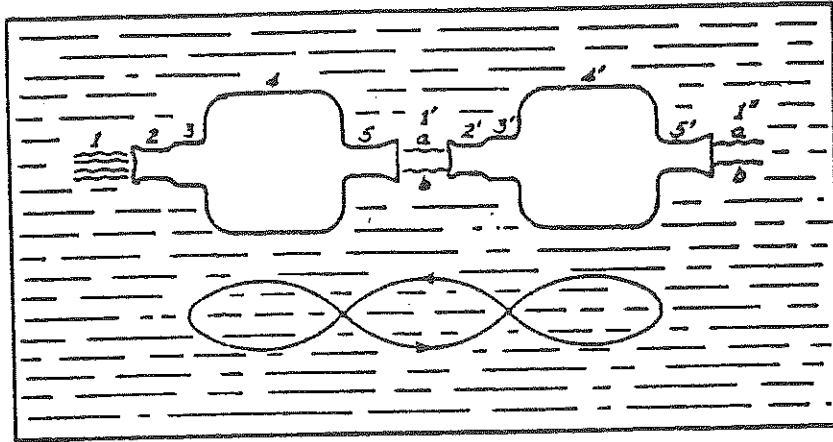
Zustand 1: Ereignis oder Quelle der Stimulation (außerhalb der Sinne und Organe des Sprechers)
Zustand 2: Stimulation der Sinne
Zustand 3: vorsprachlicher neurophysiologischer Zustand
Zustand 4: Übertragung vorsprachlicher Formen in symbolische Formen
Zustand 5: sprachliche Formulierungen in endgültiger Form für die Übermittlung

Zustand 1': Übertragung sprachlicher Formulierungen in (a) Ätherwellen oder (b) Lichtwellen, die als Quellen der Stimulation für den Zuhörer dienen (der sowohl der Sprecher als auch eine andere Person sein kann).
Zustand 2': korrespondiert mit 1" wie Zustand 2 mit 1'. Die mit Pfeilen versehenen Schleifen stehen für die funktionalen Wechselbeziehungen aller Zustände in diesem Prozeß.

Aus: Wendell JOHNSON: The fateful process of Mr. A. talking to Mr. B. *Harvard Business Review* 1/1953, S. 50.

transmission of signs, symbols, data, text, images, etc. We also maintain the distinction between signals, to which mere physical characteristics are ascribed, or sign-vehicles, as semioticians prefer, and the signs, symbols, messages etc. they are said to carry,-- as if the medium cleverly accommodated their differences and knows what they are.

The mathematical theory of communication, information theory.

Shortly after World War II, Claude E. Shannon published his Mathematical Theory of Communication (1949). The theory essentially is a calculus of variation, enabling its user to account for quantities of information transmitted between and within systems whether these be mechanical, biological, or social. The calculus resembles accounts of money flows within a corporation or of energy consumption pattern within a city but concern a different kind of quantity, quantities of information.

The problem of measuring volumes of what is or could be communicated through a channel clearly was stated in the shadow of the conduit metaphor and Shannon's explanations bear the mark of its influence. But to obtain quantities of information, the metaphors just discussed and the concepts they supported turned out to be largely useless for Shannon's program and misguiding. In fact, Shannon deliberately refrained from using the term information theory for he feared that the quantitative concepts he derived from his axioms did not conform to popular notions of information as "desired knowledge" and that the mixing of metaphors or use of inappropriate terms would not have helped practical applications of the theory. Expressedly, he was only concerned with how much can and is being communicated from one place to another and how the nature of the encoding and decoding process by which transmission is describable limits these quantities.

Much of the theory is based on the idea that information enables someone to draw appropriate distinctions, to make choices to a degree better than chance or to select among alternatives whose probabilities are knowable at least in the long run. Information is measured in bits, defined as the average number of binary choices needed to logically exhaust or correctly identify any of a set of conceivable alternatives. Among the many mathematically equivalent interpretations of information are, when associated with a message, the difference between two states of uncertainty in its receiver, the uncertainty before minus the uncertainty after that message became known, when associated with transmission, the difference between the uncertainty or entropy in the receiver without and the uncertainty in the receiver with knowledge of what was sent, or, when associated with the orderliness of a pattern, the difference between the entropy of a whole system and the sum of the individual entropies of each of its parts. Much like the concept of energy in physics which is defined not by reference to particular forms of energy but as the capacity for doing mechanical work, information here is neither meaning nor matter but a measure of the logical or intellectual

work something, knowledge of a signal sent, a message understood, a probability distribution of data points available, etc., does in the context of what is conceived possible. Communication here becomes a measure of the extent such logical work as drawing distinctions, making decisions, organizing something and reproducing something could be made at a distance, maintained over time, or mediated between different forms and in the face of stochastic interferences or noise.

This is a whole mouthful of unfamiliar concepts. Let me give some examples to clarify them. In human-computer communication and based on information available about a problem to be solved, a computer programmer may be seen as deciding among the programming strategies he or she can conceive of. The program, written in a humanly convenient programming language, is entered into a compiler that selectively issues appropriate machine language instructions to the operating system which in turn specifies what the computer does, including how it responds to available data and interacts with users. Communication here connects a sequence of selection, selections of selections, selections of selections of selections, etc. throughout which the original intentions are somehow preserved, sometimes despite ignorance of how this is accomplished.

Another example is the analysis of communication in a social group. If one were to focus one video camera on each member of a group and record and subsequently analyze what he or she said, gestured and did, one creates an account or an inventory of the states each member is capable of taking. Taking into account their probabilities, this variety can be captured by an entropy measure. If one now also records and analyzes what the group does as a whole, particularly including the cooccurances of each member's verbalizations, gestures and interactions, what emerges as a result of the interaction, the group's synergy, becomes a measure of the entropy of the joint states the group is taking. If every group member would simply do his or her own thing, taking no notice of what anyone else does, then, the overall entropy is large and equals the sum of the individual entropies. However, if members respond to each other make their behaviors dependent on what others say or do and thus do not use the whole combinatorial variety or freedom a group is conceived capable of, then the sum of the individual entropies exceeds the overall entropy by the measure of the amount of communication inside the group. Here, communication is seen as a measure of coordination within a group and indeed, coordination is what most communication effectively does--from taking alternative turns at talk to making and abiding by agreements to working together towards a goal. Moreover, notice that such a quantity of communication has to do with how decisions depend on each other within a group but not with the nature of the signals, noises or messages directed at members to initiate this coordination.

A third example may be found in mass communication. An information theorist might say that the mass media make available a probability distribution of stories, news items, points of view and issues which provide much of the substance of

individual reality constructions, the topics of conversation and public debate among members of the society, how they behave, vote, protest, buy products, volunteer, make career choices, engage in deviant behavior, etc. From this pool, news items, stories and fictionalizations are selected by the mass media, thus making the process circular and reiterating. Although this description of mass communication is much too simplified, choices among programming options sequentially inform choices among alternative reality constructions, inform choices among issues to be concerned about, inform choices of particular behaviors and inform choices of what journalists find extraordinary enough to bring to public attention, etc. Whereas in computer communication, transmission errors are virtually absent and information is preserved, in social communication situations, variations on what is seen, heard or acted upon and the addition of new ideas and experiences into the circular reality construction are the rule. And since journalists focus on the sensational, unusual and rare, which also measures high in the amount of information conveyed (relative to what everyone routinely expects), within structurally defined media constraints, the system keeps constantly reconstructing the pattern that reality is.

