'CO-ALIENATION' MEDIATED BY COMMON REPRESENTATIONS IN SYNCHRONOUS E-DISCUSSIONS

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Abstract. Synchronous e-discussions have become common social practices in and out of educational institutions. Socio-cultural psychologists have suggested that intersubjectivity is central for maintenance of face-to-face communication. We study here how communication is maintained in synchronous discussions and whether intersubjectivity is reached. Four university students used a CMC tool to discuss an educational issue. One week later, each student was interviewed on his/her views on the issue. Then, the technique of cued retrospective reporting was used to uncover how each student interpreted each move of the synchronous discussion. The cross analysis of the interviews and the reporting showed that actions were not co-ordinated. Agreements and disagreements were not shared, and order of actions was quite whimsical. We conclude that intersubjectivity was not established. However, communication was maintained through a process of *co-alienation* – the juxtaposition of incompatible alignments of representations through a common external representation. Although co-alienation is problematic, we show that discussants could learn from the e-discussion.

Four Senses of Intersubjectivity to Account for Maintenance of Communication

The notion of intersubjectivity was elaborated to account for maintenance of communication in practices that lead to development and learning. The social practices of synchronous (electronic) discussions are newcomers that seem strange to educators or psychologists: People seat alone by their computers and interact with others they don't see and often don't know. The interactions are often lopsided, interrupted and rudimentary. How can learning occur? Is it possible to discern any kind of intersubjectivity in synchronous discussions? We approach these questions in this paper. A necessary step in this enterprise is to come back to the different senses intersubjectivity has received to account for maintenance of communication.

The historical origins of *intersubjectivity* are philosophical: From Husserl, to Heidegger, Levinas or Gadamer, philosophers have asked the transcendental conditions of the possibility of dialogue, of the existence of the other. These philosophical steps led to consider intersubjectivity as an idea that explains how empathy develops between people or how people reach new meanings together. Socio-cultural psychologists adopted this togetherness view of intersubjectivity to become a central idea in their theory of human development. Intersubjectivity was primarily meant to express a general idea of overlapping of subjectivities or *prolepses* (Rommetveit, 1979; 1985) – communicative moves speakers take for granted things that have not been (yet) discussed. Even before language is mastered, a baby is born anticipating a sympathetic, interactive social environment. Another sense of intersubjectivity refers to the construction of a *shared meaning* by people to interpret social and cultural life, or a specific situation. This sense is very frequent in adults' guidance of children's explorations. It has also been adopted to describe some situations of collaboration among peers, for example, when jointly solving problems. A different sense given to intersubjectivity – *shared divergences of meanings,* is necessary to understand how practices such as lying, disputes and jokes "work". Lying is genuinely inter-subjective as it operates between two subjective definitions of reality. Disputes, for example, are fueled by the common recognition of divergent views on a situation. So far, the senses of intersubjectivity we reviewed have in common the sharing of subjective states by two or more individuals, and stress that shared cognition and consensus is essential in the shaping of our ideas and relations.

But intersubjectivity may occur without any sharing. To make clear this new sense of intersubjectivity, Matusov (1996) observed a succession of discussions on play craft among elementary school children mediated by a teacher. Matusov showed that in the disagreements some students raised no idea or no opposition to any idea. Rather, although a fierce disagreement arose among children, the disagreement for some turned around ownership of the play crafted while the other students thought it was motivated by a better play craft. Matusov concluded that a new sense of intersubjectivity should be elaborated, a process of *coordination of participants' contributions in joint activity*. In such cases, an observer can extract from the social activity a thread of compatibility of actions, that is, an interpretation encompassing the goals of each participant, and which is coherent. Matusov considered other situations in which meaningful communication can be maintained – situations in which teachers or students care for others and help them understand, develop, or own what they already master. Communication in this case is maintained but calls for another sense of intersubjectivity, that of

agency to features concerns by teachers (or students) that are shared by the ones about which they care (Matusov, 2001).

