

An interest and belief-based model of explicit communication

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Abstract

The paper outlines an inferential model of explicit communication. The first section presents the main notions involved in the model, that is, the speaker's intended meaning and addressee's intended meaning. The first notion is centred on the speaker's interest in situation: a speaker intends the meaning of an utterance on the basis of a partial order of preferences with respect to a set of contextually plausible meanings. The second notion is centred on the addressee's communicative inference, which is based on the addressee's belief about the speaker's interest and on the linguistic form of a sentence. In the following sections, the paper presents the phenomenon of semantic underdeterminacy, introduces the preferences partial order, and the communicative inferences. The paper takes the notion of interest from cognitive social theory, the notion of meaning from semantics, the notion of explicit meaning from pragmatics, and uses the notion of communicative inference for explicit meaning in partial accordance with Relevant Theory. Finally, the paper discusses some examples taken from the pragmatist literature.

Keywords: states of affairs; truth-conditions; semantic underdeterminacy; speaker's interest; speaker's intended meaning; addressee's belief; inference; addressee's intended meaning; shared intended meaning; explicit communication.

Introduction

Communication is a phenomenon which pervades all human activity. It is studied by various disciplines from different theoretical perspectives. Whatever the perspective taken, however, studying communication involves investigation of a complex phenomenon which by its nature requires dialogue among disciplines. Some important theories in philosophy, linguistics and cognitive science share the idea that full understanding of communication requires understanding the role of the non-linguistic knowledge tied to the situation in which a sentence is uttered, for instance: Récanati's truth-conditional pragmatics, Bach's 'quasi-contextualism', and the communicative-inferential model developed by Sperber and Wilson). Pragmatists (i.e. contextualists and relevant theorists) and semanticists (i.e. minimalists, indexicalists) have given rise to numerous standpoints about different aspects related to the context-dependence of meaning (e.g. indexicality, reference assignment, literal meaning, semantic underdeterminacy, semantics/pragmatics distinction, what is said/what is implicated distinction, unarticulated constituents, pragmatic intrusion, etc.) (Stanley, 2000; Récanati, 2004a; Bianchi, 2004; Bach 2004; Szabó, 2005; Cappelen, 2007; Carston, 2008; Gaucker, 2012; Borg, 2012;

Corazza and Dokic, 2012; Stojnic and Lepore, 2013; Devit, 2013; Stalnaker, 2014;). There is also lively debate within the pragmatics, which contains and extends the previous issues, for instance: mind-reading, ad hoc concepts construction, mutual adjustment and backward/forward inference, implicature vs. explicature, inferential vs. associative method, radical vs. moderate contextualism, etc. (Sperber & Wilson, 1986, 2002; Recanati, 2007, 2010, 2012; Carston, 2007, 2009; Wilson, & Carston, 2007; Hall, 2009, 2014; Bach, 2010; Mazzone, 2011; Mazzarella 2011; Wilson & Sperber 2012; Carston & Hall, 2012; Belleri, 2013, 2014).

However, for the purpose of the paper, it is relevant the debate concerning the nature of the "primary" pragmatic processes, that are, the processes that contribute to the recovery of the explicit meaning of a sentence¹. Relevance Theory has proposed a unified inferential account of primary (i.e. explicatures) and secondary (i.e. implicatures) pragmatic processes. Recanati conceives of this distinction as correlating with two different on-line processing systems: for primary processes, there is a low-level associative system, which is responsible for the derivation of 'what is said' (explicit meaning), and, for secondary processes, there is a genuinely inferential system, which recovers 'what is implicated'.² In short, the current debate is animated by numerous questions. For example: what is the role of truth-conditions in determination of the explicit meaning? What type of non-linguistic knowledge is necessary? In what does the contribution of non-linguistic knowledge consist? How can such knowledge be obtained? And how is it used? Is it the premise of a non-demonstrative inference, or does it activate a frame that associates concepts? Are the primary processes conscious or unconscious? Etc.

