

## **The Emergence of the Communicative Value of Silence**

Within traditional theories of communication the silence is often devoid of any communicative value. When the latter is taken into consideration, it is viewed as depending on the intentionality of the agent producing the communicative act. Unfortunately there are diverging opinions about the role to be attributed to intentionality. Moreover, its detection by the receiver is often difficult or impossible, a circumstance which prevents from building a theory of a number of interesting communication phenomena. We hold that the previous problems can be dealt with by resorting to a systemic view in which communication is nothing but a macroscopic phenomenon, emergent from the interactions between elements of a communicative system. This perspective allows to introduce the methodological tools of Systemics to better describe all kinds of communication, grasping their emergent meanings. Only in this way the emergent communicative value of silence can be detected. Such an approach is endowed with a strong potential usefulness when dealing with the communicative interactions within both small and large organizations.

## 1. Introduction

Human communication is characterized by its *multidimensionality*, stemming from its cognitive, social, cultural, economic, political implications, as well as from its close interconnection with human actions. This implies a plurality of different approaches to communication, each one emphasizing specific features, as a function of particular goals and disciplinary competences. For this reason we still lack an universally accepted definition of communication and this fact gives rise to a confusion about this subject, which makes difficult any attempt to transform theoretical statements into practical applications.

Historically, all attempts to build a general theory of communication have been dominated by two main influences: the one of Shannon and Weaver's traditional *Information Theory* (1949) and the other based on the psychological perspective introduced by Watzlawick and his coworkers (Watzlawick *et al.*, 1967). However, they were pushing towards opposite directions. As regards Shannon and Weaver's approach, it undoubtedly offered a firm theoretical basis to the study of communication, being deeply grounded on classical statistical thermodynamics. Its shortcomings derive from the fact that the latter theory entails a strictly unidirectional view of communication process, described as a signal flow from an emitter to a receiver through a medium. Within this context most aspects of human communication are lost. For instance, silence, being coincident with absence of signals, does not communicate.

Watzlawick's psychological perspective tries to remedy the flaws of previous approach by introducing the concepts of *intentionality* and of *behavioural interaction*, so as to include within the category of communication processes all behaviours occurring within a given interactional context. However, while this approach allows to account for a number of

important communication processes, impossible to describe within Shannon and Weaver's theory (this time silence is a form of communication), it fails to give a precise definition of communication. And such a circumstance, in turn, prevents from building a useful theory of communication, as even the subject of this theory cannot be defined. We thus arrived to a sort of *impasse*: while, relying on principles of classical physics, almost nothing is communication, on the contrary, relying on psychology, all is communication. In such a situation, all theorizing about communication risks to be useless, being poorly grounded even the starting point of all arguments.

In this paper we hold that a way for sorting out from such an unpleasant state of affairs is to adopt a truly systemic view. Within it, communication is identified with a macroscopically emergent process, coming out from the interactions occurring between the elements of a *communicative system*. Thus, differently from Watzlawick's perspective, it is not true that all is communication. Communication is viewed as occurring only when there is an emergent meaning, associated to behavioural acts, shared by the elements of the communicative system. The study of communication processes thus becomes a particular chapter of a more general theory of emergence, when applied to systems of interacting agents. And this fact allows to take advantage of methodological tools of Systemics and of theory of emergence. In this way it would be possible, for instance, to detect the cases in which silence communicates and the ones in which, instead, the latter is a form of miscommunication. While aware of the intrinsic conceptual limitations of most tools of this kind, we feel they could be useful in a number of contexts, including therapeutic, educational, and even organizational ones.

This paper will be devoted to a discussion of arguments supporting this view. We will choose as a privileged context the one of silence, because within it the shortcomings and advantages of different views are easier to detect.

