

ALESSANDRA CHIERA

Doctoral School in Cognitive Science, Messina, Italy

Language in Interaction: The Role of Conscious Processes in Conversation

Abstract

Consistent with the well-established tradition of cognitive pragmatics, this work hinges on the idea that human communication has to be considered inferential in nature. Starting from the empirically-based insights of Relevance Theory, I will focus on the role of pragmatic inference processes in real language use, specifically in conversation. In order to address this question, I pursue a twofold goal. On the one hand, I intend to characterize the nature of conversational exchanges, by identifying the main features that underlie their elaboration. On the other hand, my goal is to provide some indications about the cognitive underpinnings of such conversational properties. Relevance account states that language in context can be described as a matter of *expressing and recognizing intentions and that this procedure is driven by the expectations of relevance automatically processed*. In accordance with the claim that the core of conversations lies in conveying and catching each other's intentions, I will take into account the strategies employed by interlocutors and the cognitive mechanisms involved in this kind of process. Although Relevance theorists account for some important features of language in use, my hypothesis is that they falter in explaining some non-marginal aspects of real-time conversation because of two problematic issues: a) the propensity to emphasize the comprehension process omitting to account for the production process; b) the idea that it all comes down to processing relevance by means of a modular automatic device. Against these claims, I will argue that: a) conversation is a joint activity performed in coordination and requires complex abilities as on the side of the hearer as on the side of the speaker; b) automatic mechanisms cannot underlie some essential aspects inherent in conversation which are better explained by the role of conscious processes. Although the relation between language and consciousness has been traditionally neglected, the idea of putting consciousness back into the reflection on language in context has important theoretical and empirical implications.

Keywords: pragmatic inference, communicative intentions, conversation, miscommunication, consciousness.

1. “What do you mean?”

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Consider the following conversation between Paul and Frank:

Paul: “*Would you come to the beach with us?*”

Frank: “I’m finishing an article about pragmatics”

Why are everyday human communicative interactions deeply characterized by such indirect forms of sentences? Actually, Frank should have replied

(A): “No, I can’t”

which is a kind of answer more related to the type of question made by Paul. But people usually do not talk with each other making use of statements like (A). Not too often, at least! People use to converse in everyday life as Paul and Frank do. They convey meanings without specifying too much details and by saying ambiguous and incomplete expressions combined with gestures and other nonverbal elements. In other words, people widely communicate in implicit terms much more than in literal sense. And usually interlocutors comprehend the implicatures conveyed by a speaker looking beyond the conventional form assigned to an utterance.

So the point at issue is why humans do not simply use language applying literal meanings and how it is possible to communicate without the “safe” unambiguousness of conventional codes. Cognitive pragmatics is the research program that deals with these specific questions in a cognitive perspective. Looking at the ways speakers use words to say much more than they literally mean, cognitive pragmatics investigate the endless ambiguities of language and outlines an uncommon theory of meaning. This approach relies on the assumption that meaning coincides with the way people use linguistic sentences and not with linguistic sentences as such. It would appear that Humpty-Dumpty¹ has been right! Consulted by Alice about the meaning of “glory,” Carroll’s big egg replies that he means “there’s a nice knock-down argument for you!”. Netted in the unpredictability and unstableness of speech, Alice answers back that this is not the meaning of “glory” but Humpty-Dumpty offers a clear reply: “Meaning? When I use a word it means just what I choose it to mean – neither more nor less”. Obviously, this is not exactly how we always use language, but Carroll’s wordplays catch how open-ended the creativity of communication could be. More specifically, Humpty-Dumpty manages to get the key feature of human communicative processes: the basic gap between language use and conventional language (Willems *et al.* 2010). According to the pragmatics perspective, it is precisely because of this dissociation between real-time communication and “ideal” literal language – more exactly, between the semantic structure a sentence may encode and the actual sense a speaker intends to communicate by using that sentence in a certain situation – that meaning is considered to be presumptive in nature (Levinson 2000). To this extent, explaining how people really communicate with each other involves explaining how they fill the gap.