Speaker's intended meaning and addressee's intended meaning

The paper presents a model of explicit communication, where the notion of shared intended meaning is based on the speaker's preference for a state of affairs to which a sentence refers, and on the addressee's communicative

¹ Cf. Carston (2002) on the notion of explicature in Relevant Theory; Récanati (2001) on 'what is said' in Truth-conditional Pragmatics; Bach (2010) on implicature in linguistics.

² According to Recanati's framework, primary pragmatic processes are governed by a dynamics of accessibility, constrained by semantic associations and world-knowledge structures (i.e. 'schemata') (Récanati, 2010). According to Relevant theory's framework, utterances come with a presumption of their own optimal relevance, which guides the derivation of explicatures, contextual assumptions and implicatures (Wilson and Sperber, 2012).

inference, which involves the addressee's belief about the interest of speaker in the specific communicative situation.

The paper develops previous works of the author. The two main thesis are in the following: 1) given a set of contextually plausible interpretations of a sentence, the speaker's intended meaning is determined by the speaker's situational interests (Cruciani, 2010), and 2) the addressee's intended meaning is inferred by addressee on the basis of his/her belief about the speaker's interest (Cruciani, 2011)³. Communication is successful when the intended speaker's meaning and addressee's speaker meaning are shared, that is, when the addressee's inference is based on a true belief about speaker's interest in situation.

The paper takes the notion of interest from cognitive social theory, that is, an interest is viewed as a state of affairs preferred by a speaker because it implies the conditions of possibility of his/her goal (this is a modified notion originally proposed by Conte & Castelfranchi, 1995). Also, the paper takes the notion of meaning from analytic philosophy of language (semantics), that is, the sentence meaning identifies with the truth-conditions of sentence, and the meaning of an expression identifies with its contribution to the truth value of the sentence in which it appears (Tarski, 1944).

Speaker's intended meaning. The notion of speaker's intended meaning of declarative sentences is founded on the relation between the states of affairs in which a sentence is true and the speaker's preferences ordering in regard to the states of affairs in which the sentence is true. A sentence can be true with respect to different sets of truth-conditions, which correspond to different states of affairs. The state of affairs preferred by a speaker because it implies his/her goal provides the truth-conditions which determine the speaker's intended meaning in the specific situation of use. From this perspective, the determination of speaker's intended meaning is viewed as a selection of a state of affairs which makes a sentence true (via truth conditions) and satisfies the speaker's interest in situation. Hence, the process of determining speaker's intended meaning can be explained in terms of preferences ordering.

The schema in Figure 1 illustrates the notion of speaker's intended meaning as it is conceived here.⁴ At the bottom of the schema is a sentence which, given a context of use, has some plausible interpretations. Each interpretation refers to a state of affairs which makes the sentence true: that is, it refers to specific truth-conditions. The correspondence between the state of affairs preferred by the speaker and one of the states of affairs which make the sentence true determines the speaker's intended meaning. In other words, when the possibility-conditions of the goal's speaker match

the truth-conditions of a sentence, we have speaker's intended meaning.

Addressee's intended meaning The addressee's intended meaning is obtained via a communicative inference (Fig. 2). The premise P₁ consists of a sentence and the semantic conventions associate to its linguistic form (that is, some semantically plausible meanings). The premise P₂ consists of the addressee's belief about the speaker's interest, more specifically about a partial ordering of speaker's preferences.