## 2. The role of intentionality

At a first sight the simplest way for overcoming the *impasse* described in the previous section would seem the one based on a suitable generalization of Shannon and Weaver's theory. To be more precise, the latter would consist in endowing the emitter with a cognitive system, including, among the other features, the *intentionality*, that is the presence of goals, not only driving behavioural acts, but also shaping its communicative behaviours (see also Searle, 1983; Dennett, 1987). If we suppose the receiver equipped, in turn, with a device able to detect the intentionality of the emitter, it is easy to understand that in this way it would be possible to grasp the communicative meaning of all behavioural acts of the latter. Of course, the correct operation and the reliability of this device would be critical in the cases of non-verbal communications, and mostly in the case of silence, as verbal communication offers a number of greater number of cues for detecting intentionality. In this regard, it is very easy to make examples of situations in which detection of intentionality allows to grasp the communicative meaning of a silence. The cases of the restaurant and of the airplane introduced by Watzlawick and coworkers are now famous:

The man at a crowded lunch counter who looks straight ahead, or the airplane passenger who sits with his eyes closed, are both communicating that they do not want to speak to anybody, or be spoken to, and they neighbors usually "get the message" and respond appropriately by leaving them alone [Watzlawick *et al.*, 1967: 49].

“I do not want you disturb me” is the message the silences of the man at the table and of the airplane passenger seem *to shout*, without any possibility of misunderstanding for “their neighbors [who] usually “get the message”...”.

It is to be remarked that the role of intentionality as a distinctive feature of communicative acts has been emphasized by a number of authors. For instance, it grounds Berne’s transactional analysis of psychological processes (see, among the others, Berne, 1964; more recent accounts are contained in Stewart and Jones, 1987, and in Thaler Singer and Lalich, 1996). In turn, Miller and Steinberg (1975) hold that every human communication, whatever be its nature, is *per se* intentional, being finalized to elicit an answer or, in general, to influence the potential receiver. Whence, in absence of intentionality, the communication itself would be impossible. The introduction of intentionality, however, raises a number of problems, which can be shortly listed as follows:

- 1) what is intentionality? How to find a reliable psychological definition of this construct?
- 2) How to detect intentionality? What are its cues? What cognitive-emotional processes allow us to detect intentionality? What is the neurobiological basis for these processes?
- 3) Is intentionality a unitary construct? Could we distinguish between different kinds of intentionality, as already proposed by Grice (1975)?

So far, almost all previous questions appear as unanswered and it seems highly probable that answering them will require a lot of theoretical and experimental work. In order to cope, at least in a partial way, with these difficulties Buller and Burgoon (1994) introduced a theory of communication including, as a crucial element, the *perception*, by the receiver, of the intentionality of the emitter. In other words, a communication would occur only if two conditions are simultaneously met: the emitter having the *intention* of communicating (and

concretely revealing such an intention), and the receiver *detecting* such an intention. This perspective entails that, in absence of explicit cues of emitter intention of communicating, the receiver can *attribute* communicative processes to the emitter, but cannot properly define them. In other terms, we should not have a true communication. Likewise, when the receiver does not detect the emitter intention of communicating, even if the latter can be clearly detected because declared in an explicit way (or observed by other persons), we still lack a communication, but we are only in presence of an *attempt* to communicate. Finally, when both the intention and the detection of it are absent, we are not in presence of communication but, in the best case, only of simple *behaviours*.

Though interesting, the proposal of Buller and Burgoon is unable to account for a number of situations in which communication actually occurs, even if, according to the previous criteria, it would be absent. Let us consider, for instance, the case in which two old friends quarrelled. One of them, feeling himself offended by the other, remains silent when the other, trying to make it up with him, talks to him again and again. The communicative meaning of the silence is, in this case, evident and well understood by both persons. It means: "You offended me. Notwithstanding I would like a reconciliation. However, to reach it, you must make a strong effort and try many times to apologize". However, according to Buller and Burgoon criteria, in this situation we should have complete absence of communication.

A seemingly opposite case is the one of a firm in which there is a previously designed communication channel allowing an interchange of information between the management and the staff. If technical information flows in both directions along this channel, Buller and Burgoon would conclude that we are in presence of a communication between management and staff, as their conditions for the occurrence of a communication are trivially met.

However, if the employees are unsatisfied, their performance is low and firm productivity is scarce, we should conclude that there has been no true communication between the management and the staff. Namely each one of them is unaware of the needs and feelings of the other. And surely this is a situation in which the firm is running the risk of a sudden collapse, probably in absence of evident premonitory cues.