Historically, Shannon's theory provided such quantitative concepts as information transmission, channel capacity, redundancy, equivocation and noise, a technical vocabulary that quickly spread into many disciplines. For examples, under the influence of the theory, computers were no longer seen as arithmetic devices, they became logical machines said to be capable of making decisions and handling information. Organisms, particularly including the human brain, came to be described as complex nervous networks for processing information. Listening, thinking and speaking came to be described as decoding and encoding significant patterns (ideas in the nervous system). Libraries became depositories of societal information, the knowledge that constitutes a culture. Governments became political information processors, etc. Shannon's theory, rigorous as it is and limited in its stated intentions to stochastic processes based on enumerable alternatives with probabilities associated with each, had acquired the power of a metaphor to organize several empirical domains and became the scientific basis for human communication research. It is for this reason that the discussion of information theory is included here among what one might otherwise call folk theories of communication.

Probably the most remarkable contribution of the theory lied in providing stimulation for communication technology. The quantification of information created an awareness of and capability to optimize the capacities of old media and invent new media for communication from FM radio to glass fibre technology (ISDN). The emphasis on processing information lead to the development of new codes for information transmission between different natural and artificial languages. Thus, the idea of transmission became dissociated from its physical medium and associated with the pattern that connect. As communication

became more affordable, more and more of the human population became connected through increasingly rich networks for accessing information, for coordinating actions among individuals regardless of distance and thereby increasing options that did not exist before. The theory became not only the catalyst for an enormous technological development but also the backbone of numerous new scientific disciplines from human communication research, already mentioned, to artificial intelligence and thus ushered what some say is an emerging new form of society, one primarily driven not by the scarcity of energy and material resources but by information.

The control metaphor

The root of equating communication and control is old as well, going back at least to the tradition of rhetoric which valued convincing argumentation over truth. Today mastery over reality, the process of achieving desired ends, the use of technological solutions for human problems seems to have become a goal in itself, at least in the technologically advanced West, and conceptions of communication are being dragged into this instrumental paradigm as well. The metaphor of "communication is control" is supported by several notions, rendering communication as a causal phenomenon, as a source of power and as a technology of domination and manipulation to achieve desired objectives.

Evidence for seeing communication as a causal phenomenon is abound in ordinary conversations. We may say: "the weather report caused her to wear a raincoat," "the letter I received made me happy," "the mass media influenced voter's choices," "TV watching effects the grades earned in school," "showing a racist commercial produced an outpour of complaints," "the report forced management to reconsider its position," "he could not help but accept the conditions," etc. If communication is a causal phenomenon then it must also have the necessary power to have these effects and indeed, we speak of overwhelming orators, strong appeals, powerful messages, potent communications, and insist that the power resides in the messages being communicated rather than in the receiver accepting them as such. Much of scientific inquiry into communication seeks to establish causal connections between messages and effects between what a politician said and how his or her audience responded, what the impact of a new technology is. Although there clearly are other explanatory frames, for example, for why someone would wear a raincoat after hearing the weather report, causal explanations are not only simpler but, perhaps more importantly, they also feed into institutionally preferred explanations. If something cannot be explained as a cause, then it cannot be used as an instrument or means to accomplish objectives either.

In fact, the whole communication industry, the mass media in particular, which is the principal consumer of applied

communication research, is dedicated to seeing communication as a means to accomplish something at a distance, as a technology of manipulation, whether this involves selling a product, getting a political candidate into an office or informing citizens for action. Again, ordinary speech reveals this instrumental conception of communication: If a show does not bring the projected audiences, we are quick to say "it failed as a communication." If an advertisement does not make its readers buy the advertised product, we say "it hasn't communicated." If someone manages to talk others into admiring her, we call her "a good communicator" regardless of what she says. Adopting as a premise of seeing and action this narrow view of communication as control leads us to ignore any unintended consequences. For example, the unsuccessful advertisement may have been a source of jokes, a source of conversations or taught critiques a lesson. Or, a racially biased political advertisement may have brought the candidate it promoted in office but created such disrespect for political advertisers that they will have to think twice before using the same communication strategy again. With control notions in mind, effects outside the range of desirable phenomena do not enter the concept of communication.

The equation of communication with a means to desired ends is not limited to the institutional sphere. If someone concludes a conversation by saying "obviously, I am not communicating with you," this statement can hardly refer to the other's understanding of the statement, else it wouldn't have been said, but to not getting what that speaker wanted to accomplish, the anticipated effects. "I can't get through to you" (also notice the conduit metaphor at work), "you are not listening" (notice how the freedom of not having to agree with someone is turned here into a judgement on the compliance with a receiver role, demanding that a listener be attentive and receptive to what the speaker says), "you don't understand" (notice that understanding is decided by the speaker, not by the one whose cognition is judged flawed), etc.

All of these rather common expressions of the metaphor of communication is control suggest three conceptual ingredients of the metaphor. First, that communication is successful communication and successful communication is bringing someone to believe, say, or do what a speaker wants him or her to. Second, that communication is asymmetrical, proceeds from a speaker to a listener, and any feedback that might exist always is subordinate to the speaker's intentions; and third, that the speaker or intender determines the criteria for something to be or not to be communication, and judges whether or not the addressee complies with his or her assigned role and whether or not the intended effects were achieved.

The instrumentality implied in the control metaphor is of course the backbone of Western notions of rationality and the driving force behind communication-technological developments. It is therefore not surprising that the control metaphor also saw support in Shannon's mathematical theory of communication. It could quantify the extent to which decisions determine

other decisions made at a distance. Information theory is completely neutral to the metaphor, however. It can provide measures for both information transmission, which can be interpreted as a measure of the extent to which control is exerted, and noise, which then becomes a measure of the extent to which sender's decisions are corrupted by unreliable transmission, by receiver's disobedience, and the latter's assumption of freedoms of choice or autonomy. The theory does not presume unidirectionally however, and has recently been extended to circular communication processes (Krippendorff, 1986) that do no longer fit the metaphor.

A word on feedback is needed here. Monuments, we would now argue, also were a means for control, even though we have no clue to whether they were then conceived as such. Importantly, monuments do not imply feedback. There was no way of obtaining information about effects from target audiences and to modify the monuments the desired effects. It is the latter that the control metaphor encompasses. While cyberneticians are abhorred by the asymmetry this metaphor implies, correctly insisting on the circularity that gives all those involved potentially equal veto powers, defining communication as a means to achieve particular goals against the interest of others and legitimizing this conception by enforcing compliance with the control metaphor, neccesitates feedback but assigns it only confirming or disconfirming functions, thus preserving the essential asymmetry of control.

Interim summary and some entailments

The enormous capacity now in place to process text and data by computers, the expanding multitude of languages available for describing, creating, computing and communicating pattern, the growing ability for networking with others at great distances and connecting voluminous information sources almost instaneously, the richness and almost universal availability of popular mass media systems have created options arguably beyond the reach of individual understanding. Whereas previous technologies were slow in coming and allowed time for new models and metaphors for understanding communication to evolve, the ongoing technological development is not only comparatively explosive, but also capable of embracing most of the older metaphors and leaves considerable room for new ones to enter discourses on communication. This surely is a qualitatively new development.

For example, the user of the Macintosh computer is given the impression to open files, walk through documents, reorganize them, edit them, write on them, discard unwanted matter by moving it into a trashbin, etc., while the computer proceeds by a logic that has little to do with that user's understanding. In a computer, there are no files, there are no trashbins,

there are no characters of the alphabet, there is not even anything physically moving. In a computer, complex arrays of binary states change in the context of other binary states according to externally written instructions. The Macintosh computer is successful in the marked place precisely because it does not require the user to even remotely understand what is going on inside and provides interfaces that are meaningful in a world the user is familiar with.