Relevance Theory (Sperber & Wilson [1986] 1995, 2002) represents one of the most empirically reliable approaches to human communication. It offers valuable insights about how people infer the interpretation of sentences on the basis of informative stimulus. In developing an inferential model of communication, relevance theorists call the classical ‘code model’ or the ‘conduit metaphor’ of communication into serious question. According to the code model, a communicative interaction could be described in terms of strict coding and decoding processes: a speaker encodes her thoughts and

¹ We are referring to the fictional character of *Through the Looking-Glass* (1871) by Lewis Carroll.

transmits them to the recipient; the recipient decodes the message and reconstructs the intended meaning using an identical copy of the code. Namely, communication is a matter of *information transfer*: it all comes down to the coding and decoding of meanings that are taken for granted. In fact, a key idea behind this account is that interpretative processes have a stable nature due to the symmetry between the speaker and hearer because of the common code. By stressing on the ambiguous nature of the linguistic code and on the great number of implicatures conveyed by utterances, Relevance Theory (RT) shows the weakness of an approach that considers meaning as a propositional truth-conditional. Take the following example:

John: "I would never be unfaithful to you, honey"

Sarah: "Who is she?"

This ordinary piece of conversation illustrates how the implicit content we can convey without actually saying it – in other words, we convey contents providing no contribution to the truth-conditions of the proposition expressed by what is said (Bianchi 2013). Carrying on such conversation requires *drawing inferences* in order to yield an interpretation of the speaker's meaning. And the inferential process is driven by expectations of a different nature. Given that speakers and hearers do not generally share the same premises and inference rules, the inferential process cannot qualify as a coding and decoding process. Namely, people generate implicatures on the basis of elements that are not linguistic in itself but deal with the pragmatic context characterized by any information that can be used to manage the conversational situation. In this sense, implicating is a pragmatic phenomenon rather than a linguistic one includable in coded expressions.

It looks like hearers, to achieve understanding, are more likely to be engaged in constructing hypotheses about the speaker's communicative intentions on the basis of the explicit and implicated aspects of content. From this point of view, the decoding process is just one of the steps involved in comprehension, and not the most crucial one. What really matters is shifting from what is said to what is implicated (Grice 1957). Implicatures just provide evidence of what a speaker might intend by producing an utterance; thereby in the relevance-theoretic account the focus is on the cognitive non-linguistic mechanisms that achieve the speaker's intention starting from the contextual clues and the expectations about the agent's behaviors. Specifically, relevance theorists point out that relevance expectations guide the procedure to the more acceptable interpretation providing the balance between cognitive effects and processing effort (Sperber & Wilson [1986] 1995).

Such considerations come out in favor of the claim that accounting for the language comprehension and production processes involves describing how agents convey and recognize evidence in order to catch communicative intentions. In accordance with this hypothesis, it is my contention that the dialectics between expressing and recognizing intentions represents the core of human communication. Specifically, I would argue that the distinctive ability to adjust and repair utterances in order to better communicate and interpret intentions marks the level of conversation. Conversation is widely a matter of processing intentions and, in order to process intentions, people need to elaborate the content that is enriched with pragmatic elements that do not match with any literal constituents of the "said."

Before delving into the processes underlying conversation, I make a clarification about the topic. The analysis of a specific phenomenon of language like conversation is justified by the idea that conversational exchanges represent the most natural way through which humans make use of language (Ferretti & Adornetti 2012; Pickering & Garrod 2004). In this methodological move there is a shift from the study of language in abstract terms to the analysis of language in interaction: language in interaction

matches with conversation. Despite that, the study of natural dialogue is in a very preliminary stage. First of all, it is considered to be too hard to investigate conversation with the controlled experimental tools. The practical problem concerns how to evaluate the given elements in participants engaged in a natural interactional exchange.

Another reason why psycholinguistics have put aside conversation is that the prevalent approach in cognitive science has been computational for a long time. In this account, explaining the production and comprehension processes means describing the mechanisms underlying the production and comprehension of isolated and decontextualized sentences. In fact, according to this traditional perspective – deeply embraced with the code model – the essence of communication lies in processing abstract sentences whereas contextual components represent a secondary question. It follows that conversation is viewed as being a marginal phenomenon.

In light of the critiques introduced by RT, the thesis of a decontextualized nature of communication is unfounded. Language is always constrained by its use and language use always involves non-linguistic phenomena, strategies, hypotheses and activities that concern the interlocutors' interactions. For this reason in this paper I assume that we should provide an account of conversation as the dimension *par excellence* in which the classical model of communication as a straightforward process does not work and has to be overcome.