To conclude this section, we remark that Buller and Burgoon proposal, while suited to describe a number of highly simplified communicational processes, appears as inadequate when we deal with complex interactional contexts such as the ones sketched in the examples made above. The difficulty seems to derive from the fact that, even within their perspective, the communication still continue to be viewed as a unidirectional process, in the Shannon-Weaver sense. In the next section we will try to show that, by abandoning the postulate of unidirectionality, we could build a more realistic theory of communication.

### **3. A systemic view of communication**

A systemic perspective of communication entails, as a first step, that all elements (emitters, receivers, but even external observers) involved in communication processes be considered as belonging to a unique *communicative system*. This step, however, is not enough. It must be followed by a second step in which we take into account that every element is endowed with a cognitive system, allowing him/her to interact with other elements. These interactions, in the specific case of communication, are mediated by the exchange of *signs* (words, letters, gestures, behavioural acts, and even poses and attitudes, such as being silent) which, in turn, can trigger in each element of the system a process of *inference* about the possible meaning of each sign or of a constellation of signs. Within a communicative system the inferences made by the single elements constitute a sort of net, as each inference can influence (and

modify) another inference made by the same or by other elements owing to the behavioural acts ensuing from inferences themselves. In short, this net allows a *circulation of inferences* associated to a change with time of net global and local state.

The global equilibrium states of this net, emergent from the interactions between elements, allow the existence of a *meaning* of signs, shared by all elements. This is the situation in which we can speak of a true communication, vehiculated by signs themselves. Therefore communication appears as a macroscopic, global process, which can be defined only in relation to a whole system, rather than a unidirectional, single-channel, relationship between emitter and receiver. In this regard we remark that just the phenomenon of silence can help to understand this new perspective. We already dealt elsewhere (Penna, Mocci, 2005) with silence as a *communicative phenomenon of systemic nature*, showing that it becomes meaningful only if occurring within a system in which the circulation of inferences gives rise to the emergence of a global meaning.

We remark that in this way the problem of defining and detecting the intentionality of a single agent is entirely avoided, Namely the whole communicative system includes not only the actual and potential communicating agents, but even their possible relationships, behaviours, attributes, expectancies. The intentionality, the sharing of meanings, the awareness thus become emergent systemic properties, *distributed* within the system itself, and not always detectable when observing a single element or a single behavioural act.

It is to be stressed that our perspective is based on a pragmatic view, which takes into account essentially the observable interactions and behaviours taking place within a given communicative system. This allows, in principle, to introduce qualitative and even quantitative tools of systemics and of theory of emergence to describe, and sometimes forecast the time evolution of a communicative system. Owing to such a circumstance the

systemic view of communication sketched above appears as endowed with potential usefulness in a number of applications. An example is given by medium or large organizations, whose operation and performance is crucially based on the nature of processes of communication acting inside the organization itself and/or relating the latter to the external social/physical environment. In these cases the existence of well defined structures as well as of a large number of agents and of interactions allows the introduction of specific system-theoretical models, which could be very useful to describe the state of communication system taken into consideration, assess its evolution and its role within the organization.

#### **4. The methodological tools useful to study the emergence of communication**

Before discussing the methodological tools available within emergence theory we remark that two main views of emergence are possible: the one based on an *external* observer, and the other based on an *internal* observer. The former, borrowed from physics, assumes the existence of an observer which is external to the system itself, and can interact with the latter through both physical and mental operations. While physical operations can be synthetically qualified as *measures*, mental operations consists mainly in selecting (for instance measurement outcomes, relevant variables, and so on) and performing symbolic processing (typically through models describing the system under study). According to this view, interactions can induce changes both in the observed system and in the external observer (even modifying its mental operations). In the case of systems following the laws of classical physics these changes are very small and can be neglected while, in the case of quantum systems, can be dramatic. However these changes cannot produce a breaking of the barrier separating the system from the external observer: the latter will never become a part of the