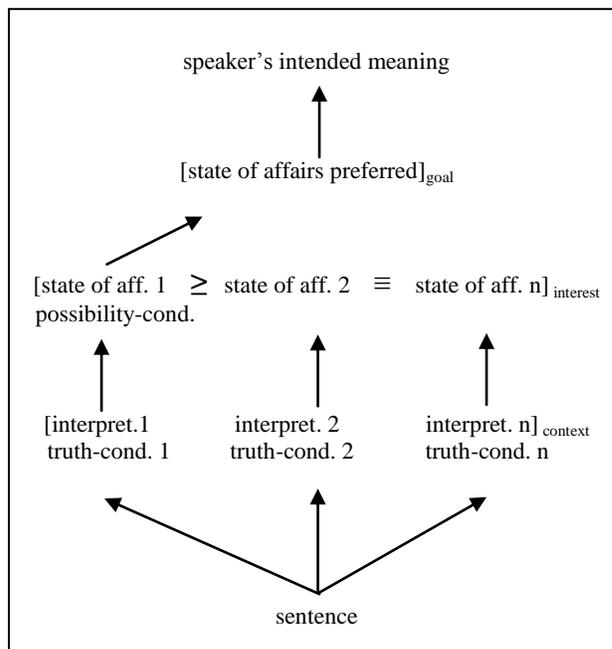
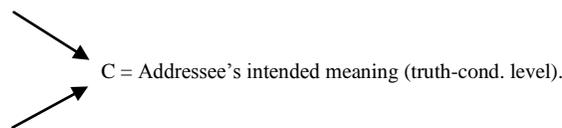


Fig.1 – The schema illustrates the notion of speaker's intended meaning as it is conceived here.

P₁ = Sentence (linguistic form and semantic conventions).



P₂ = Belief (speaker's interest).

Fig. 2 – The schema illustrates the notion of addressee's intended meaning as it is conceived here.

An important aspect is that the validity of this kind of inference (i.e. abduction) does not depend on logical relation between premises (as for instance the case of indexical expressions, where the relation variable-content is logical). More precisely, it is not necessary that the non-linguistic knowledge used in P₂ is accessible, that is constrained, by the linguistic form of sentence. In other words, P₂ is composed of inarticulated constituents (cf. Récanati. 2002).

In the following, the paper presents the phenomenon of semantic underdeterminacy; it introduces the speaker's

³ These notions are developed by the analysis of meaning negotiation processes in linguistic controversies provoked by ambiguous clauses in contracts (Cruciani 2009a, 2012).

⁴ The line of interest in Figure 1 represents a partial order of preferences, where “≥” stands for the preference relation “at least good as”, and “≡” stands for the preference relation “equal in value to”, as specified in the following of the paper.

preferences; it presents the communicative inferences for explicit meaning; and in the last section it argues in favour of the role of the speaker's interest and beliefs' addressee in the communicative inferences.

Semantic underdeterminacy in semantics and pragmatics

This section illustrates the phenomenon of semantic underdeterminacy, and outlines some differences between semantics and pragmatics.

Semantic underdeterminacy occurs when the conventional meaning of a sentence used by a speaker in a specific situation, coded by semantic conventions, underdetermines the proposition explicitly expressed by the utterance (Travis, 1975; Searle, 1979). The question is whether conventional meaning (obtained by linguistic conventions and rules) is sufficient to provide truth-conditions or whether other items are required as well. In other words, is it sufficient to know semantic conventions and linguistic rules or do we need to know elements of the specific situation of use?

On a semantics view, conventional meaning and a small number of contextual parameters are sufficient to determine the truth-conditions of a sentence (cf. Stanley, 2000; Cappelen and Lepore, 2005). On a pragmatics view, conventional meaning is not sufficient to determine a unique set of truth-conditions (in pragmatics, semantic underdeterminacy is considered pervasive of all language). Hence, we need information on the context of use to complete the conventional meaning and to determine the truth-conditions. This information consists of shared knowledge (encyclopaedic and local), the discourse or sentence in which an expression is used, and elements of the physical surroundings (cf. Récanati, 2004; Stalnaker, 2014).

Specifically, the paper deals with the problem of intended meaning when a number of interpretations are all plausible in the same combination of contexts, and not with the problem of whether there is a need for non-linguistic information to fix a unique set of truth conditions, there is a need.

The example in the following can shed light on this point. The issue is the following: the conventional meaning of a sentence, even without indexical expressions, and structural and lexical ambiguity, actually underdetermines the proposition expressed by the sentence. And even with the additional pragmatic contribution of relevant contextual information, it is not always possible to fix a unique proposition. The sentence is as follows:

(1) "There is water on Pluto".

