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Autor:	Carassa, Antonella / Morganti, Francesca / Riva, Giuseppe
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Thematic Section Intersubjectivity and Communication

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Antonella Carassa*, Francesca Morganti** & Giuseppe Riva***

GUEST EDITORS INTRODUCTION: INTERSUBJECTIVITY AND COMMUNICATION

In this editorial we take the general definition of interpersonal communication as a special type of social interaction grounded in the human capacities to understand others and we suggest some possible links between *intersubjectivity* and interpersonal communication, with a focus on interdisciplinary research in contemporary cognitive science. We then introduce the five papers of the thematic section at the light of the outlined framework.

1. Communication as Interpersonal Actions

In the last sixty years, a fundamental contribution to human communication theories has been given by the work done by philosophers of language like Grice (1957, 1975), Austin (1962) and Searle (1969, 1979). These authors, followed by a number of more psychologically oriented researchers like Sperber & Wilson (1986), Clark (1992, 1996), Airenti, Bara & Colombetti (1993), Tirassa (1999), have proposed a conceptual framework in which theories of linguistic meaning have been deeply reconsidered. In this framework the use of language is analyzed in terms

^{*} Università della Svizzera italiana, antonella.carassa@usi.ch

^{**} Università di Bergamo, francesca.morganti@unibg.it

^{***} Università Cattolica del Sacro Cuore, Milano, giuseppe.riva@unicatt.it

of speech acts, performed by subjects entertaining certain epistemic and volitional mental states, like personal beliefs, common beliefs (also known as *common ground*), personal intentions and communicative intentions.

This view has deeply undermined the classical model of communication as information transmission, or "code model" (Shannon & Weaver 1949), according to which the sender encodes her message by means of a signal that the hearer then decodes. In this model, no interpersonal relation exists between the two involved parts, and their unique cognitive ability is to correctly code and decode the signal, with the problem of possible noise in the channel.

Contrasting the idea that the sentences of a language are just very complex signals that encode messages in a univocal way, speech acts theorists assume that the same sentence can convey an indefinite number of different meanings. In fact, meaning is regarded not as a feature of the coded message *per se*, but as a function of the speaker's mental states, in particular, according to Grice (1957), of a multi-level configuration of the intentions of the speaker, referred to as *communicative intention*. Technically speaking, this means that communication has the property to be *overt:* by a communicative act a speaker intends to achieve certain results on her partner, and intends to achieve such results at least in part through the partner's recognition of her intention.

An important consequence of the role of intention recognition, is to make it possible to communicate through a wide variety of expressive means, not necessarily linguistic or even codified by a previous convention; this way, communication is conceived of as a special type of interpersonal activity, not merely based on the use of language, deeply rooted in the human capability to represent others as endowed with mental states and mental dynamics, and to engage with them in cooperative activities.

2. Intersubjectivity and Interpersonal Communication

From a psychological standpoint, to accept this view on communication inescapably opens the problem to account for human *intersubjectivity*, namely how individuals come to mutually understand each other. But, if few people would disagree with this statement, what intersubjectivity really is, which forms it takes and what precise role it plays in communication are still, at least partially, open problems.

We know that mental states, as conscious experiences, are intrinsically subjective and inaccessible to others. Thus, how can human beings reach an understanding, as they pervasively do in everyday life, of what is going on in the mind of others? Which cognitive capacities allow them to guess, with a certain degree of confidence, if someone is sad or embarrassed, or to imagine if and why their interlocutor is trying to convince them of something? Even if these issues have been largely explored in sociological and psychological research, it is since the beginning of the Nineteen-eighties that cognitive scientists have shown increasing interests in the range of phenomena, processes and capacities underlying humans social interaction they collectively refer to as *intersubjectivity*. The interest on these phenomena arises from the growing awareness, gained in a wealth of research, of the intrinsically relational, "ultra-social" nature of the human species.

The landscape of disciplines presently involved in the study of intersubjectivity is vast: philosophy, ethology, sociology, general and developmental psychology, comparative and cultural psychology, the neurosciences. This new interdisciplinary trend strives to develop a novel perspective on human social interaction, to be compatible with state-of-the-art knowledge on the phylogenesis and ontogenesis of interaction capacities, with the description of human experience worked out by phenomenologists, and with the recent findings in the field of neurosciences (Morganti, Carassa & Riva 2008).