The studies mentioned above on the different types of intersubjectivity involved face-to-face communication. The diversity of communication practices grows extremely rapidly, as various forms of e-discussions gain popularity. We show that the sense of intersubjectivity as sharing of subjective states among several individuals, cannot be retained for certain synchronous discussions. The question is then how communication is maintained? And is it possible for discussants to learn from such discussions? Those are harsh questions that we will approach in this paper in the case of synchronous e-discussions with a particular tool for facilitating *collective argumentation* in synchronous discussions (Schwarz & Glassner, 2007). This particular tool is representative of a quite large set of tools for facilitating e-discussions that displays a representation of the on-going discussion, including its whole history. We will claim that this gradually produced representation (called here an *argumentative map*) which is shared by the discussants while participating in their discussion, enables maintenance of meaningful communication among them, although possibly no idea is shared and no coordination of actions is attained during the discussion. In an example, we will show that the argumentative map produced by the discussants will serve as an artifact for projecting personal interpretations of the synchronous discussion so far, which would have probably led to ruptures if communication would have been face-to-face. We will point at the cohabitation of incompatible prolepses, or what we call *co-alienation* along with new kind of communication. We will show that the discussants can learn from such discussions. We will discuss whether in this case, a new sense should be conferred to intersubjectivity. But, before we delve into the analysis of the synchronous discussion, we first review what is known in communication studies about synchronous e-discussions. As we will see, this review appears to be highly relevant to the issue of maintenance of communication.

A priori, e-discussions seem detrimental to maintenance of communication, hence, by definition, to intersubjectivity: In spoken discussions, joint attention is very often maintained. Turn-taking is determined by facial expression, pause of the other, intonation, or simply interruption. Overlaps can occur but they generally occur through gestures, or facial expressions. In contrast, descriptive studies of computer-mediated communication (CMC) suggest that maintenance of communication may often turn to problematic: time lag between when a message is sent and when it is responded to, disrupted turn adjacency, overlaps with unrelated messages from other participants between an initiating message and its response (Murray, 1989) are characteristic problems in e-discussions According to Herring (2001), these problems are responsible for incoherence, and for topic decay – the fact that discussants rapidly discuss less and less the topic at stake during e-discussions. On the other hand, e-discussions are attractive: CMC communication is based on the availability of a *persistent* textual record of the interaction. Persistent conversation appears to aid the user's cognitive processing. The predilection towards meta-humor and meta-play in CMC may be attributed in part to the fact that CMC persists as text on a screen and is subject to conscious reflection in ways that spoken language is not, thereby facilitating a heightened meta-linguistic awareness (Cazden, 1995). This short review suggests that studying maintenance of CMC communication is worthwhile.

Studying Maintenance of Communication in Synchronous Discussions

The context of the present study is educational. Discussions took place in a University course on *The Role of the Teacher in Classroom Learning*. One of the themes of the course was to focus on the role of the teacher in structuring interactions in group work. In addition to theoretical lectures, the teacher provided a CMC graphical tool for facilitating group e-argumentation, and for reflecting on ways teachers could intervene during discussions (Schwarz & de Groot, 2007). This tool named *Digalo* enables the management of discussions and the representation of their argumentative processes and components among participants. Using Digalo consists of co-creating maps built of written notes inside different shapes that represent the permissible argumentative moves for the discussion (or what is called the *ontology* chosen for the discussion), and different arrows representing different connections between the shapes. The ontology chosen in the course included Claim, Argument, Explanation, Comment, and Question. There are three kinds of arrows: support, opposition, and link. The support and opposition arrows help challenging, refuting, elaborating, or agreeing. In each of the contributions, participants add one shape or more and arrows/links to shapes built by others to articulate own claims, arguments, etc, and then write their contribution inside of the shape(s) they chose. Figure 1 shows the Digalo map on which we will focus in this paper.

11 graduate students participated in a university course. This article focuses on one of the discussions in the course. Judith is a 26 years old graduate student in Educational Psychology. Fatima and Rim are students in Education in their twenties. Ahmad is a 47 years old teacher. In a first session, students were introduced to Digalo and conducted two "warm-up" discussions during which they learned technicalities. They were then arranged in groups of 3-4 and asked to resolve a moral dilemma. The presentation of the ontology was accompanied by a suggestion to follow a series of ground rules of conversation developed to instill dialogic and