Emphasizing the inference processes involved in conversation, the key question becomes: is there anything like full propositional truth-conditional meaning? In view of the above, the pragmatic inferential process constrains referential ambiguity resolution and drives the recovery of intentions during actual conversation. There is never a one-to-one correspondence between what is said and what is communicated (Carston (ed.) 2002). In other words, the boundaries of meaning are veiled and variable on the basis of the conversational context: “no proposition could be expressed without some unarticulated constituent being contextually provided” (Récanati 1993: 260).

These considerations suggest that the classical distinction between semantics and pragmatics has to be rethought (Bianchi 2004; Jaszczolt 2010). Traditionally, semantics deals with the compositionally construed sentence meaning given by the truth conditions of the sentence independently of its context; then pragmatics intervenes in the case of ambiguous or indexical expressions that need to be interpreted in context. On the contrary, according to the pragmatic inferential model of language, the entire communicative process is characterized by the phenomenon of semantic under determination: a sentence is not semantically associated with a truth-evaluable proposition independently of the broad context. Hence, there is anything like a full truth-conditional representation before the contribution of pragmatic inference. To this extent the boundary between semantics and pragmatics is hardly blurred and, more in particular, the role of pragmatics has to be widely expanded. In this perspective meaning is grounded in interaction and built in language use.

In accordance with this view, the starting point for analyzing how people actually found meaning in conversation is to focus on the strategies employed in order to express and recognize intentions beyond the linguistic information. Let us take on the challenge!

2. The nature of conversation

The key point to be tackled is how humans actually interact in conversation. Some scholars (de Ruiter *et al.* 2010; Noordzij *et al.* 2010; Newman-Norlund *et al.* 2009) have tried to explore the “interactional intelligence” (Levinson 1995) underlying the capacity of conveying and recognizing each other’s intention by isolating it from the linguistic signs system. In this way, it is possible to investigate the strategies employed by people in order to get across meaning when they do not have a common code. For this end, they have developed an experimental study known as Tacit Communication Game (TCG). In the task two subjects (the sender and the receiver) are engaged in an activity of dialogic coordination using a three by three grid and some geometrical shapes. In the communicative trial, the sender but not the receiver sees a goal configuration composed of the sender and receiver shapes both placed at specific positions in a certain orientation in the grid. The sender’s tasks are to move his shape to the right location and, at the same time, to communicate to the receiver the position and orientation of her shape by means of moving his own shape in order to realize the goal configuration together. The subjects show to achieve a high success in spite of the sub-optimal circumstances. In particular, the results reveal some interesting data concerning the achievement of the task.

First of all, there is no evidence of a trade-off in the planning time between the sender and receiver, rather the difficulty of the communication problem weighs on both senders and receivers. And secondly, feedback from receiver to sender heavily enhances the success of communication. In the light of the outcomes, it seems that the hallmark of human dialogue relies on the interrelated ability to design the communicative intention and to recognize that intention. More specifically, the complexity of the conversation resides in two intertwined problems: the hearer has to face the problem of *intention recognition* so that he has to be able to deduce the intention that motivated the speaker’s act; on the sender’s side, the problem is a matter of *recipient design*, namely the ability to produce tailored messages for specific addressees in order to modify his mental states. According to these findings, a sender generates an intentional communicative action on the basis of a prediction of the intentions that the receiver is most likely to confer to that action; and the intention recognition process is driven by the listener’s awareness that the sender has built a conceptual model of himself.

Such a hypothesis is confirmed by the neurophysiological analysis that compares cerebral responses underlying both the production and comprehension of communicative actions: the supporting infrastructure of “recipient design” appears to be cerebrally implemented within the “intention recognition” system of the listener. In fact, there is a cerebral overlap of brain activity in the sender during the planning of the communicative action and in the listener during the recognition of that action. Specifically, both the production and the comprehension of communicative acts rely on the activity of the right posterior superior temporal sulcus (pSTS), an area associated with joint attention and the attribution of others’ general intentions.

Here the main aspect to be taken into account is the interactional character showed by the conversational exchanges. Some works on ordinary verbal conversation (*e.g.* Brennan & Clark 1996) – that is, in situations wherein people share the same code – have revealed that the kind of interactive intelligence analyzed above is required to overcome the pervasive haziness of communication. To this extent, the sharing of a linguistic code makes no difference. Conversation remains an interactional activity whose explanation requires an account of the interrelation between the production and

comprehension of intentions and the simultaneous effort to build this exchange together. By stressing the dialectics between the expression and interpretation of intentions – namely, by stressing on the collaborative dimension of conversation – my claim is that some critical considerations towards RT must be moved.