I do not know whether there is water on Pluto, but I understand the sentence because I am able to imagine the ways in which there might be water on Pluto: for example, in the form of ice on the planet's surface or in the form of gas in its atmosphere. Consequently, sentence (1) can have at least two interpretations (two different sets of truth-conditions), that is, it can be true both if there is water in the

form of ice on the surface and if there is water in the form of gas in the atmosphere. The two truth conditions correspond to different states of affairs:

- a. "There is ice on the surface of Pluto";
- b. "There is water vapour in the atmosphere of Pluto".

Hence, (1) can refer to both states of affairs. This is the case if we consider semantic conventions, but also if we consider the text of the sentence in which the word "water" appears and we use encyclopaedic knowledge (e.g. physical states of water).

Hence, if pragmatic processes, based on non-linguistic contextual information, are not sufficient to determine a unique set of truth-conditions (proposition), then, in order to determine the explicit level of communication, we can take into account the speaker's preferences for the states of affairs which make a sentence true.

Partial ordering of state of affairs

This section introduces the notion of preference for a state of affairs based on the comparative notions: "better than" ($>$), "equal in value to" (\equiv) and "at least good as" (\geq) taken from decision theory. Using this language, it is possible to express the preferences of agents for states of affairs. For instance, on writing: $[(sa_1) > (sa_2)]_{Ag}$, we assert that an agent prefers the state of affairs 1 rather than the state of affairs 2 (see Fig. 1).⁵

Decisions theorists assume that an agent rationally chooses an option if the set of options realizes certain properties: ordering, continuity, independence (Myerson, 1991). For the purposes of the paper, it is sufficient to consider the property of ordering, which concerns completeness and transitivity.

Completeness for weak preference is defined as follows⁶:

the relation \geq is complete if and only if for any elements a and b of its domain, either $a \geq b$ or $b \geq a$.

Transitivity for weak preference is defined as follows:

the relation \geq is transitive if and only if it holds for all elements a , b and c of its domain, so that if $a \geq b$ and $b \geq c$, then $a \geq c$.

These properties ensure that an agent is able to compare some options coherently with his/her own interest. However, it is possible that an agent is not always able to compare all options clearly, but this does not prevent him/her from choosing coherently with his/her own interest. Hence, in order to consider an agent's choice coherent with his/her interest, it is sufficient that s/he is able to determine

⁵ An agent's preference can be also expressed via utility function. For a set of options S , a utility function f maps each option onto R . The utility function gives rise to a preference relation " $>$ " on S . For instance, $(sa_1) > (sa_2)$ if and only if $f(sa_1) > f(sa_2)$.

⁶ Analogously we can define the relations " $>$ " and " \equiv ".

the best state of affairs among others without necessarily ordering the other states of affairs.

Knowing the partial ordering is a condition required by the speaker and the addressee because communication takes place successfully.

Inference of explicit meaning

This section illustrates the type of communicative inferences considered here, that is, non-demonstrative inferences⁷. They are structured as follows:

P₁: Form and semantic conventions
P₂: Contextual information

C: Explicit meaning

Consider the following sentence:

(2) “The bank is wet”.

In (2) the meaning of the word “bank” is not determined, it can mean a financial institute or land alongside a river. In cases of this kind, non-linguistic context provides information with which to select a plausible interpretation. For example, on the one hand, if (2) is produced by a speaker close to an angler who is about to fish, then “bank” plausibly refers to the land alongside a river and (2) plausibly means that alongside the river there is high humidity; on the other hand, if the speaker is near to the doors of a financial institute, then the word “bank” plausibly refers to the institute and (2) plausibly means that the floor of the financial institute has just been washed. In both cases the non-linguistic information is directly perceived from physical surroundings (i.e. the angler and the financial institute). Hence, the meaning of (2) is obtained through an inference composed of two premises: sentence (2) (semantic conventions applied to the linguistic form) and the contextual information in which (2) is produced; the conclusion consists of a unique proposition. The two possible inferences are as follows:

P₁: “The bank is wet”
P₂: Direct perception of the financial institute

C: “The floor of the financial institute has just been washed”.