For another example, consider someone seeking to "send a message" to a friend, a telegram or facsimile. For the designer of the system accomplishing this, the original may be seen as electronically dissembled, digitally coded, entered into a continuous medium with signals from many sources to many other receivers, rooted through a complex network of connections that constantly organizes itself for optimum efficiency (without anyone able to know where and how "the message" is), beamed to a satellite, transformed and beamed back, unscrambled,...,and finally reproduced. The users of this system need not know all of this and can afford to think and act as if the original piece of paper were shipped to the other end of the copper-wire road. Unless designers and users have reasons to talk to each other, the difference between their individually adequate functional conceptions are non-noticeable and insignificant.

In both examples of communication, between a human and a structure-determined computer of rather different materiality and between two cognitively competent friends at a distance, the idea of living in a paper world was not threatened and the model of handling and sending written messages in no way impeded perhaps even facilitated their sense of communication. The new electronic medium of communication embraces this older model and opens its capacity for many more to be invented and applied. The new frontiers of communication development are no longer technological, at least less so now than it was, say, twenty years ago, but lie in language use, in the metaphors individuals, communities and societies can invent and viably practice in these new media.

Models, metaphors and one might well add myths of communication have survived practices of communication when they worked, but they can also work themselves into strange entailments. What is important, therefore, is to examine what these models and metaphors imply for the social construction of interpersonal relationships in work and intimacy, for the institutional development they may selectively support, for the technology they may direct, and for the social theories they implicitly inform. I want to give two primary examples of these entailments before drawing some constructivist conclusions on how we could look at phenomena of communication.

Let me start with communication is sharing. I am suggesting that this commonly cherished metaphor is a wolf in sheeps clothing. Considered as the foundation of intimacy, friendship, community, and social organization, communication is sharing

invites, nourishes, and can hence not be separated from instituting an authority, an authority that is constitutively oppressive. As presented earlier, when messages are containers of entities that have an objective existence and belong to a single observer-independent reality, contents of communication must therefore be the same for whoever puts them in and whoever takes them out and all those receiving the same message must also get the same content. Because sharing is so highly valued in society, the experience of disagreements or mismatches between intentions and receptions or among different interpretations of the same message often is upsetting. When such discrepancies are apparent, it turns out, we do not dismiss the sharing metaphor, rather, we find either the process of communication unreliable or the communicators incompetent, devious, or in error. I am suggesting that blaming the communicators evokes three normal responses, all of them basically inhumane.

Firstly, differences may be *dismissed* as errors, pathological, devious misconduct or mere entertainment. We dismiss them as *errors* when we can trace differences to inabilities, accidents or involuntary happenings. We dismiss them as *pathological* when we can explain them in terms of unfortunate conditions like that of schizophrenics who cannot help but express themselves in characteristically deviant ways. We dismiss them as *devious misconduct* when we have reasons to believe ulterior motives account for them, like the calculated ambiguities in political election campaigns or simply lies. Finally we dismiss them as *entertaining curiousities* when we can discount their reality, like the paradoxes that amused logicians for two thousand years until Whitehead and Russel's theory of logical types ruled them completely out of existence and meaningless.

Note that all of these dismissals presuppose and are entirely based on assuming the authority to do so. Those who can dismiss what others get from their messages must be free of errors themselves else the errors others make would be confounded and not be recognizable as such, they must have access to objective norms else pathologies could not be judged, they must have superior knowledge about others' true motives else devious misconduct could not be established, and above all, they must have privileged access to an objective reality else magicians, paradoxes and if you want to add metaphors could not be ruled out of the domain of the scientific, the objective and the real. Needless to say, the dismissed one is left with no cognitive autonomy at all.

This metaphorial entailment alone is astounding but let me add the other two.

Secondly, differences that can't be dismissed may be submitted for *mediation to another authority*. This authority may be a distinguished person, an institutionalized procedure or both. When we ask a speaker to clarify what he or she said, we attribute this authority to the originator. In fact, a whole rhetorical tradition makes a speaker's intentions the ruler over what a correct interpretation is and I have actually no qualms about this when discourse is possible. But when authors cannot mediate between different readings there always are authorities, experts, rulers, judges, who are either invited or eager to impose their legitimate authority on such situations. Professors enjoy the privilege of institutional authority in grading students on what is relevant and how reality is to be interpreted. Scientific procedures too confer institutional authority on facts that non-scientists may not doubt for fear of the inevitable ridicule this would entail. But probably the most important institutional authority is the legal

system. The interaction among lawyers, judges, law enforcers, etc. is designed to channel and mediate controversies that inevitably consist of conflicting interpretations of what the relevant facts are and whose solution is to be considered fair. By design, a court always dismisses all but one version.

Thirdly, differences that can be neither dismissed nor resolved by mediation yield *physical violence*. Most physical violence in the United States occurs not on the streets, as television tries to make us believe, but in homes. And violence in families rarely is about food, love or children but about *who is right* and *who has the authority* to decide on the interpretation the others must accept as *true*. Also international conflicts are embedded in language, with one side claiming to be correct, honorable, historically justified and blaming the other for their unwillingness to *share* this one interpretation. I do not want to give the impression of believing that all violence is solely based on language, but that much of it is evidence of the sharing metaphor at work in situations in which it doesn't fit. (*Krippendorff, 1988 : 264-5*)

The need for authority can also be recognized in the use of conduit metaphors. The similarity arises from the objectivity attributed to signs, symbols, information, etc., conceived of as flowing from one place to another. In expressions like "I am sending you a sign" ("this *is* a sign"), "this symbol means such and such," "this index points to something else," signs seem to function as stimuli if not as agents, regardless of whether anyone knows them and regardless of how someone choses to see them. Although semioticians maintain many distinction, for example between sign vehicles and referents and between signs whose referents are correlated by nature and symbols whose referents are established by convention, questions like "what does this symbol mean" can ultimately be answered only by an authority on the reality in which the symbol is assumed to exist as such. Questions like "what do you want this symbol to mean in your world" would not require such an authority but could also not be answered while believing that it is the symbols that flow.

Whereas the sharing metaphor explicitly expresses symmetry in social relationships while implicity fostering authorities to enforce the required commonality, the metaphor communication is control builds asymmetry right into the process of communication. It entails a conceptual distinction between two rather different worlds, the world of the controlled targets, receivers or audiences of communication and the world of the controlling agents or originators of communication.

Control metaphors render targets powerless. Faced by powerful speakers, strong appeals and compelling arguments, receivers are unable to resist the power of their influence. The powerlessness of the receivers of communications also is manifest in and may well be the result of the familiar subject-verb-object constructions in Indo-European languages by which we describe the "who says what to whom" of communication. These constructions assign objects passive roles and render subjects as agents, that is, in control of the action. Objects are the subject's tools. As tools in an instrumental chain of events, audiences are ideally

predictable, passively responding and anonymous. Since consciousness and will easily interfere with predictability, unconscious process, subliminal influences, and unreflected reactions provide the preferred foil against which audience responses are explained and successful communication campaigns are designed.