Theoretically, RT states that communication is a matter of generating and recognizing intentions:

As speakers, we intend our hearers to recognize our intention to inform them of some state of affairs. As hearers, we try to recognize what it is that the speaker intends to inform us of. Hearers are interested in the meaning of the sentence uttered only insofar as it provides evidence about what the speaker means. Communication is successful not when hearers recognize the linguistic meaning of the utterance, but when they infer the speaker's 'meaning' from it. (Sperber & Wilson [1986] 1995: 23)

On the side of the hearer, the interpretation process consists on choosing the most relevant stimuli; on the side of the speaker, in order to address the message you just need to attract the attention and prompt contextual assumptions trying to be optimally relevant. In spite of the fact that relevance theorists admit the importance of both the production and comprehension processes, they are not committed to account for the mechanisms involved in the speaker's side. According to RT, the processes to be explained in communication are the comprehension ones (Wilson 1998). In this way, the focus is on the speaker's intention that represents a phenomenon already given rather than a process to be constructed. To this extent, the role of the speaker is strictly presumed.

The TCG results suggest that the problem of the sender to modulate his utterances on the basis of the receiver's feedbacks represents a complex process. Hence, the communicative intention is not a given entity but it is continuously constructed in the dialectics between the speaker and listener. In light of this fact, RT may offer a limited explanation of the interrelated mechanisms that underlie language processing at the conversational level. The hallmark of communication resides in how people adjust, repair and monitor their expressions in conversation. Each interlocutor both speaks and comprehends and changes his role by taking into account the beliefs, purposes and knowledge of the conversational participants (Coates 1990). This is the reason why communication is inherently cooperative and meaning is constructed by each and every participant engaged in the shared task of attending to the others' intentions. Centering on the speaker or hearer alone entails fragmenting a phenomenon whose identity lies in being global and collective.

To this first critique to RT follows another critical consideration about the mechanisms involved in the pragmatic processes elaboration. Around this issue I will suggest some reasons that justify the introduction of consciousness in the study of conversation.

3. Get lost in conversation

In this section we will focus on the psychological mechanisms that make conversation possible. In other words, we will take a standpoint within the mind of the interlocutors in order to account for the processes implicated in mentally generating the communication acts.

How does the inference process of production and comprehension work? Traditionally, in cognitive science, language processing has been framed in an automatic, and more specifically modular,

account (e.g. Chomsky 1988; Fodor 1983). RT agrees on the modularization of inference procedures at the computational level: to this extent, high-order aspects of inferential reasoning should be reducible to cognitive unconscious processes. In fact, from the relevance perspective pragmatic interpretation is the result of the operation of an intuitive dedicated system (Sperber & Wilson 2002) pertaining to the ability of mindreading; hence, comprehension is basically a variety of mindreading. In this view, conversational elaboration maximizes information by employing spontaneous inferences because of the automatic relevance principle that drives the entire human cognition:

Our perceptual mechanisms tend automatically to pick out potentially relevant stimuli, our memory retrieval mechanisms tend automatically to activate potentially relevant assumptions, and our inferential mechanisms tend spontaneously to process them in the most productive way. (Wilson & Sperber 2004: 254)

The idea that the theory of mind reasoning has a central role in pragmatic comprehension is certainly shared among scholars (e.g. Tomasello 1999). Nevertheless, the debate around the modularity of the communicative intentions reading is controversial. As we have seen (cf. § 2), the production and comprehension processes involve a conceptual construction of each others' mental states supported by a general system: the pSTS network. Several data show that intention is a graded phenomenon (Pacherie & Haggard 2010) whose explanation often does not require specific metapsychological abilities. Some findings support the idea that communicative intentions are designed by immediately taking into account different components of context, for instance the knowledge, features and capacities of the listener (e.g. Nadig & Sedivy 2002; van Berkum *et al.* 2008). The majority of these studies suggests that communicative intentions can be interpreted by means of non-modular mechanisms, although automatic ones. It is important to underline that the role of automatic processes in language elaboration is an undeniable fact. For my purpose, the point of discussion is to understand if such processes are sufficient for explaining how intentions change and merge together at the level of conversation. I argue that this interactional activity is likely to involve conscious processes. In order to test this hypothesis – against the RT's claim that conversation is driven by relevance principles automatically generated – I take into account a phenomenon strictly linked to the dialectics between speaker and hearer, namely the dimension of *failure* and the following dimension of *repair*. The riddles that fill Carroll's text mentioned above (cf. § 1) illustrate the potential territory of meaning and its power to generate misunderstandings. In this paper I claim that the dimension of misinterpretation marks human conversation in a constitutive way.