system under study. On the contrary, the view based on an internal observer (the most prominent supporter of it is R. D. Stacey; see, for instance, Stacey, 2001; 2003; 2005; 2007) assumes from the starting that the observer is a part of the system itself. Within it, therefore, we cannot speak of cognitive systems endowed with autonomous existence independent from the interactions taking place within the system which individuals and observers belong to. Nor traditional models can capture the essence of self-organisation processes occurring within the system. Namely none of members of the system can go outside the system to have a general overview of its evolution, eventually in order to control it. All a member of a system can do is only to interact (in a local way) with other members, and this same interaction underlies the emergence of 'mind', 'self', 'intention', 'meaning'. However, while recognizing the intrinsic inadequacy of models based on external observer view, the approach grounded on internal observer concedes that some of these models can offer a useful metaphor of what can occur within systems. Thus, in order to take into account the important suggestions made by holders of internal observer view, we will shortly discuss the methodological tools of Systemics as if they were designed to give rise to new and better metaphors of emergence and, in our case, of emergent phenomena associated to communication. Among the latter tools (for formalized descriptions see Minati and Pessa, 2006) we will quote the distinction between *microscopic* and *macroscopic* description levels. They can be synthetically characterized as follows:

a- The microscopic level individuates the system through its borders, its elements, the attributes and the relationships between the elements themselves. This individualization phase may be considered as a typical *micro* description, since it describes single punctual actions, elementary features, relationships caught in their stillness. Examples of micro-descriptions are the social role or a single behavioural act of a given agent, the detailed

structure of a particular social system as, for instance, a firm, the script of a drama. They describe a single relational element, each element of a group, each component of an organization, each possible behaviour.

b- The macroscopic level deals with the average effects of the system. It includes a phenomenological description: what we may observe at a global level, that is the average effects of many variables. An example may be the buzz of a crowd as the average effect of countless overlapped conversations.

Theory of emergence deals with the interactions between these two levels, which are both of bottom-up and top-down nature. Bottom-up interactions allow the occurrence of macroscopic entities and properties, while top-down ones are produced by processes occurring to keep the global coherence of macroscopic entities and properties against the destabilizing effect of microscopic disturbances. At a modelling level these interactions are described by resorting to suitable macroscopic *order parameters*, driving system dynamics and measuring the degree of emergence of new entities and properties.

This methodology of description can be used in different ways, for instance by embedding it within arguments making use of natural language, or resorting to formalized description to be used within mathematical theories. However, owing to the usually high complexity of most communication systems, it seems unavoidable to encounter situations where both conceptual reasoning and mathematical arguments are impossible or unreliable. In these cases the resort to computer simulations of suitable models of communication systems can help the modellers to explore the consequences of some hypotheses, characterize possible scenarios, and, mostly, individuate the weaknesses of modelling schemata, addressing the research towards more productive directions. In this regard, a number of computer simulations of models of *emergence of communication within systems*

*of agents* appeared in the last years (see, for instance, Werner and Dyer, 1992; Oliphant, 1996; Cangelosi, 2001; a useful review is contained in Perfors, 2002). These models are mostly based on artificial neural networks and on genetic algorithms. Their present status appears as too rudimentary to account for real phenomena occurring in human communication systems. They, however, seem to be promising, particularly if coupled with the tools of the so-called network dynamics (see, for a review, Albert and Barabási 2002; Barabási, 2002), widely used, for instance, in Econophysics (see Mantegna and Stanley, 2000; McCauley, 2004).

## **5. Conclusions**

The main advantage of systemic perspective in the study of communication consists in a greater generalization ability: it allows to account for a larger number of communication phenomena, with respect to traditional theories. Silence, or pauses within a conversation, can be considered as meaningful communicative acts just because endowed with a pragmatic valence and producing the emergence of meanings. Moreover, only a systemic theory of communication can resort to methods of theory of emergence to deal with difficult and still unsolved problems such as the emergence and development of language. Finally, in presence of a microscopic description detailed enough, this approach appear as potentially useful to deal with description, forecasting, and eventually control, of processes of communication - and miscommunication – occurring within large and medium organizations. The study of communicative value of silence led us to recognize the need for introducing the systemic methodology and the theory of emergence to build more general models of communication processes. It is worth exploring the wide world of these models both through conceptual and

mathematical reasoning as well as computer simulations, thus opening a new field of application for theory of emergence itself.

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