dialectical talk (e.g., "you should provide reasons to support your viewpoint", "You should challenge any idea", "you should answer to challenges or questions with respect").
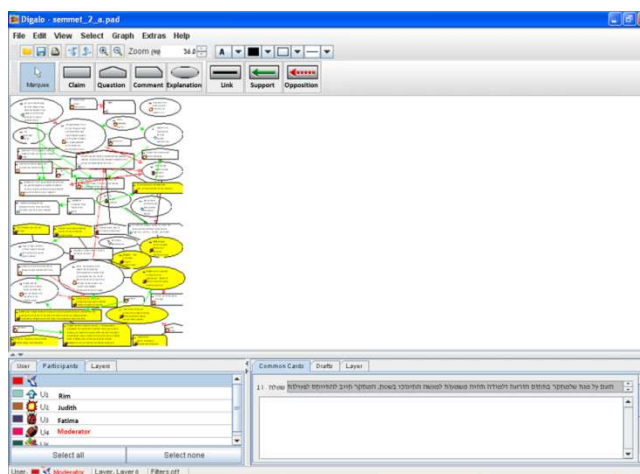

Figure 1. A Digalo Map

At the end of the first session, the students were given two articles to be read before the next lesson. Both articles related to the issue of guidance in discussions. Both articles suggest that the total absence of guidance during discussions is rarely productive but that moderation, a kind of guidance which is caring but not intrusive, may be one way to help students in their discussions. One moderator was designated for each group, and was asked to insure that discussants follow the ground rules we presented. One week after, all students sat by their own computer at distance from each other. The issue to be discussed was "Is it indispensable for research on classroom learning to account for the teacher's activity?" The discussions lasted around 30 minutes. Two weeks after the discussions, we meet with each of the discussants. The first part of the meeting was an interview in which the students were asked on the role of discussions in learning and on the role of the teacher in discussions. In the second part of the meeting, each student underwent a cued retrospective reporting (Van Gog, et al., 2009) in which he was presented the progressive reconstitution of his argumentative map by using the replay option of the Digalo software: whenever the interviewer clicked, the map grew by one argumentative move. Students were asked to explain their moves, thereby give their interpretation of each argumentative move, such as peers' or moderator's interventions, own reactions to these interventions, and to figure out the goals and expectations. Each of the meetings lasted around two hours.

Three Incompatible but Cohabitating Stories by Three Discussants

How was the discussion perceived by the participants in each of its moves? To answer this difficult question, we had at disposal the Digalo map they gradually produced, and the cued retrospective of Judith, Fatima, and Ahmad with the replay of the map (Rim, did not agree to participate in the retrospective). The preliminary interview of the discussants provided an indispensable background to interpret the e-discussion. We will insert some insights from the interviews to complete the discussants' interpretations of the discussion in their cued retrospectives. As we will see, interpretations were quite divergent: they did not convey shared understandings, or even coordinated actions. Since the nature of communication was so precarious, the division of the discussion in episodes was a difficult enterprise: some moments could represent boundaries for some discussants, while they could be apprehended as in the middle of a move by others. Our approach was to propose a division into episodes according to clear changes in patterns of interaction. The discussion includes 49 contributions. The first episode – Turns 2-20 is characterized by the non-intervention of the moderator, and the quite equal participation of the three discussants. The second episode – Turns 21-37, is characterized by the participation of all discussants, including the moderator, who sends messages to all discussants. The pattern of interaction is quite centralized. In the third episode – Turns 38-49, the moderator continues to send messages to all discussants but only one discussant is responsive.

1st episode: Starting the discussion without moderator – accumulating similar contributions

The beginning of the discussion is characterized by short contributions in which no challenge is raised. Rather, the map seems to grow with contributions that express the same point: at Turn 8 and 13, Fatima writes *In my opinion research should refer to the position of the teacher, no one can overlook him!* and *I agree with you* (what is written in the e-discussion is in underlined italics to differentiate it from what is said in the interview);

at Turn 11, Rim writes *In my opinion, any research on learning and instruction should refer to all the directions, students, teachers, parents, school*. Judith writes at Turn 12 *We all agree. Is it possible?* and ostensibly links this recognition of agreement to all previous interventions with arrows of support. Ahmad did not make any contribution in the first episode because he faced technical problems. However, as he later reported, he watched the map, and thought how to act in this situation. We will see that all participants interpreted this situation differently and that their interpretations relied on their beliefs regarding the role of discussions in learning, and the role of the moderator and of the discussants in e-discussions.

