

On some effects of lexical contrast in information-oriented dialogue

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1 Introduction

Although CMs are pervasive in information-oriented dialogues in Italian, their roles still need to be interpreted within a unified framework. A preliminary corpus study of the CMs of Italian *ma* and *invece* within the travel domain shows that their behaviour can be sensitive to the dialogue structure modelled in terms of topic and common ground units (CGU) (Traum, 1999) and can depend on information management and grounding. Such notions refer, respectively, to the negotiation of information -the dialogue content to be grounded as relevant to a current task- and to the coordination activity by which participants achieve *common ground* (CG), or a common mental state of *agreement*¹ about the negotiated information, which is the cognitive context where the negotiation takes place. The topic is intended as being the current *question under discussion* (QUD) (Ginzbourg, 1998) and hierarchically organized in global QUDs (GQUD), containing main topics and local QUDs (LQUD), containing subtopics. We assume that, in information-oriented dialogues, the hierarchically lowest-level subtopic can be the discourse entity of a LQUD discussed by participants as an alternative solution to an issue under negotiation (Larsson, 2001), and that topical entities, given or new, are linked to the cognitive context in terms of activation degrees, i.e. active-semiactive-inactive (Chafe, 1994), in the speakers' CG. The topical entities packaged in an utterance *theme* are seen as local cotextual instantiations keeping track of the status of the dialogue topic in the speakers' CG. If to be grounded, they can be brought to the interlocutor's attention through prosodic focus. Following these premises, CMs are

¹ We intend the grounding process as consisting of the coordination and alignment of dialogue management at several levels, towards an quasi-shared mental state, rather than as implicating the philosophical notion of mutual understanding.

associated to topic status in the speakers' CG and to grounding phases such as presentation, whereby a topic is introduced to the CG, and acceptance, whereby a feedback is provided to evidence whether the presented topic has accessed the CG. The positive feedback for established CG is the *acknowledgement* dialogue act (Traum, 1999).

3 Corpus study and discussion

We analyzed occurrences of the above mentioned CMs through 150 dialogues, in which *ma* and *invece* respectively exhibit the discourse functions discussed here. In the representative example (1), the contrast cannot be modelled as concessive due to the lack of a *tertium comparationis*, or a claim for which a positive and a negative argument are provided in the context. Furthermore, the CM is neither a topic shifter nor a turn-taking device, used, according to Bazzanella (1991), to interrupt the interlocutor's turn.

(1) **GQUD:** *Il RITORNO, cosa voleva?*

The return, what did you need?

C.1: *Il ritorno, le avevo detto domenica, domenica pomeriggio, sul presto.*

The return, I said on Monday, Monday early in the afternoon.

LQUD: *Si. Ma come ORARIO?*

Yes. *But* as for the HOUR?

In the exemplified context, *ma* occurs after the acknowledgment *si*, which positively feedbacks the acceptance in the CG of the information distributed along with the topical hierarchically organized *continuum* GQUD1:“return”>LQUD1:“Monday”>LQUD2:“afternoon”>LQUD3:“early”.

Ma intervenes at the step LQUD3 and is positioned at the beginning of an elliptical open question about the entity in focus *orario*, to be co-activated in the CG because relevant for the current negotiation. The contextually given information in S.1 needs to be revised/clarified, because a missing informative parameter has to be supplied at the level of the LQUD3 related to the hour.

Consequently, the CM partly contradicts the previous *si* and blocks the acceptance phase by signalling that the CG has not been fully reached. By playing the reorientation function of redirecting the interlocutor's attention towards a more specific topic to ground, the CM cues the initial boundary of a sub-CGU, in which a new presentation to the CG explicitly requires the clarification of some inactive information about the missing informative parameter. Though still placed at a beginning of an elliptical open question representing a LQUD, the CM *invece* in (2) conveys a different kind of contrast. The host LQUD asks about new information as regards the given and supposedly semiactive topical entity in focus *Meridiana*, which has to be co-activated in the CG in alternative to the contextually given entity *Alpi Eagles*. A prototypical issue under negotiation is profiled, where the first alternative has been explicitly grounded so far by the acknowledgment *va bene*. The polar alternative is placed at the same level of the topical hierarchy within the current topic *flights*.

