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10h00
UT3 Paul Sabatier, IRIT, Auditorium J. Herbrand

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Structures, commitments and games in strategic conversations

Abstract: Sequential linguistic exchanges rely on a complex interplay between the different dialog acts constitutive of the exchange: the effects of a linguistic action depend on its context of use. It is essential that a model of language dynamics accounts for this, which raises a certain number of issues: how to represent the conversational context, and compare distinct representations, how to provide a semantics for dialog moves capturing the meanings that agents convey, its dependance on the context, but also agents disagreements and disputes. How do we model the rational choice of the next thing to say?

We first review some major theories of discourse structure and propose a unified formalism to switch from one to another, and a novel understanding of the different sort of information that these theories respectively encode.

A second body of work (parts II and III) focuses on the modeling of conversational meaning and its interaction with that of rationality in conversations, more specifically strategic dialogs, where the interest of the participants diverge. We propose a game theoretic account of such conversations within a new perspective: conversation as infinite sequences of linguistic moves. Crucially, we can explain why a player adopts a given set of winning sequences on semantic grounds: using a logical representation of the meaning of a sequence of moves (using e.g., Segmented Discourse Representation Theory), we can formalize linguistic constraints that are generic necessary conditions on successful plays (staying coherent, consistent, credible) and describe agents' preferences in terms of the contents that agents commit to. We show on this basis how and when inferences to non-literal meaning survives or are cancelled.

This requires a semantics expressive enough, we therefore define a dynamic logic of (nested) commitments and integrate it in SDRT. This allows to represent participants' commitments about the content of theirs, or their opponent's moves, and keep those representations subject to a sound notion of logical consequence (and hence, of consistency). This yields also a formal account of acknowledgment and grounding that is more formal and fine-grained that traditional approaches, which we can recover as particular cases.