P₁: “The bank is wet”
P₂: Direct perception of the angler

C: “There is high humidity alongside the river”.

Consider (2) produced by a speaker close to angler about to fish: the word “wet” can refer to both high humidity and water on grass, rocks, etc. Here the form or the way in which water is on the bank is not determined. We need further information: for instance, yesterday it rained alongside the river (local knowledge); or generally there is

⁷ See Wilson and Sperber (2012) on the communicative inferences in Relevant Theory.

high humidity alongside rivers (encyclopedic knowledge), to determine the ways in which there is water on the bank. The two possible inferences are as follows:

P₁: “The bank is wet”
P₂: Yesterday it rained alongside the river

C: “There is water on grass, etc. alongside the river”.

P₁: “The bank is wet”
P₂: Generally there is high humidity alongside rivers

C: “There is high humidity alongside the river”.

The inferential processes involved in the determination of meaning of (2) are those of selection of ambiguity and enrichment of truth-conditions. In (2) we can infer an interpretation of the word “bank” on the basis of contextual information directly perceived from the physical surroundings, and consequently we can infer an interpretation of the word “wet” on the basis of local or encyclopedic knowledge.

I would stress that the validity of inference does not depend on logical relations between premises, that is, it is not necessary for communication that the non-linguistic information used in the second premise be made available by, or constrained to, linguistic form of expression.

Interest and belief in communicative inferences

This section discusses the process of determining the intended meaning of an utterance. It argues in favour of the role of the speaker’s interests and the addressee’s belief concerning the speaker’s interests. The inference in question has a premise which consists of information about the form and the semantic conventions associated with the sentence (which admits to several semantically plausible interpretations). The other premise consists of the content of the addressee’s belief about the speaker’s interest in the situation, i.e. it regards the state of affairs preferred by the speaker (insofar as it exhibits the possibility conditions of his/her goal). The conclusion consists of a unique proposition, the one explicitly expressed by the speaker with the utterance. Or, as in the case that follows, it consists of a part of the proposition that contributes, as the premise of another inference, to determination of the utterance’s overall meaning. Consider the following sentence taken from the pragmatics literature (Carston, 2007).

(3) “I’m going to the bank now to get some cash”.

At first glance, here the interpretative problem consists in identifying a referent for the word “bank” (‘financial institution’ or ‘river side’). Let us base our interpretation on the approach of Récanati’s Truth-conditional pragmatics. In this case it would be plausible to assume that the referent ‘financial institution’ is assigned to the word “bank” because it is associated with the concept ‘cash’ triggered by the word “cash”, or because it is associated with the

stereotypical representation ‘getting money from a bank’ (or with both). This association is made possible by the discourse (or linguistic) context, i.e. the part of the sentence in which the expression “to get some cash” appears, and by the shared encyclopaedic knowledge that, in general, money is withdrawn from banks.⁸ But this is not necessarily the intended interpretation, even though it is the most immediate one.

Consider the case in which (3) is uttered by an angler who is going fishing and who intends to sell the fish that he catches. In this case, the encyclopaedic knowledge that money is withdrawn from banks is not relevant, but nor is the local knowledge that the speaker is a ‘professional’ fisherman able to disambiguate the word “bank” (because also fishermen go to the bank). Instead, if we know the speaker’s interests – for example, that he intends to sell the fish that he catches in order to earn money, or that he intends to withdraw money in order to go shopping – then we are able to identify the intended referent in both the former and the latter case. We are able to do so on the basis of the knowledge shared between speaker and addressee about the speaker’s interest, and not on the basis of conceptual associations produced by the addressee. If this is how matters stand, then it is plausible that the speaker’s interests and goals render the communicative models more flexible and generalizable, and therefore preferable to ‘mechanistic’ models – or at least to more rigid ones based on conceptual frames and schemata activated by the addressee and presumed shared assumptions.