Communication is control makes the world of the controller appear rather differently. Agents, sometimes simply called communicators (for their passive audience does not really count), make rational decisions on the composition of messages. Based on complex premises and information about anticipated audience reactions, senders are seen as employing the very creativity, intelligence, and authority that the control metaphor denies to their receivers. Thus, the equation of communication with control privileges senders to pursue their own ends while denying the targets of communication similar capabilties. It renders communication as a means of domination.

The control metaphor leads its users, regardless of which side they might locate themselves, into the practice of seeing all communication as driven by interests and intentions. What is being said then can no longer be taken on its face value. It has to be regarded as potentially deceptive. Targets are then forced to "read between lines." to figure out underlying motivations and respond to the inferred intent of what is being said. The fear of being overpowered by arguments produces a suspicion that the originators of communication need to overcome by ever cleverer maneuvers, thus producing a spiral of distrust effectively preventing symmetrical human relationships to exist. For example, intimate relationships are immediately destroyed when one finds out that the other uses him or her as a means towards another end. Love cannot be accomplished by instrumental acts. Control can also ruin dialogue, through which two or more participants could conversationally enhance each others understanding of something.

A constructivist theory of communication

What lesson can we learn from an account of models and metaphors of communication? One traditional response would be a generalization, taking all of these ordinary language expressions to be mere descriptive variations of a single underlying phenomenon and the components they share to be the generalization sought. I am suggesting this to be a rather hopeless enterprise. Models, metaphors and other accounts of communication are so much tied to the context of their concurrent practices and the history of communication technology that abstracting from them the conditions that give processes of communication their social meaning would leave few commonalties worth stating.

Another traditional response would be to dismiss these models and metaphors as naive descriptions by an ignorant

public, as myths of what only qualified scientists can and must clarify objectively. Objectivity requires literal or operational accounts of a reality presumed to exist outside and independent of its observers. Subscribers of this view of science have difficulties including linguistically competent subjects in their theories, favour a natural science approach to communication, ideally physics, and are institutionally blinded to realize how much such accounts grow out of the richness of ordinary language expressions, including the models and metaphors of communication described in the foregoing. Naturalist theories of communication have enabled communication with space probes near Neptune and informed the vast technological infrastructure for communication in which we live, but it is the folk theories of communication, models, metaphors and myths that inform human communication practices and the actual use of communication technology.

Let me take the last sentence seriously and develop now a constructivist approach to understanding human communication.This will not be a general theory of communication but an epistemological framework for understanding the role models and metaphors of communication play in practices of communication. Epistemology is the philosophical discipline concerned with how we come to know (not _what_ we know) and the arguments I shall present are intended to be applicable not only to the models and metaphors discussed above but also to popular theories through which people in the mass media understand themselves and scientific theories that inform particular communication practices on account of the scientific authority of their inventors. I am organizing this effort in the form of six propositions.

First, <u>there obviously is no single phenomenon of communication that a model could describe or a metaphor could enlighten</u>. (a) The models and metaphors sketched above have arisen in the <u>context</u> of different received from a supernatural power to ordinary people, carrying written messages from one place to another, warring by arguments, controlling human behavior from a distance. The original conditions or the techniques that gave rise to these accounts did not exist independent of these accounts, may no longer be recoverable as such experientially and are in fact quite unimportant. It is the metaphorical use of these accounts that indicates how people conceptualize their world, what they are aware of and why they engage in particular actions. All human communication practices presuppose models or metaphors of communication and accounts of the latter inform the observable processes of communication. (b) Communication models and metaphors also have a <u>history</u> and one can safely assume that this is not only a history of communication media and technology but also a history of language use, social consciousness and cognition. Chiseling in stone, writing on papyrus or paper, printing, telephony, radio, television, computing technology could not cumulate the way it did without language and communication and the model and metaphors in use were both driven by and driving the evolution of human communication. (c) The multitude of

simultaneously available models and metaphors of communication do not merely provide alternatives, they constitute a complex ecology of interacting "species" cooperating and competing with each other, forming new metaphorical alliances, running themselves into absurdities, moving into defendable niches or substituting for each other; as when the container metaphor came to be associated with the conduit metaphor and entered even engineering accounts of communication as in the idea that signals carry information or noise. The entailments of some models and metaphors are more viable in interaction than others, but what brings them in contact, what creates their history, what makes them evolve, what brings them into practice, the home of this ecology is the human mind, cognition and communication.

Second, whatever we say, do and even are, we can only make sense of, judge and act upon the reality we see, our own perceptions. Although it would follow that I can speak only to myself, by using "we " in the above I wish to generalize my contention to others like myself, and this contention is that each of us, we always act according to what makes sense to us, each for him or herself, in the double meaning of "sense" of being available to sensation and of being meaningful, comprehensible and understandable. That action and perception constitute a circular causal feedback loop passing through an environment including other humans which controls neither our own movement nor objects external to us but our perception of them is the central thesis of William Powers' (1973) work. From the point of view of an outside observer, say a god, who may see a different reality than we do, we might be unwittingly saying and doing a lot of things to our surrounding, like unintentionally hurting others (consider that most sadists do not know that they are) or destroying the very ecology that created and sustains us as human beings (a hundred years ago we couldn't even see the relationship between technology and the necessity of other species coexiting with humans). Unless and until we are able to perceive connections between our actions and their consequences, we cannot act on them. Creating patterns that connect, explaining and acting on concurrent experiences, making sense out of otherwise disparate observations, all are acts of constructing our own coherent realities we end up seeing.

When we hear us speak, our speaking makes sense to us because we have constructed it that way. When we hear someone else speak, we are constitutively unable to make out the sense it makes to the speaker, but we can try to make sense of it as if the words were our own, as if we heard us say what we hear. Even when we seek to explain our interaction with others, it is we who see the other as responding to what we said or we who see us as responding to what they said. In other words, the sense we make in communicating with others always is our very own, albeit reflected through someone else. There is no way of objectively matching our understanding of something with someone else's. Understanding is personal and private. There is no way of experiencing cognitive sharing across individuals (except for a god with privileged access to the cognition of others). All

theories of sense making, for example, theories of conversational coherence, of what we look for or how we judge the coherence, appropriateness and meaningfulness of speech (for a summary see Craig & Tracy, 1983), or theories of gestalt perceptions, of how we preferentially pattern or organize our visual field, recognize that our cognition is constituted to construct coherent realities, or, as Heinz von Foerster says: "the nervous system is organized (or organizes itself) so that it computes a stable reality" (1981:306).

It follows that the communication we see happening is our own construction and can not exist without the active participation of our being. Sense making, understanding, knowing, constructing coherent realities including the pattern we invent cannot be carried outside of our own body, is subject-dependent (not to be confused with subjective) and requires us to take a position in our own constructions. We may never know what we actually do when we see us communicating with others but seeing whatever we say and do enables us to construct communication.

Third, <u>viable reality constructions are operationally closed but cannot exist outside a medium</u>. For an abstract example, when A causes B, B causes C and C cause A, then each causes itself by way of the others, is self-referential, has "its own life" as a whole and largely defies influence from the outside. If the range (or products) of a system's operation is contained in its domain (or operands), as is the case of the causal circularity, we say the system is operationally closed. Operationally closed systems can exist (be realized or experienced) only in a medium that supplies the energy required to sustain the circularity of the process and perhaps the matter to replace the components, should they fail, without interrupting its operation. Thus operationally closed systems have to be open to matter and energy. Operationally closed systems may also be subject to perturbations or influences from variables outside the system that affect the behavior of the components but are not knowable for what they are from inside. An information theorist would take pertubations to be noise. A system that retains its operational closure in the face of perturbations is considered viable, one that breaks down under its influence no longer is.