Ahmad: Discussants do not really refer to each other; they agree instead of thinking in depth. When Ahmad observed this discussion in his cued retrospective, he reacted: *the participants began by throwing out ideas… and then everybody agrees, agrees, agrees, and in fact, I don't know about what*. In his view, what happens here is *disagreement which is called an 'agreement'*. When Ahmad read Judith's contribution at Turn 12 (*We all agree. Is it possible?*), he felt that *this means that we are afraid of ourselves. Is it possible that we agreed? On what did we agree? We agreed on one sentence [...], the fact that the teacher should be at the center of research and should look at the students. But we didn't formulate this properly*. He recalled the importance of collaborative learning to contrast it from the '*railroad parallel tracks*' (sic) that characterized the beginning of the talk. Ahmad thought that discussants should slow down their pace and begin to read others' contributions to *uncover their real meaning*. Ahmad raises an additional idea, the importance of *formulating own opinion* or of *creating own position*. He criticized the Arab society to which he belongs, that does not enable young people to think autonomously: *the Arab society is clearly patriarchal. The father decides on everything, and everybody has… sometimes, this is not the father, this is the grandfather [...] and everybody must tell him 'yes' and nobody argues with him, nobody argues with him about things that are important in their lives. The society was built in a way that only when you get old, you can think, you are allowed to think. Before you are old, you must listen, you must accumulate wisdom*. It seems that Ahmad sees the problems of his society through the lenses of Rim and Fatima's contributions.

Judith: It is impossible to learn from this discussion. As she read the contributions of the other discussants in her auto-confrontation, Judith reminded that she had no interlocutor for a real discussion. For example, her reaction to Rim's contribution at Turn 7 (*I agree with your opinion Ahmad that the teacher should be a partner*) is: *It seemed to me that it's not enough articulated [...] it means to say 'yes' to the main issue, but this is not enough [...]. I felt that I don't have any interlocutor with whom to argue*. She compares her pace in her contributions to theirs to say: *see how much I write [laughing] ...I felt that they don't move*. Judith was interested in changing this situation: *I tried again and again, as much as I could, to move things*. She commented on her contribution at Turn 12 (*We all agree. Is it possible?*), that she linked with arrows of support to all previous contributions) as '*a bit cynical*'. For her, the contributions of the others are like building bricks, and each discussant should bring personal contributions of high quality, original, and warranted: *When you express only your opinion, without going deep into it, without explanations, without bringing citations, warrants to what you say [...], it's **superficial***, *it's to remain in 'I think that'*. It is then understandable that she is disappointed by the beginning of the discussion. In spite of her disappointment, Judith continued reacting to her interlocutors and expressed her opinion with the hope that it would develop as a more interesting discussion in which she will have opportunities to explain her position. Differently from Ahmad, she put the responsibility for the learning in the individual rather than in the group. However, she thought that *the discussion quickly became purposeless.*

Fatima: The discussion is successful because people express themselves and the moderator is not intrusive. As Fatima read Judith and Rim's contributions, she thought that the discussion was *excellent, not only good* at that stage: *each of the discussants expresses what she has*. For her, this situation is surprising and does not necessitate any moderator. Fatima asserts that the discussion is successful because it does not stop after the first contribution: *They [the discussants] forgot that there is no moderator and continue talking onward*. When reading Judith's Turn 12, she understands that Judith wants to serve as the moderator. She does not identify any cynicism in Judith's intervention (as meant by Judith). Rather, she interprets this turn as a sincere request to figure out the intentions of the discussants: *She [Judith] wanted to take the role of the moderator who tries to understand whether we all are on the same wavelength, whether we agree on the same things or not*. In her opinion, this role is not necessary: *the discussants are interested in this topic ... We want to go on although we have no moderator*. Fatima's satisfaction is consistent with the opinions she uttered in her interview: for her, discussions contribute to learning by the simple expression of diverse opinions. She expresses her surprise that the discussion goes on without any guidance, since, according to her experience, *students do not speak* and the role of the teacher is to cause them to speak. Understandably, since students speak, the moderator is unnecessary.