Presented below is the scheme of the inferential process whereby the addressee determines the meaning of (3):

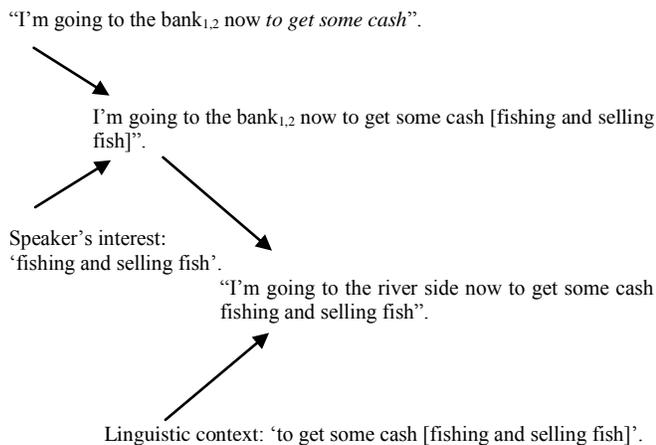


Figure 3 – Inferential steps in determination of the meaning of (3).

⁸ Following the same interpretation procedure, if at the beginning of utterance (3) the word “bank” is understood by the addressee in the sense of ‘river side’, because for some reason the latter concept is more activated and available to the addressee than ‘financial institution’, it is likely that the word “cash” in the continuation of the sentence will trigger the concept ‘cash’, which is associated with the concept of ‘financial institution’, thus aligning the communication with the speaker’s intentions (accessibility shift) (see Recanati 2004a; Carston 2007).

In interpretation of (3), the shared knowledge of the speaker’s interest enables determination of the meaning of the expression “to get some cash” (‘sell fish’) which then allows assign of the reference for the word “bank” (‘river side’). Hence, the interest (via enrichment) has determined (i) the contribution of the expression “to get some cash” to the truth-conditions of the sentence, and accordingly (ii) the relevant linguistic context for disambiguation of “bank” in the specific situation.

Finally, an important characterization of the communication model is as follows. If we believe that knowledge of the speaker’s interests is used in the premise of the addressee’s inference, then we admit that the meta-representational capacities have a role in explicit communication (i.e. in the determination of propositional content). We therefore assume that, although this process often is automatic, it is conscious. Hence, in principle, the addressee can at any time justify, with respect to (3), the assignment of reference to the word “bank” or determination of modes in which “to get some cash.”

Conclusion

The paper has outlined a model of explicit communication for declarative sentences. Its elements are: the meaning as truth-conditions, inferential process, the speaker’s interest as a state of affairs preferred by the speaker because it implies his/her goal; the partial ordering of states of affairs; and the addressee’s belief about speaker’s interest. Its arguments are: the communicative intentions that trigger the information of the pragmatic context often are not sufficient to select the speaker’s intended meaning among some contextually plausible meanings (*pars destruens*), and thus it is necessary to take into account the partial order of preferences to determine the speaker’s intended meaning (*pars consrtruens*). Its related notions are: ‘what is said’, which refers to the explicit level of communication and is based on truth-theoretic machinery which delivers truth-conditions (Récanati, 2010). Nevertheless, the model differs from the Truth-conditional Pragmatics because it comprises the communicative inferences also for explicit meaning, and it considers very relevant the active role of addressee in communication, as the case of explication in Relevant Theory (Wilson and Sperber, 2012).⁹

In summary, the speaker intends the meaning that maximizes his/her interest in situation, and the addressee infers the meaning on the basis of his/her belief about the speaker’s partial order of preferences. When the addressee has a true belief about the partial order of preferences, we have shared intended meaning, that is, a real communication.

Acknowledgements

Very special thanks to Sonia Guglielminetti.

⁹ Récanati uses “ascertaining” rather than “determination” with regard to the role of addressee in the process of determination of meaning.

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