In the domain of human cognition, reality constructions are neither found inside someone's head, as solipsists presume, nor discovered outside the human body, as objectivists insist on, but reside in the operationally closed practices of systems living within their environment. Eyes do not see but allow perturbations to enter the circular organization of cognition to which they contribute. We can not see what reality is, we merely are conscious of seeing. The biologists Humberto Maturana and Francisco Varela (1987) equate operational closure with cognitive autonomy and suggest that the maintenance of cognitive autonomy in the face of perturbations is the most fundamental property of living systems. They also draw a distinction between operations that define the identity of a living system, particularly including the recursive ability to construct constructions, and operations that are

instantiated at any one time and determine responses to perturbations from the medium.

Communicating with someone according to any one model of communication is like driving with a roadmap through an otherwise unknowable terrain. By itself, a model merely delineates conceivable possibilities, like the road map on a bookshelf, and has no value until its entailments are set in motion for example by planning a trip. It is in the practice of driving that the reality constructions entailed by a map are unfolding. Experiencing no incoherences (between what we should see and what we do see) renders our reality constructions viable. So, it turns out possible to communicate with the Macintosh computer as if we manipulated documents. It is possible to keep believing we communicate with others by sending them messages as long as what we see happening as a result of our talking does not come to contradictions within our models of communication. Models of relality become non-viable when they lead to inconsistencies, contradictions or breakdown of the practices they entail. For example, when taking messages to be containers of entities, experiencing that the second reader of a newspaper is capable of taking contents out of a message that the first reader had already removed, we experience inconsistencies. Or, when taking communication to be control and applying it in interactions with a lover, since intimacy is premised on mutual respect, the better one controls the more one destroys the very relationship controlled for. There are of course many cognitive devices people use before discarding reality constructions that turn out non-viable in a given situation, for example, by not putting them to a test, by accepting injunctions against pursuing certain entailments, by limiting its use to situations in which they worked or by introducing qualifications. For example: maybe reading is more like making a mold for reproducing contents and putting the originals back into the message.

Fourth, <u>communication necessitates the construction of others complementary to the construction of self</u>. When two individuals chose to see themselves as communicating with each other then they can be neither solipsists by believing to occupy the center of their own universe and be superior to everything else, nor objectivists by seeing each other as structure determined machines differentially responding to objectively identifiable and hence observer-independently existing objects, symbols, messages, pictures, etc. What would be violated in the first instance is what Heinz von Foerster (1981:307) names the Principle of Relativity, which calls for the rejection of a hypothesis that holds for each of two separate instances but not for both of them together. The second instance amounts to a contradiction: one can not chose to communicate with someone and assume to be a structure determined system for the latter does not entail any freedom of choice. Accordingly, as soon as someone who claims the cognitive autonomy of constructing his or her realities invents someone else who claims the same autonomy for him or herself, the former can no longer remain singularly autonomous. Hence, for a constructivist whose reality resides neither in his

or her head nor outside his or her body but in operationally closed practices, communication with others entails a process of constructing others that are similarly capable of constructing their own reality including us as cognitively autonomous beings in it.

For constructivists it is a matter of ethics to endow others with at least the same cognitive capacities we employ in constructing them (Krippendorff, 1989). However, even at the expense of one's sanity, such an ethical imperative may not be consistent with all epistemologies or reality constructions and hence not practiced by everyone. For example, in a superior-subordinate relationship, such as in the military, both partners are expected to act out their respective roles and rely on the control metaphor to organize their communicative practices. Accordingly, the superior might be constructing her subordinate as her willing tool to get things done and the subordinate might be constructing his superior such that he has no qualms with surrendering his autonomy to her and empowering her by his compliance. In such a mutually agreeable asymmetrical relationship, communicators may not be aware of and are hence unable to fully realize their unalienable cognitive autonomy in constructing their own role and that of others, but, in order to communicate, it is indispensable that partners make assumptions about who and how the others are, that is, they have to recursively construct themselves and others.

With communicators always acting within their own reality construction, understanding someone requires that the constructions of the other be operationally complementary to the self. Besides the complementary roles that communicators might assume, like parent and child, buyer and seller, doctor and patient, law enforcer and criminal, entertainer and audience member, etc., [incidentally in anyone's reality construction, none of these complements can exist without the other,] complementarity governs everyday discourse as well. If we ask a question and receive an answer that makes sense to us, we might not learn much about the other's reality but that our own constructions of us and the other are complementary in effect. If our issue is one of control and we succeed in influencing someone, we might not know why this someone complied and are, hence, relatively free to hold any of a wide range of constructions of the other except that they must all be constructed complementary to ours, at least within the domain of the other's acquiescence. Ernst von Glasersfeld is saying the same by suggesting that constructions must "fit" their environment, using the example of a key that opens several locks but may not fit all (1984:21). Since we here compare two constructions, both of which are invented and practiced by a cognitively autonomous communicator, understanding requires that these constructions fit like hand in glove, like the key in a lock, and are complements of each other. Just as there are many gloves that may warm a hand, there may be many equally complementary constructions to any one self.

Fifth, <u>language use constitutes social reality and, specifically, communication recursively establishes itself in a medium.</u>

Besides the familiar descriptive and persuasive functions attributed to language, its role in creating social reality is largely ignored yet most important for understanding communication. To speak of "social" reality is not to invoke a distinction between a natural and a human-made world or culture, but to recognize that there are individual experiences we might have difficulties expressing, or cognitive constructions that arise without reference to language or communicate with other humans. I suggest, however, that such instances are rare. Most of our knowledge is acquired with language use, in communication with others, and is, hence, social. "Constitution," is a definition from within the phenomenon being defined. The recognition that language could be constitutive of social reality, that is, that it is an intrinsic part of the reality it defines, goes back to Ludwig Wittgenstein (1958) who developed the notion of language as a game speakers are engaged in and insisted that words are deeds as well. J.L. Austin (1962) added to this the concept of performatives, that is, utterances that do what they say, like promises, commitments, declarations, etc. For example, when a priest in appropriate circumstances addresses two people by saying "I declare you hereby married," this makes the man into a husband and the woman into a wife. It commits the couple to using these labels and thereby makes the complementary relationships between them and the larger community witnessing this constitutive practice happening. It does what it says.

Indeed, Ayatulah Khomeini's mere declaration of The Satanic Verses as a blasphemy made it so, not just for him but also for all those followers who held compatible reality construction, causing rather real violence to happen, booksellers fearing terrorist attacks, and the British government having to protect the author. Incidentally, Khomeini's use of language has a history that goes back to the 12th century Persian ruler Hasani Sabbah, who founded the order of the Assassins, based on the knowledge that the very threat of murder can be as disabling as its execution. A man who fears that he may be killed often is no stronger than a man already dead (Iyer, 1989). But one neither needs to look so far in the past, nor go to such extreme examples, therapeutic interventions ("I feel O.K."), political agenda setting ("the real issue is..."), self-fulfilling prophesies ("we shall overcome...") blaming someone a criminal before trial, etc. provide ample examples for how the timely assertion of something can make it real for those to whom the use of that language makes sense.