Second episode: Ahmad tries to change the flow and the quality of the discussion
The discussion which began with ungrounded agreements between the discussants, developed into a harsh dispute: Fatima and Rim argued that the student is at the center (Turns 14, 16, 19), against Judith who argued that opposed this view and added that it is impossible to take into consideration all the variables that are relevant to the educational field (Turn 18). Initial agreement quickly turned to a harsh polemic. At this point, Ahmad succeeded to enter the discussion. At Turn 21, he writes: *Let's make some order here, we should know on what there is an agreement*. At Turn 27, he intrudes into the gist of the discussion by asking the question: *What do you think about the saying according to which the student is at the center and the teacher only disturbs in his learning?* However, the discussants do not change the way they discuss the issue. The map fills up with short interventions popping out at a dizzying pace. Ahmad, who tries to stop this trend by writing (in Turn 30) *Please stop throwing out things without seriously referring to what is written* immediately receives Rim's reaction *We don't simply throw out* (Turn 31). In Turn 33, he links Turn 31 to her contribution in Turn 11 where she previously wrote *In my opinion, any research on learning and teaching should take into consideration all the directions – students, teachers, parents, school*, to ask (in Turn 33) *U1 what about opening the idea in contribution 11.* This subtle move seems to point at Rim's incoherence, but she is not sensitive to it.

Ahmad: Efforts to organize the discussion, and to foster collaborative learning. In his auto-confrontation with this episode, Ahmad complains that the lack of reference to others' ideas originates from the fast pace of the discussion: *Too much, too fast, things they threw up. I had the feeling that it's raining.* Ahmad tried to lead discussants to scrutinize the ideas of each other and to refer to previous contributions expand them, or, in his own terms, *to open them.* In his opinion, the presence of different discussants facilitates the consideration of multiple perspectives and naturally leads to the necessity to explain. Consequently, Ahmad tries to slow down the pace of contributions. His comment of his contribution at Turn 30 (*Please stop throwing out things without seriously referring to what is written*) is: *So, I explained that you should be more focused, more ordered [...], that you should stop, that you should think. Because there was such a deluge of contributions.* This comment conveys a quite high emotional state against the behavior of the discussants.We already saw that Ahmad entered in the middle of the discussion (e.g., in Turn 27: *What do you think about the saying according to which the student is at the center and the teacher only disturbs in his learning?*). Viewing Turn 27 he explained: *I came to tell those who agreed: listen... there are other viewpoints...From the beginning, I didn't know on what they agree and on what they disagree. I try to position a conflicting viewpoint, an antithesis...to arouse the issue.*

Reaction to Ahmad in Ahmad's eyes: The discussants do not agree with his description of the situation. In his cue retrospective with the reaction to his injections, Ahmad assessed that the discussants adopted a negative position: When in Turn 31, Rim writes: *We don't simply throw out*, Ahmad comments: *This means that Rim thinks that what she says is important and is not superfluous. This means that she doesn't agree with what I said [at Turn 30]*. Ahmad considers Rim's contribution as a disagreement on the definition of the situation in which the discussants are evolving. To handle this disagreement, he attempts to model his viewpoint in Turn 33 by writing *U1 what about opening the idea in contribution 11* with a link to Rim's opposition at Turn 30. Ahmad comments: *I linked this [Turn 33] to 31 to say that if people don't refer to that, this means that they write for no reason [...] because she said that this is not without any purpose*. And Ahmad continues: *her contribution [Rim's contribution] at Turn 11 in which she says 'In my opinion, any research on learning and teaching should take into consideration all directions, students, teachers, parents, school' is good, there is a lot of content here, but one should develop it, I mean that we should elaborate upon it, explain and warrant it. It was written and no one referred to it. It's a pity that it passes by without mention [...]. This was my intention, that if one does not develop these ideas, he writes without any purpose.* (Rim did not react to this intervention). Ahmad's comments show how he used the Digalo map to convey suggestions to the discussants to improve the quality of the discussion by referring to previous contributions. When Ahmad affirms *I linked this to 31 to say that it was written and no one referred to it **so it has no sense***, he makes clear that the growing map is a central artifact for constructing a shared meaning. The way Ahmad reacts to Rim's disagreement totally fits his positive approach to criticism and his demarcation from blind agreement. In the rest of the discussion, Ahmad acted to lead discussants to refer to what their peers write by requesting them to refer to specific contributions, by presenting them an idea that opposed what they wrote to one discussant.