Communicative failure can consist of misunderstanding, non-comprehension, refusal (Bara 2011; Bosco *et al.* 2006) and other cases that involve self-correction, repair strategies and adjustment processes where hypotheses might be revised during the conversational exchange. In fact, in order to guarantee successful communication, interlocutors should construct shared representations by aligning with respect to the conversation topic. At this level, inferences are not guided by explicit premises but are based on contextual information that is discovered within the process itself.

RT has considered that the pragmatic system can yield a sub-optimal interpretation leading to err:

There may be many shortcomings, many cognitive sub-mechanisms that fail to deliver enough effect for the effort they require, many occasions when the system's resources are poorly allocated. (Sperber & Wilson [1986] 1995: 262)

Despite that, RT provides some very vague clues on how to explain and solve these cases. In fact, relevance theorists refer to automatic mechanisms of epistemic vigilance (Sperber *et al.* 2010) or processes of mutual adjustment between the premises and conclusions of pragmatic inferences (Wilson & Sperber 2004) that measure the efficacy of conversation in terms of attempted relevance; the notion of optimal relevance driven by these devices – consistent with the principle of cognitive economy – ensures a successful communication by solving the risk of misinformation. But they do not account for *how* optimal relevance can play this crucial role (Mazzone 2013) hence do not offer a comprehensive model of conversation. My claim is that RT's assumptions do not allow us to address outstanding questions such as the interactive character of repair strategies because of the stress on the automatic nature of conversation based on the functioning of a pragmatic dedicated module. This criticism to RT lies on a more general idea, namely that the ability to converse rests on the capacity to identify a unifying topic (van Dijk 1977). Because of the intrinsic asymmetry in the representational models of interlocutors (Ferreira 2004), this capacity requires costly pragmatic inferences that arise when the interlocutors' assumptions have to be made consistent with a model of the conversational context. In dialogue what is important is the construction of a situational interpretation at the global meaning level (Cosentino *et al.* 2013). To this extent, the dialectics between speaker and hearer makes conversation an interpretative process unfolding at the global level oriented to topic maintenance.

From this point of view, the sole reference to a specific relevance-based module does not account for the global nature of conversation. At this level topic maintenance seems more likely to be tied to global coherence (Cosentino *et al.* 2013; Giora 1997), a feature that constrains and can explain some main properties of conversational exchanges. Starting from the criticisms to a relevance-based pragmatic module and consistent with the idea that conversation is not bound only by the search for relevance rather its interactional nature involves complex properties, my idea is that conversational processes require other mechanisms. Specifically, the pervasion of hypotheses revisal and adjustment processes makes conversation a strictly hypothetical phenomenon. Our knowledge of what others know, believe and think is always “tentative and probabilistic” (Krauss & Fussell 1991). In this sense, dialogue is a trip driven by abductive inferences (in Peirce's terms). These kinds of processes are involved in monitoring each others' intentions and in constructing meaning ensemble. Abductive mechanisms are higher risk inferences not supported by automatic modular devices. Rather, the repair strategies seem to involve monitoring and self-monitoring (Horton & Keysar 1996) that some scholars (*e.g.* Levelt 1989) hold to be controlled processes affected by complex inferential and processing load. More recently, Knudsen (2007) has underlined the role of conscious attention in top-down control.

On the basis of such considerations, the reference to conscious processes may provide important insights. Actually, various studies highlight that global operations are more related to conscious experience than local ones (Baars 2002). Given that conversation requires both the global orchestration of information in order to integrate context relations at the situational level and some on-line awareness of the speaker's mental state (Shintel & Nusbaum 2004) – not only when something goes wrong, my claim is that conscious processing – in terms of global integrated networking – should be considered crucial in language processes. The implication is that, although every inference does not involve a massive burden, we allocate extensive cognitive resources to the processing of communication in order to keep conversation alive (Zlatev 2008). Because the contextual modulation that expands inference elaboration to the conversational model is not an additional process, a hybrid model in

which both automatic and more conscious processes coexist seems necessary to capture the subtlety of language phenomena. Further theoretical reflection and empirical evidence are required to integrate the assumptions developed here into a comprehensive model in order to account for the complex balance underlying the flow of conversation.

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