The claim of the existence of complementarities, the claim to know and be able to use or talk about others' knowledge, the claim to communicate with someone can only be upheld through discourse and experienced in the coordinated use of language, like in a Wittgensteinian language game, mentioned above. It is not the act of uttering the work "blasphemy" alone that makes Rushdie's book into one, but that seemingly everyone thereafter can be heard as using the word in the same way, agrees with its entailments when asked, gets violent with someone unwilling to apply it in the same context, etc. To explain the

constructivist basis of social reality, John Shotter (1984) advanced a social accountability thesis. When talking, we always act in our own reality construction and use models and metaphors or language that make sense to use. When talking to others, whom we endow with linguistic competence and cognitive autonomy as well, we can no longer act in reference to separate constructions of us and of them, we have to be cognizant or open to the possibility of being judged and held responsible by others for what we say, how we say it, and the sense it makes to them. This expectation is a necessary consequence of our construction of others as linguistically competent communicators. Traditionally, social reality has been explained in terms of conventions, as if there were objective rules someone had made up for everyone to follow. As Shotter notes, it is because rules of conduct are inventions, entail expectations for the conduct of others (not necessarily "shared" with others) and can be complied with or broken that we construct our own talk in view of the possibility that our linguistic competence is being questioned. Speaking, constructing others, social accounting practices, concurrent everyday behaviors, form a loop that coordinates linguistic practices and maintains complementary reality constructions.

A good example is the metaphor "head of the household" it brings experiences with living organisms into the domain of a family. In popular biology the head is believed to be a special kind of bodily member. It houses the brain, it is where decisions are made, and removing an organisms's head leaves the remainder unable to function. Applied to a family this organism metaphor designates one member as the most important one, the only one that counts, the only one in charge and on whom all others depend. Using such a metaphor within the context of a family without objections coordinates its members' behavior relative to each other. When an interviewer knocks on the door and asks to speak to the head of the household, everyone knows who he is. With this metaphor in use, nobody could venture to suggest that the hands and feet of the family would have the mental capacity worth interviewing as well. However, a linguistically aware feminist, for example, might object to the use of this metaphor and refuse to go along with its entailments. This would challenge the individual reality constructions manifest in the use of this metaphor and could set in motion a process that may end up with a different metaphor for the family and a socially more acceptable coordination of linguistic practices, a new social reality.

Models and metaphors of communication play a special role in constructing relationships between people.
(a) They are expressed in language and their coordinated use constitutes social realities as elaborated in the preceding.
(b) They are about, describe or organize particular social relationships, that is, relationships of communication, whether these are constructed as a problem of transporting messages between different places, as warfare among discussants, as control of audience behavior. But, unlike models of technology or metaphors of family organization,

(c) to be about communication, they must also be communicated as well and thus constitute the very practice they are about. Models and metaphors of communication entail their own practices, are applicable to themselves, are autological, can establish themselves in the medium in which they are practiced and persist as verbal accounts of communication as long as they remain consistent with their own entailments and unchallenged from their outside. Within the constraints inherent in their medium, communication theories, models and metaphors can "run their own show" through the recursivity of their own construction.

I want to include scientific theories of communication here as well for these too are stated in language, are about communication and must be published or communicated, often to the very population whose communication practice they attempt to describe or claim to generalize to. People have the capacity to object to them, do the opposite of what they predict, comply with them or accept them as standards for their own behavior. The creators of communication theories also can be held accountable for their communicating them and may be challenged to take responsibility for their construction. Thus scientific theories of communication too establish themselves through the practice of communication they are capable of constituting in a medium.

Although theories, models and metaphors of communication are self-applicable or autological in the above sense, a particular medium may disable their practice. For example, while the one-way medium of film can depict the many-way communication within a family, the medium of film disables the kind of interaction with its audience it shows. Taking experiences with television communication as model of communication in a family just does not work and its generalization forced on what are in fact two situations becomes futile. It would also be difficult for scholars doing research about communication among illiterates to embed their written discourse in the discourse they analyze. Often, self-application of notions of communication is avoided for fear of being held accountable for the potentially self-invalidating incoherences between theory and practice, for example, by giving statistical generalizations of communication practices excluding the one used to present the results of the inquiry.

When incoherences are experienced between communication practice and theories, models, metaphors and other accounts of this practice, this can create disabling paradoxes, pathologies or breakdowns of social relationships. The command "disobey my command" makes its addressee either oscillating between obeying the command and therefore disobeying it and disobeying the command and therefore obeying it or declaring the speaker incompetent and leaving the scene. Or, saying, perhaps in anger, "I am not talking to you" does what it denies and, while the paradox it creates might not really freeze anybody into inaction, it certainly terminates a conversation. More problematic are examples of paradoxes that, because they or their

recursive construction are not recognized as such, lead communicators to create pathological reality constructions. Gregory Bateson's notion of a double bind (1972: 201-227) originally developed to explain schizophrenia formalizes these incoherences. A double bind requires (1) two or more persons, (2) repeatedly experiencing (3) a primary injunction like "if you do so and so, I will punish you," (4) a secondary injunction conflicting with the first but on a more abstract level like "do not construe this as a rejection, I do this because I love you" and (5) a tertiary injunction that makes it impossible to escape the scene, for example, a mother-daughter relationship in which this communication takes place. Demanding caring, controlling for intimacy, formally requesting informality of communication, using one way communication from a lecturn to call for interactive engagement, are other examples of incoherences that can lead to disabling situations, paradoxes, and breakdowns. The recursiveness of communication, definitions of social relationships in terms of communication, communication about communication, communication about communication about communication, etc. develop into realities of their own. Incoherences here can become disabling.

Sixth <u>communication mediates a trialectics between cognitions, interactions, and institutions</u>. Cognition is the process of constructing the realities we see, interaction additionally involves the construction of others, including the language and technology through which they interact, and institution is the construction of super-individual networks of interaction which we tend to objectify for lack of adequate understanding, for example, by attributing legal status, personalties, and supernatural powers to them. Cognitions, interactions and institutions cannot exist without communication and all three are involved in a circular, over-all recursive, mutually stabilizing and potentially self-sealing construction of social realities.

Take the metaphor communication is sharing as an example. As a metaphor, it is expressed in language. When used in the practice of communicating with each other, it becomes both a cognitive phenomenon and one that informs interactions among communicators as might be observed by a third party. As argued above, this metaphor presupposes the existence of an objective universe, that is, a single observer-independent reality including message contents that users of this metaphor believe can be gotten from that message. I have also shown that the sharing metaphor entails painting the experience of disagreements or mismatches between interactions and receptions among different interpretations of a message as transmission failure or communicator incompetence. It institutes authorities whose privileged access to this reality assigns them the power to mediate what turns out to be conflicts in reality constructions. Institutions that routinely settle disagreements, whether these be legal systems, science, government, or mass media journalism, also thrive on them and naturally promote those metaphors that give them the kind of status members of these institutions enjoy. Thus, cognition, interaction, and institutions co-develop into

coherent cultural complexes. In the case of communication is sharing, the metaphor subverts the cognitive autonomy of its users while developing increasingly powerful institutions that, because they thrive on this metaphor, also have an interest in probagating its use.

The metaphor of communication is control is involved in a similar trialectics. As elaborated above, the metaphor reflects a cognitive construction involving active communicators and passive targets that reduce to tools whose performance is ideally predictable and deterministic. Tools can not have a mind of their own. They must serve their master. The metaphor ultimately supports rational organizations, a technology of manipulation and institutions that facilitate the interaction between controller and their targets. This includes the vast communication industry and all those scientific efforts that render communication more effective and audiences more predictable. In turn, these institutions not only live on this metaphor but also promote it through the actions of their participants thus closing the circle. Cognition, interactions and institutions define each other, sustained by the fuel the metaphorical use of language provides.