Judith: The moderator was not noticeable. Judith attempts to justify the fact that she and her peers did not react to Ahmad's contributions by pointing at technical mistakes that Ahmad did, despite his good intentions. For example, in her comment on Turn 30 (*Please stop throwing out things without seriously referring to what is written*), she admits that this intervention can help the group in organizing and promoting the discussion: *The moderator belongs to the group. And he represents the goal which is common to all members of the group [...] to take a decision, or to reach a conclusion. And this is the role he has – to help in this goal*. Judith comments that in his interventions Ahmad complies with his roles of moderator. However, Judith estimates that he failed because he did not benefit from the visual aspect of Digalo: *He says important things, but does not locate*

himself properly ... he does not think about that. Do people listen to him, don't listen to him, see him or don't see him? And indeed, it seems as if Judith did not notice Ahmad contributions at all and she assumes that the same happened to the rest of the discussants. In her comment on his contribution in Turn 30, she explains: *I didn't see him at all; in my opinion, it's very important, and if nobody notices you, you can't organize a discussion*. She suggests that Ahmad could have created a personal reference at the right place *in the middle of the map and he could link it to everybody's last contributions with arrows; not to put himself like that, on the side, in the corner*. For Judith, the growing map is a central artifact for constructing shared meaning. Judith does not put all responsibility for this failure on Ahmad but mentions that the map is in disorder, and contributions hide one another, something which makes it difficult to organize a discussion.

Besides this critique, Judith praises Ahmad for his efforts to improve the quality of the discussion. While she notices that his contribution in Turn 30 (*Please don't throw out things without seriously referring to what is written*) is a bit harmful, she asserts that the idea is good: *the discussants really do not devote enough thought on their contributions*. Although she claimed that she didn't notice Ahmad, it seems that Judith reacted once to Ahmad's effort to promote the quality of the discussion, and when he wrote that one should take advantage of what the authors of the papers wrote to see what pros and the cons are to write in Turn 36: *We saw in Howe's research that interventions by the computer are equivalent to interventions by the teacher. But I claim that still, a teacher was necessary to organize this computer event. So it's impossible not to refer to the teacher.* We have here one of the rare moments in which a reaction is made on the basis of a shared understanding. Also, as Judith attends Rim's disagreement and Ahmad's reaction, her interpretation is: *The moderator tries a new way, as he didn't succeed in explaining himself [...] He shows her what he means, what is my problem with what you said*. This interpretation fits Ahmad's explanation of his act. But Judith was surprised to see Ahmad trying another way to lead discussants to act more effectively, rather than simply doing it instead of Rim. The difference between Ahmad's and Judith's reactions corresponds to their perception of the role of moderator. Judith lacks the vision of a moderator as a manager that Ahmad has. In her cued retrospective Judith appreciated how Ahmad tried to promote the quality of the discussion. However, she sees in his failure a lack of clarity.

Fatima: The intrusion of the moderator turns the discussion to uninteresting. In her cued retrospective, Fatima is quite resolute about her feelings towards what she sees as the intrusion of the moderator. She considers Turns 30 and 33 as examples of bad guidance. Turn 30 (*Please stop throwing out things without seriously referring to what is written*) is totally unacceptable: *This is not OK...he was not with us at the beginning, and he can't tell us such things*. She justifies Rim's reaction in Turn 31 (*We don't simply throw out*). Such an intervention from the part of the moderator *does not encourage the continuation of the discussion*. She interprets Ahmad's link to Rim's contribution in Turn 31 in his contribution (Turn 33: *U1 what about opening the idea in contribution 11*) as *a way to ask questions on claims that were far away and he wants us to return to Turn 11, what's the link?* And Fatima goes on explaining: *He has to know that many things happened since then. So, his reaction here [in Turn 30] is not interesting at all and is connected to nothing [Fatima does a gesture of 'going away' with her hand]*. Fatima feels that the rest of the activity of the moderator is even worse as he does not show any interest in her and Rim's reaction. Her feeling is based on the pace of his contributions in Turns 30, 32, and 33: *He didn't wait for our reactions. Rim reacted but it doesn't seem that he waits that somebody else reacts, or asks a question anymore*. This kind of behavior leads Fatima to stop contributing, yet she kept reading the discussion, which she found to be "not very interesting": *I only read. In the discussion, I read all the contributions and this was not very interesting*. Fatima's feeling is mediated by the fast development of the map (done by the other participants) which conveys for her a lack of consideration from the part of the moderator. Fatima's interpretation is consistent with her feeling of satisfaction in the first episode, when Ahmad did not intervene. It also fits what she said in her interview about the detrimental role of the teacher in discussions between students. In accordance with this view, Fatima opts not to react to Turn 30 that she considers as harmful. Rather, she reacts to Turn 27 (*What do you think about the saying according to which the student is at the center and the teacher only disturbs in his learning?*). She explains this choice by asserting: *In that way, he doesn't say that all what we said before doesn't matter or is nothing...in some way, he took what we already said and the main issue and assembled them together. He gave us a second question, a question more or less connected to the main question and to what we said before*.