(2) **GQUD**: *Vediamo un po' quali sono i voli.*

Let's have a look at the flights.

O.1.: *Sì. Allora, prima di mezzogiorno, con l'Alpi Eagles, ci sarebbe un volo che parte da Roma alle dieci mattina e arriva a Verona alle undici.*

Yes. So, before midday with Alpi Eagles, there is a flight which leaves from Roma at 10 a.m. and reaches Verona at 11 a.m.

C.2 : *ah va bene.*

Ah, OK.

LQUD: *Invece con la MERIDIANA?*

Instead with the MERIDIANA?

The CM establishes an anaphoric link to the CGU in which the first alternative to the current issue has been discussed, by providing an instruction *instead of X->Y* for the interlocutor to update her information state by replacing the contextually given alternative $X=Alpi\ Eagles$ with the entity $Y=Meridiana$. *Invece* contributes to a speaker's change-of-perspective local strategy of negotiating alternative solutions to a same issue. In (3), *invece* is involved in a more global topic-change strategy.

(3) **GQUD**: *Avrei bisogno di alcune informazioni sui treni Roma-Verona per partire venerdì 15 settembre e rientrare domenica 21.*

I need some information about the Roma-Verona trains, to leave on Friday the 19th of September at 8 and to come back on Sunday the 21th.

1 O : *Venerdì 19, c'è un treno alle 8.35.*

The 19th, there is a train at 8.35 a.m.

2 C : *Benissimo. Perfect.*

3 O : *OK. Per il RITORNO invece, c'è un treno alle 16 da Roma. Può andar bene?*

OK. As for the return *instead*, there is a train from Roma at 4 p.m. Is it OK?

4 C : *Alle 16, potrebbe andar bene.*

At 4 p.m., it should be OK.

After the acknowledgement *Ok*, which grounds the topic *departure* of the sub-CGU 1O-2C, the CM falls, significantly, in the left-detached contrastive theme *per il ritorno*: it instructs to substitute the grounded topical coordinate with the one indicated in the host theme (*instead of X->Y*). The CM opens a new CGU and inaugurates the negotiation of a new topic. It plays a meta-cognitive function at the ideational level of dialogue structure, while interacting with grounding process.

We have proposed to uniformly interpret some CMs in information-oriented dialogues according to different kinds of contextual polarities due to the interplay between information management and grounding. Further work intends to account for other CMs, by studying their interplay with other kinds of contrastiveness and providing statistical analysis of their distribution in corpora of different domains.

References

- C. Bazzanella. 1991. I segnali discorsivi. In L. Renzi, G. Salvi, A. Cardinaletti (eds.), *Grande Grammatica Italiana di Consultazione*. Il Mulino, Bologna.
- W. Chafe. 1994. *Discourse, Consciousness, and Time*. Chicago/London: University of Chicago Press.
- J. Ginzburg. 1998. Clarifying Utterances. In *Proceedings of the 2nd Workshop on the Formal Semantics and Pragmatics of Dialogue*, Twente.
- S. Larsson. 2002. . In *Proceedings of the 3rd SIGdial Workshop on Discourse and Dialogue*, Philadelphia, pp. 103-112.
- D. Traum. 1999. Computational Models of Grounding in Collaborative Systems. In *Working notes of AAAI Fall Symposium on Psychological Models of Communication*, pp. 124-131.
- C. Soria, R. Cattoni, M. Danieli. 2000. ADAM: An architecture for XML-based Dialogue Annotation on Multiple Levels. In *Proceedings of the First SIGDIAL Workshop on Discourse and Dialogue*, Hong-Kong, pp. 9-18.