Cognitions, interactions and institutions also imply three positions among which individuals can choose and may alternate in viewing their own reality constructions. Let me call the roles associated with these positions becoming, observer and subject, respectively.

diagram of three positions
here

A becoming does nothing more than exercising its own cognitive autonomy, continually constructing, deconstructing and reconstructing its own realities, its own ecology of mind. Viewed from this position, communication is neither directed to achieve external objectives nor responsive to "forces" seen as coming from outside but seen as directed towards understanding the self. Becomings continuously realize themselves through their own construction and maintain their viability while being active and alive. Becomings can unknowingly entrap themselves in their own construction or emancipate themselves from it by taking positions from which the self can be seen, de- and reconstructed.

An observer is concerned with constructing and seeing realities other than the self. The observer's intervention into the observed, including humans and tangible objects populating the observed reality, directs this constructive process. Although the position of an observer always remains within that observers' own reality construction and therefore does not absolve that observer from the responsibility for creating it, taking an observer's position merely implies that the construction of the observer's self is not at issue at the moment and communication is observed to be between communicators other than the

Abb. 8: Die drei Positionen der Individuen in ihrer Wirklichkeitskonstruktion

Kognition   Interaktion   Institution
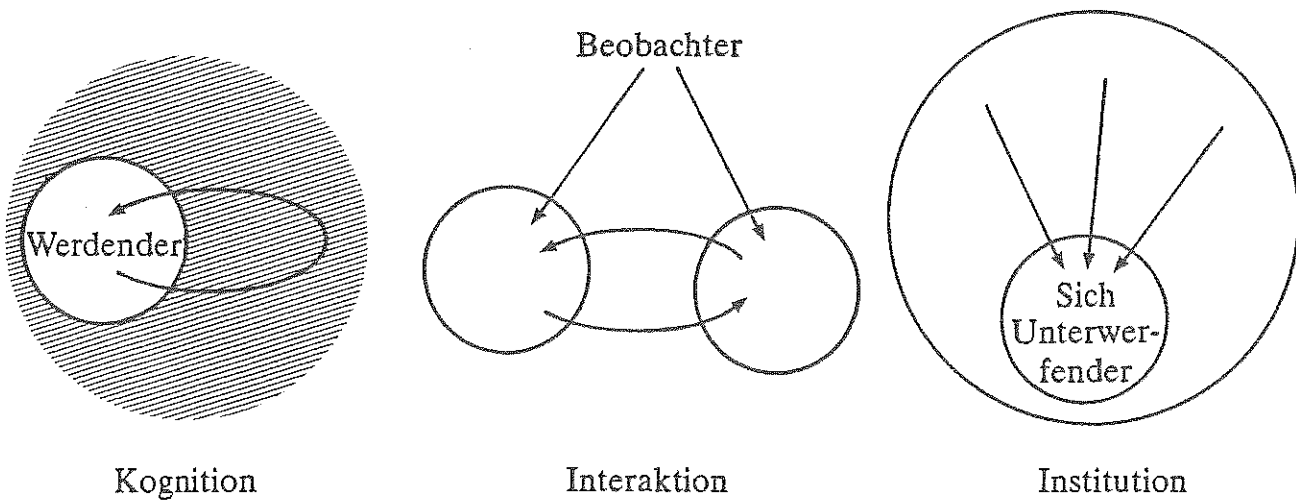
observer. Observer positions are typically taken by scientist, are characteristic in the process of engineering technology and associated with the role of controllers.

A subject sees him- or herself as part of a larger whole, as part of a social organization, whose reality is constructed as well but neither at issue nor in doubt. Taking the position of a subject entails submission to a super-individual, super-natural or extra-individual reality and adaptation to the constraints, rules and obligations that arise out of partaking in this presumed externally constituted whole. Denying the constructed nature of social institutions and submitting to the powers unknowingly attributed to them does not contradict the notion of a constructed reality, but one thought to have been constructed by others (including by ancestors and gods), one for which one is not willing to take responsibility, one to which one has to adapt or one that must be coped with as is.

Individuals can change the positions from which they view and construct their realities. For example, to maintain a sense of self in interpersonal communication, it is important not only to be able to see others, but also to see oneself through the other's eyes, that is, shifting the position of a becoming to that of an observer of this becoming (even so all of these take place within ones own cognition) and back.

The three positions individuals may take also distinguish between fundamentally different approaches to communication theory construction. From the position of a becoming, communication theory takes the form of a theory of communicative competence, that is, a theory that accounts for how individuals maintain their cognitive autonomy in the face of perturbations or their ability to invent reality constructions that remain viable during continuing processes of deconstruction and reconstruction or interactive unfolding of these constructions. From the position of an observer, communication theory becomes a theory of transmission, or a theory of the media of communication, that is, a theory that accounts generally for how individuals (other than the observer) coordinate their lives relative to each other or more specifically for how pattern at one location become transformed into pattern at another location. All communication technologies, most scientific theories of communication, Shannon's mathematical information theory for example, and the definition of communication I started this paper with are framed from the position of an observer. In contrast, from the position of a subject, communication theory is seen as a theory of communicative authority, that is, a theory that accounts for the conditions under which individuals objectify and subordinate themselves to the constructions of which they see themselves a part. Such a theory is concerned with why individuals are willing to submit themselves to powerful institutions, comply with supposed conventions, feel forced to accept rational arguments as compelling or see the need to adapt to an observer-independent external reality they have constructed as such. In the domain of

mass communication, for example, communication effects may be explained in terms of the journalistic authority of newscasters, the artistic authority of popular entertainers, the political authority of government officials, the scientific authority of researchers (who claim to have access to truths ordinary people have not), the legal authority of judges, etc. Subjects, unaware that they are the victims of their own constructions, see themselves as having to adapt to given institutions, interactional histories and the reality of others.

Some observations towards understanding mass media.

In the literal sense, the media of communication are trivial: the sound waves in the air for speech, the modulated light reflected from uneven surfaces for perceiving images and reading text, the embossing of braille, the chemistry of ink, the wave-like quantum movements of electrons in copper wires for technologically mediated phenomena, the magnetic properties of matter in core memories, tapes and disks for computations. To say they are trivial is not to denigrate the tremendous technological advances by engineers and applied physicists in making more and more media available for different kinds of transmission tasks and weaving them into remarkably efficient systems for communication. Media so conceived merely constrain some and enable other human communication practices. They provide channels at best but can not discriminate pattern within them: the telephone accepts any spoken language, television can transmit any image the human eye can distinguish, and computers can do anything that can be stated algorithmically. Within certain constraints, the media of communication are structurally neutral.

Yet, when we speak of media, we rarely use the word in the above literal sense. We mean something quite different from what could be explained without reference to cognition, by physics or objective measurement, for example. Pattern, to which the broad definition of communication in the beginning of this paper referred, are cognitive phenomena and so are connections among pattern. There literally is no way of sending messages through the air or having signals carry information through a copper wire. Literally, this kind of communication is impossible. It can be regarded as a myth for neither air nor copper moves while being relied upon in communication with others. In electronic media there is no container with content either and one could discard this metaphor as a myth as well. But it is precisely these myths that define human communication practices for we obviously can conceptualize communication that way and quite successfully act as if it would proceed so in fact. Understanding communication therefore can never be the same as understanding its underlying physics, for example. From the perspective of physics, media merely enable a wide range of human communication practices. The actual processes of

communication that someone may observe always is grounded in the cognitive constructions of communication and reflected in the use of language, in the models, metaphors and myths used in realizing practices of living together within available media. Since speaking about communication always already demonstrates the constructive involvement of the speaker in his or her own constructions of communication, models, metaphors, myths, and other linguistic constructions of communication used in this process provide a convenient if not the only entry point into this recursion.