The end of the discussion: a common summary or the moderator's aggressive coercion?
We can't enter into derails in the end of the discussion. Its dynamics changed in comparison to what happened so far: The moderator referred to Judith's contributions, and she reacted to them. Ahmad gave to Judith ideas that complete or challenge the ideas she brought forward. Judith identified this new style as that of *a challenging moderator*. Judith responded by adding more ideas or more details to ideas already expressed. She felt that there is a learning layer in the discussion, and also learns from the inventive strategies he adopts to go deeper in

the discussion and to improve its quality. In contrast, the two other discussants vanished from the scene and did not contribute even when Ahmad turned to the whole group to refer to the discussion in a reflective way. Ahmad's attempt to instigate a common conclusion encountered Judith's strong opposition, who was happy that she could finally develop her own ideas and who thought that the opinions brought forward by Rim and Fatima are not academic enough. Judith saw in their desertion from the discussion an additional proof of their weakness and of their lack of motivation, whereas Fatima and Rim' e-silence is for them all but a lack of attendance; it is loaded, full of anger, inscribed there on a map that shows their presence.

Conclusion: Co-Alienation Mediated by a Common Representation as a New Manifestation of Maintenance of Communication

The idea of intersubjectivity has been developed to explain how people maintain communication in various social practices. Matusov has discerned several kinds of intersubjectivity that can be classified as (a) overlapping of subjectivities, (b) sharing of (divergences of) meaning, (c) coordination of participant's contribution in joint activity and (d) human agency. By definition, all kinds of intersubjectivity describe diverse forms of states of subjectivity **shared** among several individuals. These instances of intersubjectivity were recognized as being of the highest importance for learning and for development of productive guided participation (Rogoff, 1990). The particular setting of this research has uncovered what we consider as not being classifiable to any of these categories: the interview uncovered very different beliefs on learning, on the role of discussions for fostering learning, on the role of moderators, and on whether Digalo helps discussants and the moderator. We anticipated that these beliefs would come to the surface in the discussion. We expected that disagreement would arise and would be fueled by the common recognition of divergences. The confrontation of the discussants with their previous e-discussion in the cued retrospective showed a different picture. Ahmad, Judith, and Fatima had divergent interpretations of their synchronous discussions, but this divergence was not shared: what was meant to facilitate construction of knowledge from the part of Ahmad was interpreted as brutal interference by Fatima; What was meant to be an exchange of ideas (by Fatima and probably by Rim) was seen as a shallow discussion that does not lead to learning by Judith and Ahmad. There is even not any clear cut between the presence and the absence of discussants: Ahmad's absence in the first episode for technical reasons was interpreted as a welcome 'presence', a tacit agreement to give students the opportunity to talk about the issue at stake without interfering. Clearly, actions are not *co-ordinated*.

How, with all those unshared divergences and the absence of coordination of actions, communication could be maintained? One may argue that the question is not a real one, since during the first and the third episodes there is no real communication among all discussants. However, 'not-reacting-to-a-request' or 'not-participating-actively-for-a-while' are two behaviors that are inherent to synchronous discussions. Moreover, these behaviors are communicative in the sense that they are posted on a shared object, the argumentative map, and each of the participants intends to convey a message. Even in the third episode during which Fatima and Rim remained silent, they are not really out: in her auto-confrontation, Fatima makes clear that she wanted her silence to be posted on Ahmad's face! Fatima is 'in', attentive to Ahmad's moves and eager to convey her anger. So, what kept the group together in this weird communication?