A fresh look on intersubjectivity comes on the scene when cognitive science undergoes a shift from the classical view of the mind as an information-processing engine using symbols in a language of thought, to the *enactive* or *embodied* view (Varela, Thompson & Rosch 1991; Mac Gee 2005a-b), according to which mental processes are embodied in sensorymotor processes and situated in specific environments (Carassa, Morganti & Tirassa 2005).

The classical view has mainly supported the "Theory of Mind" (ToM) approach, according to which to predict or explain the behaviour of others in everyday dealings with them we have to "mindread" their mental states and to build a complex theory of their mind (Baron-Cohen 1995). It is

this "folk" theory that allows us to reason about what is going on inside the inaccessible minds of others.

The enactive view in cognitive science takes a different stance, derived from the idea that, in social creatures like us, an experiential coupling of self and other is operative from birth, based on perceptual recognition of other human beings, especially along affective dimensions. Infants are in fact acutely sensitive to time patterns in human movements and can react in synchrony with attuned motives and feelings. A form of primary intersubjectivity is enacted in proto-conversations, in which, according to Trevarthen (1977), a very close coordination occurs between the infant gestures or rudimentary vocalizations of pleasure and excitement with the communicative acts of the mother. Very significant is the fact that either partner of the dyad actively sustains the interaction with a mutual regulation of affect and attention. This mutual intentionality and sharing of affective states allows emotional contagion (i.e., the participants of an interaction come to feel a similar emotion) and facial imitation, these schemas offering the basis for the development of more sophisticated forms of social intelligence.

Active reciprocation in proto-conversation is a basic step for the development of intentional communication that emerges, at around nine months of age, when children begin to engage in triadic interactions, where the child and the adult coordinate their interactions with a third object towards which they share attention. Most often the term "joint attention" has been used to characterize this kind of social involvement. With respect to the previous forms of social interactions where contact with others is established by expressing emotions, triadic interactions require the child to begin to tune into the attention and behaviour of the adult towards outside entities. A first, simple mental dimension of the other (i.e., attention) is represented with a strong motivation to share it. Indeed, the first intentional communicative behaviours have the aim of sharing the reference to an aspect of the external world, as it is evident when children perform declarative gestures such as "showing" a proximal object or "pointing" to a distant object. Thus, non linguistic communication, based on the understanding that others can perform any act, a gesture in particular, with a communicative intention, precedes linguistic communication and offers the necessary background to learn how to perform it (Brinck 2008).

Let us now consider how these and other evidences in the developmental literature raise basic problems for Gricean theories of communication. These theories mainly propose that in order to plan and produce effective communicative acts and, conversely, to understand the communicative intentions of others, full-fledged mindreading capacities are needed, that allow one to explicitly ascribe and to reason upon the mental states of others. But developmental psychologists and, more generally, enactive cognitive scientists aim at offering an alternative picture, able also to explain how children before 4–5 years (the age at which there is evidence that mindreading capacities are completely developed) are able to communicate in a Gricean sense.

The basic tenets of their positions can be so summarized for the sake of this brief introduction. First, many authors propose that it is not always necessary to *infer* others' mental states to understand their behaviours and that this is true for communicative acts also. As an example, Gallagher & Hutto (2008) argue that ToM approaches do not account for our primary and pervasive way of engaging with others and are incompatible with our phenomenological experience. According to these authors "the capacities for human interaction and intersubjective understanding are accomplished in certain embodied practices that are emotional, sensory-motor, perceptual and non-conceptual. These practices constitute our primary access for understanding others, and they continue to do so even after we attain more sophisticated abilities in this regards" (Gallagher & Hutto 2008: 19).

Let us think, as an example, to the pervasive problem of understanding others' intentions in face-to-face social interactions. A direct, perceptual understanding of these intentions is possible because they are expressed in bodily movements, gestures and facial behaviours. It is our intersubjectivity that allows us to recognize the purposeful behaviour of others . Within interactions, it is by observing the movement of her hand upon an object, that we can directly perceive a person's intentions like the ones of opening or closing a window.

Evidence for this embodied interpretation of others' actions can be found in numerous studies, recently supported in cognitive neuroscience by the impressive discovery by Rizzolatti, Fogassi & Gallese (2001) of a class of neurons they call "mirror neurons" that display the same activity when an animal accomplishes a goal directed movement (i.e., an action like grasping a ball) and when the animal observes the experimenter performing the same action. These remarkable results show how the neural system of mirror neurons allows us to recognize the intentional meaning of the bodily movements of another (i.e., to appreciate *which action* she is performing) without inferential processes, rather by means of a direct matching of the mind/body of self and other (Gallese 2005; Iacoboni 2007).