In speaking about the mass media of communication, one can hardly overlook the linguistic practice of constructing them as institutions, as socio-technological complexes with super-individual powers. Let me suggest five challenging theses that wrap up the constructivist approach to communication I have been developing till now and show the mass media as special kinds of constructions worth exploring. I am suggesting:

(1) As institution, the mass media constitute themselves in the very social realities they create to thrive in. This is not entirely unique to the mass media. For example, the institution of law brings forth both law enforcement agents and the criminals it pledges to bring to trial. The institution of education brings forth both teachers and the students it seeks to prepare to knowledgeably function in society. The institution of the military creates conditions for war to arise, etc. As an institution, the mass media bring forth social realities in which audience members, entertainers, journalists, network owners, and technicians cooperate as participants, as stake holders, reproducing models and metaphors of communication that are practiced by and with all participants playing supportive roles. What makes the mass media different from other institutions is that they are the very means of constructing social realities, not just their own. All institutions rely on some kind of communication to constitute themselves in the cognition of their participants. But the mass media constitute themselves in the communication practices of virtually all people. They own the means of constituting themselves and other institutions and may hence be more autonomous, self-directing and central in society than other institutions.

(2) The mass media constitute themselves at the expense of its participants' cognitive autonomy. This is not entirely unique to the mass media either. As constructions of superindividual entities, all institutions demand from their individual constituents some submission to the requirements of their constructed existence. In fact, all institutions exist only to the extent participants see themselves as subjected to them. This may scarcely be apparent when consensus or contractual agreements are an issue, but becomes evident in the loyalties commanded within organizational hierarchies. What makes the mass media so different from other institutions is their overwhelming communicative authority: (a) the mass media are able to assemble talent, control journalistic practices, commission scientific research, apply communication technology, and command economic

resources to produce communications that no individual seemingly can. (b) The mass media involve masses of anonymous viewers, listeners, readers, some of which participate as managers, others as performers, but all engage in communicative practices that preserve the viability of the social construction of the mass media institution. And (c) the mass media are able to make everyone believe to have equal access to an objective reality ("seeing is believing"), a reality they are in fact in the business of creating. All three of the manifestations of the mass media's communicative authority, but particularly the claim to have privileged access to a reality largely denied to individuals, institutionally blinds its participants against realizing their own cognitive autonomy more so than any other institution can.

(3) The mass media operate in an ecology of models, metaphors and myths but support only those that do not threaten its viability as an institution. Models, metaphors, myths, and other linguistic accounts define a space within which society with all of its institutions can cognitively and linguistically operate and within which practices of living demonstrate particular realizations (which are taken as real at any one moment). As a constitutive part of society, the mass media are far from neutral in defining this space and showing particular realizations of communication. Having to be socially accountable for what they say, like all communicators are, the mass media create spaces of possible reality constructions in which their own activity is not likely to be questioned. Ideally, the kind of realities that accomplish widespread aquiescence (i) are easily accessible and imaginable by nearly everyone, can fuel ordinary conversations and enable imitations; (ii) recursively create and feed existing dispositions, elaborate on what everyone already knows and believes in and amplifies social stereotypes or prejudices; (iii) has few recognizable practical consequences like television games, entertainment and fiction, and makes the latent consequences difficult to ascertain, like the long range effects of inducing fear through news coverage of violence, food poisoning and mass consumption, or of creating expectations through political or commercial advertisements, like the notion that everything can be bought with the right kind of money; and finally (iv) generate their own industrial and political support through which the mass media are being funded. Thus, what we come to know through the mass media, the social reality constructed therein is mediated by the role the mass media create for themselves in interaction with the other institutions of society, none of which can escape operating in the same ecology of models, metaphors, and myths of communication the mass media selectively support. The institutions in society are increasingly and surreptitiously monopolized by what the mass media do.

(4) It is a manifestation of epistemological ignorance or institutional blindness when social scientists interested in human communication become habituated to a particular definition or model of communication and then proceed to describe their observations in its terms without awareness of the constitutive processes any such conception can set in motion. Even

scientific definitions of communication grow out of ordinary language use, albeit unwittingly, inform ordinary and institutional practices of communication and are in turn played back into the ecology of models, metaphors, and myths of communication culturally available. Settling on a single conception (this paper started out that way as well but then overcame this starting point) is especially suspect if the definition adopted supports and stimulates a particular institution, a particular technology, or a particular socio-political class at the expense of others. Overtly and as an institution, the mass media are constituted in the practice of one-way communication: the presentation of entertainment, journalistic reporting, and educational instruction. There is no significant interaction. The feedback received through audience research and effect studies largely remain hidden from public view and so is the selling to advertisers and political groups of knowledge about and access to the audiences the mass media do attract. With effects being carefully monitored by the mass media, the metaphor communication is control fuels the mass media economically. In view of mass media's cultural dominance, it is not surprising albeit unfortunately so, that the dominant scientific models of communication are one-way, terminate in desired effects, aim at avoiding transmission errors, improve the predictability of audience behavior and thereby provide the scientific basis for optimizing control. Harold Lasswell's famous formula for communication research "who, says what, in which channel, to whom, and with what effect?" (1948) is prototypical. It subordinates communication research to the dominant institutional practices, and elaborates concepts of communication that sustain the mass media of communication as already instituted. It ignores the simple experiences that communication theories are not merely about but also create the realities they claim to describe and bring forth communication practices coherent with their construction. By compliance with institutionalized conceptions this kind of communication research only strengthens mass media practices and fosters compliance with them as an institution.

(5) Human communication in general and the mass media as an institution in particular are socially constructed. The understanding of both is impossible without references to the cognitive involvement of communicators who construct each other as such and the institution to which they submit themselves as participants. Expressing and practicing these constructions takes place in the use of language or discourse. Literally, communication media are structurally neutral and offer at best trivial insights about communication. I argued that sending messages through copper wires, for example, is a myth but one that must be taken as seriously as it is believed in and acted upon. It is the linguistic use of models and metaphors of communication that inform human communication practices and offer an entry into the recursive construction of communication. The data for understanding human communication therefore reside in discourse with language providing a device for generating change. The radical constructivism (Glasersfeld, 1984), social constructionism (Gergen, 1985) or cybernetic epistemology (Bateson, 1972;

Krippendorff, 1989) does not only practice the above but also applies it to scientific research, makes researchers aware of their own cognitive involvement in creating the very object of their study while studying it and in participating in the constitution of institutional practices. It does not propose a particular theory of communication but provides a scientific <u>framework</u> for understanding communication practices. It lays the foundation for a <u>critical</u> approach to communication research by being less concerned with describing what is rather with constructing what could be and then explaining which possibilities are not realized and why (Ashby, 1956; Bateson 1972: 399-410). It calls on communication researchers to practice their <u>cognitive autonomy</u> in the construction and communication of theories and to take social <u>responsibility</u> for the intervention in the practices of living any publication of scientific research ultimately entails. It also has <u>ethical</u> implications by suggesting that researchers endow the communicators they theorize about with at least the same cognitive abilities they themselves employ in constructing them and avoid the construction and communication of pathologies of communication (of which the mass media may turn out to be an example). This is a radically self-reflective proposal for understanding human communication.

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