We saw that the nature of tools for synchronous discussion enables to communicate differently from in f2f communication. The discussion map shows all previous moves, their authors, as well as the interlocutors to which they were directed. Discussants use the map to reason, as well as to communicate. For example, Ahmad selected two contributions by Rim, one recent and one remote, to point at some inconsistency. And this map is always present, even for participants who are silent. The growing map mediates the interpretations of the discussants in a way which is radically different from f2f settings. In f2f interaction, interpretations are updated at any moment and adjacent interventions influence more interlocutors than non-adjacent ones (Felton & Kuhn, 2001). In contrast, at the time an actor intervenes in synchronous discussions, he and his interlocutors can see the traces of a whole history. Their interpretations at any time of the discussion are sometimes mediated by previous misunderstandings inscribed in the map, and the discussants cannot instantaneously dissipate misunderstandings as easily as in face-to-face interactions through facial expressions or intonation. The big discrepancies in emotional states – satisfaction against anger, disappointment or boredom against interest, suggest that the map hosted unshared cohabitating misunderstandings. Each participant seemed isolated, the presence of the other being transient. This observation adds up to the analysis of the *cued retrospective reporting* to affirm that **the e-discussion developed without the establishment of any state of intersubjectivity** in a sense of coordination of contributions. In the absence of state of intersubjectivity, we considered different traditions that explain the propensity people have in participating in dialogues. According to a cognitive psychology perspective, dialogues demand a lot from discussants. However, people manage to participate in dialogues. Garrod and Pickering (2004) have proposed the idea of *interactive alignment* to explain this propensity: This is a process by which people align their representations at different linguistic levels at the same time. They do this by making use of each others' choices of words, sounds (in f2f communication),

grammatical forms, and meanings. Interactive alignment ensures that interlocutors operate on common representations. So in speaking, each partner generates his utterance on the basis of what he has just heard from the other and can leave out redundant information without the risk of misunderstanding. Similarly in listening, aligned representations at the levels of the situation model, semantic interpretation, and syntactic form enable the listener to fill in the gaps at these levels. Is the idea of interactive alignment applicable to synchronous e-discussions in general? Not exactly, but it is useful! But it provides some inspiration about for an alternative idea: Instead of aligning representations at different linguistic levels at the same time on the basis of what has just been heard, discussants interact with a growing map. This map has two contradictory characteristics. On the one hand, it changes instantly; messages arrive often at a hectic pace, sometimes simultaneously from different interlocutors. On the other hand, the map is stable; it mostly remains unchanged, with an accumulating history. The first characteristic seems to invite discussants to *align their representations*. However, discussants are not obliged to react to these messages. The second one leads discussants to rely on past persistent interpretations perpetuated by the map. Anyway, the high pace of communication gives the illusion to each discussant that he/she and his/her peers posted their beliefs about teaching, learning and moderating and interacted with them, and makes clear his/her (dis)agreements. However, what happened was a *co-alienation* – the juxtaposition of incompatible alignments of representations through a common external representation.

At that stage, it is premature to discuss the educational relevance of co-alienation and to decide whether its emergence is a priori welcome or should be avoided. But the question whether co-alienation is utterly bad or whether it can lead to learning, seems to us a wrong question. The right question is how people can learn from such communication. And indeed we can ask whether the discussion between Ahmad, Judith, Fatima and Rim lead to any kind of learning. On the one hand, the discussion in itself seemed quite shallow, scattered with persistent misunderstandings. However, Ahmad and Judith earned invaluable insights during this lopsided discussion. True, this is their cued retrospective that demonstrated clear gains but it is impossible to know whether this reflective activity revealed or promoted those gains. Anyway, synchronous discussions should be considered in their larger educational contexts. They rarely happen as isolated activities but rather belong to a series of activities. The cued retrospective was arranged in the present study for experimental purposes, but it resembles common educational settings in which synchronous discussions are reflected on. The precariousness of communication in synchronous discussions, the state of co-alienation we described, can be dangerous. However, it can serve, with appropriate activities, to improve interactions in discussions among learners.

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