The comprehension of others' intentions relies also on the fact that complex actions are tied to pragmatic contexts. Imagine to see me in the kitchen going toward the sink with a colander in my hands. You can easily understand that I have the intention to strain *pasta*, provided that you are a competent member of my same culture. This means that we make sense of why others are behaving as they do on the background of a shared knowledge of how common interactions in everyday situations regularly unfold, and of what could or ought to be done in these situations. We understand others as a result of being accustomed to a plurality of cultural norms and habits.

It is reasonable to think that the same happens also when a communicative action has to be understood. Think on how easily you can grasp the intention behind my communicative, nonverbal act when you see me put an open box of *marrons glacé* on the table in front of you, looking straight into your eyes and smiling. Like in the case of noncommunicative intentions, the comprehension of this communicative intention is allowed by the larger comprehension of the interpersonal situation, where it is reasonable to expect an offer by a kind person.

As Tomasello (1999, 2008) and other cultural psychologists strongly underline, participation to a socio-cultural environment plays a key role for the development of the most sophisticated intersubjective abilities: it is by interacting with others in structured, culturally shaped situations that we learn to make sense of others in a broad sense. Through ingenious and elegant experiments Tomasello (1999) showed how children, 18–24 months old, when asked to participate in a joint activity, such as an amusing pair game, promptly understand the structure of the activity as a whole. On the basis of this knowledge and, more generally, of the knowledge they have on how humans usually think and behave, they can also understand how each of the partners, themselves included, is intentionally situated in the flow of participatory actions.

Communicative acts are therefore comprehensible to the extent to which they appear to be situated in a pragmatic context, and other's communicative intentions can be understood in the light of a larger network of communicative and noncommunicative intentions. In conclusion, two equally important processes seem to be essential to understand others: a basic understanding of others' intentions trough embodied perception and a more complex understanding based on familiarity with pragmatic contexts.

Besides this position other authors are critical on definitely excluding the role played by full-fledged mindreading abilities at least in certain types of interactions (see for example Tirassa & Bosco 2008). While considering as acceptable that it is not *always* necessary to reason upon others' mental states, it is equally argued that, in an host of situations, one really *has*, and is able, to reason about the hidden motives and strategies of others. Consider the difference between managing an ordinary dialogue with a florist to buy a bunch of tulips, and managing a dialogue when trying to deceive an interlocutor who is known to be reasonably smart. Imagine also the reflective, meta-cognitive stance (Fonagy & Target 2003) that can be taken when one is involved in a dialogue on some critical matters with a significant other. In such a case one carefully simulates the effect she can have on the other's feelings and thoughts.

3. The Papers in the Thematic Section

The thematic section starts with a provocative paper by Daniel Lee where the theme of intersubjectivity is discussed in terms of three different perspectives: sociological, psychological, and biological. The author critically provides evidence of the diffusion of the concept of intersubjectivity among various disciplines and introduces his position explaining how communication objectively coordinates the independent minds of its participants.

The following paper by Alexandra Dima elucidates the role of facial behavior in intersubjectivity. She discusses the recent shift from an initial view, according to which definite sets of distinctive movements correspond to specific emotional states, to a more sophisticated perspective that emphasizes the collaborative and dynamic interpretation of facial behavior within the broader context of interaction.

Simone Pika, in the third paper, compares gestural signalling abilities in apes and pre-linguistic children, showing evidences on how different uses of gestures depends on different levels of intersubjectivity. In particular she highlights how human gestural communication is linked with an increased level of intersubjectivity that enables humans to understand other people as intentional agents with whom they may share experience. A hypothesis on the evolutionary origins of declarative signaling is also presented.

The fourth paper, by Davide Massaro and Ilaria Castelli, aims to provide an answer to the emerging question, "how and when theory of mind is used in human interaction?" The proposed model is developed in a socio-cultural perspective and describes how a mentalistic explanation is required when interactants are in some particular contexts. According to their vision the activation of ToM can be seen as dependent on anticipations, goals and needs of socio-affective and communicative relationship.

Finally, the paper by Luigi Anolli and Valentino Zurloni addresses the theme of interpersonal relationship in communication. The proposal is aimed at investigating the role of shared intentionality in deceptive communication by analyzing cooperative lies as activities which anticipates the victims' needs. In particular, how deceptive communication is differently managed in close and casual relationship, is experimentally investigated.

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