Which Answers are expected?

One of the main difficulties in analysing dialogues concerns the way interventions are expected or not with respect to a dialogue. We argue that the framework we develop may help understanding this phenomena. Close in some way to Ginzburg's theory of dialogue [3], our proposal is in the perspective of recent philosophical positions [1]: interaction is ontologically the primitive fact of language. This is why we choose Ludics as our formal framework: a logical theory developed by J.Y. Girard [4], for which interaction is ontologically the primitive concept.

A Frame for a Dialogue Theory

Our model of dialogue is organized in two levels, that we may intuitively compare to the two modes of interaction in Ludics. With respect to the first level, that considers the dynamics of a dialogue, a dialogue is seen only as an alternate sequence of interventions among which we may distinguish the one which initiates the exchange and the one which eventually ends the exchange. Interventions are only considered according to (i) their role in the flow of interventions: one intervention is anchored on a previous one and opens possible continuations of the dialogue, (ii) the fact that they are produced by one locutor while they are in the same time received by the other locutor. We interpret interventions by means of *dialogue acts* that express entitlements or decisions of the speaker, and also its acknowledgment by the addressee. This first level captures the surface of a dialogue [2] as a cut elimination between two formal proofs, in other words, as a confrontation between two strategies, that is, in terms of Ludics, as a *closed interaction between two designs*. By this way, it enables to pay attention to the notion of convergence/divergence in the dialogue.

In order to take care of other dimensions of dialogue, in particular to account the content of these interventions, but also to make explicit the aspects of convergence/divergence, we complete the modelisation by adding a second level. We set a *cognitive base* for each locutor. A cognitive base contains, roughly speaking, the various knowledges and abilities used for building utterances as well as for receiving and recording them. Formally, these elements are represented by *designs*. Open interaction between these designs, that is cut elimination between formal proofs as a calculus, enables to account for various operations, for example: updating, inferential executions...

Expected/Non Expected Answers

We consider a basic example of **divergence**:
EXAMPLE: An ethnologist **P** conducting a survey and interviewing a native **N** restitutes the following dialogue:
– *P* "*All the Kpelle cultivate rice (P_1). Mister Smith does not cultivate rice (P_2)*". "*Is Mister Smith a Kpelle?*" – *N*: "*I do not know, I do not know M. Smith.*"

To analyse this example, we use the **convergent** dialogue that P anticipated:
– P: "*All the Kpelle cultivate rice (P_1). Mister Smith does not cultivate rice (P_2)*'. "*Is Mister Smith a Kpelle?*"
– N: "*No, he is not.*"

We consider seven steps in this dialogue, and we focus on only a few facts of our modelisation:
- the four first ones corresponds to the informations successively given by P, and their reception by N. At the level of cognitive bases, the two utterances P_1 and P_2 (more precisely the two *formal proofs* or *designs*), are initially contained in P's cognitive base. In the ideal situation that we suppose, these utterance are correctly received by the addressee, that is they are successively recorded in his cognitive base (formally the designs are copied by means of a copycat strategy).
- The fifth and the sixtth ones correspond respectively to the question asked by P and the answer given by N. If at the level of the surface of the dialogue,both are modelied each by a unique dialogue act, creating a unique locus on which anchor the continuation of the dialogical exchange, what happens at the level of the cognitive base is widely more complicated. To answer to P's question, N has to make interacting two designs, the one associated with P_1 and a design associated to the utterance "*M. Smith is a Kpelle.*. The calculus of this interaction produces a new design: the one corresponding to the utterance "*Mister Smtih cultivates rice.*" Endly, N has to regnonaizes that this latter design and the one corresponding to P_2 entails a conradiction. Therefore, he may produce the answer "*M. Smith is not a Kpelle*". That is, he resolves the contradiction by erasing in his cognitive base the design that he added transitorily: "*M. Smith is a Kpelle.*
- The last step is not expressed explicitly in this dialogue: P may consider that the answer given by N is sufficient and ends properly the dialogue. At the surface of dialogue, the dialogue act denoting the convergence is played.

The comparison between the divergent dialogue and the ideal convergent one that we started to describe above, may help to identify the missing cultural competences useful for a logically correct answer. Beyond this example our modeling provides us with tools for making explicit lacks in cognitive bases.

References

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[3] Jonathan Ginzburg. *The Interactive Stance: Meaning for Conversation.* Oxford, 2012.

[4] Jean-Yves Girard. Locus solum: From the rules of logic to the logic of rules. *MSCS*, 11(3):301–506, 2001.