

Sociosemantic and social networks in the context of a deliberative forum

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Words and Networks: Methods Social Semantic Validate

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Abstract: More and more deliberation forums are established with the aim to build a consensus between individuals holding divergent views on various topics.

In this paper, we will explore the links between the sociosemantic network, constructed from the semantic similarities, and the discussion network of the participants at a deliberation forum. We will present the main steps of the data collection and procedure for the construction of the sociosemantic network and then proceed to analyze the links between this network and the discussion network of participants. Results show that people tend, in the context of this type of deliberative forum, to discuss with people who support ideas different from their own which result in a radicalization of their position. Implications of these results for deliberation forums will be presented.

Keywords: Communication, Data Collection, Semantic Networks

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Good afternoon,

Firstly, I would like to thank the organizers of this conference for permitting us to present the preliminary results of my thesis field research carried out last year. My name is François Robert. I am a doctoral student in communications and I am accompanied by Pierre Mongeau, professor at the UQAM Faculty of Communications and my thesis director and Johanne St-Charles, professor at the Department of Communication. The work that we present you with today is in connection with a research centre at UQAM, *Groupe-réseau* UQAM, interested in the relationship between the social and socio-semantic networks (SSN). Let's now look at my presentation outline:

- A. *The methods used (The Lab)*
- B. *Preliminary results*
- C. *Further reflections*

Briefly, I want to present you (before explaining the methodology) my area of research interest. Afterwards, I will **present (A) the methods used** (principally oriented around the Laboratory) . I want to briefly explain to you how we mapped these networks of persons and networks of shared vocabularies. The reason for my presence today is to present you a major outcome in connection with my data, it's the (B) Preliminary results. These results are particularly surprising to us. Finally, some (C) **further reflections**. In the conclusion of this communication, we will trace a few avenues of reflection and work on further developments.

Given that the analysis is not yet finished, I will end this communication on the further directions to explore that will orient my research during the coming months.

Research Question

Before proceeding, here is the question in relationship to the different research interests, including the approaches of citizen participation and deliberative forums, that I have come to ask myself: « ***Is there a relationship between the communication network and the networks of shared discourse of the participants in a deliberative forum? »***

The research group to which I am affiliated has demonstrated, for its part, a positive correlation between the shared vocabulary of participants in work group situations and the social networks over several weeks or years. For this research, it is within a particular context that we have made this observation: during a deliberative forum that we made.

A. Methods : The Lab

Inspired by the *Institut du Nouveau Monde* during their deliberative approaches and Fishkin's (1999) *Deliberative Polling* (See: <http://cdd.stanford.edu/>), we created from scratch a Deliberative Forum (which we called: The Lab), which resumes the principles of a French Canadian NGO (Institut du Nouveau Monde, see: <http://www.inm.qc.ca>) specialized in citizen participation and which formulates its principles as follows: Inform, debate and propose.

To form a deliberative forum, according to the INM (we can translate by **New World Institute**), it is always necessary to take the time to inform oneself on the subject (Inform). Then, it is necessary to confront one's opinion with that of other citizens (debate) and, finally, this deliberation should lead to concrete results, to proposals (propose). Also, for the "Lab" strategy model, we were inspired by Fishkin's work on deliberative polling (Deliberative Poll). Let's now see how this Forum functioned ...

On a cold Saturday morning in January two thousand twelve (2012), 95 people met for 4 hours to listen to 3 speakers on the subject and afterwards deliberate with the others on a hot topic: **The university tuition fees**. For your information, from February to September 2012, Quebec had one of the biggest student strikes in its history. At the height of the conflict, 300,000 students were on strike (that is 75% of the Quebec student body). This conflict without precedent was even baptized the "Maple Spring" (in French: *Printemps Érable*) echoing the Arab Spring (in French: *Printemps Arabes*). It would therefore have been impossible to hold this meeting a few weeks later ...

Fig. 1: Snapshot of the conference room, saturday 28th January 2012

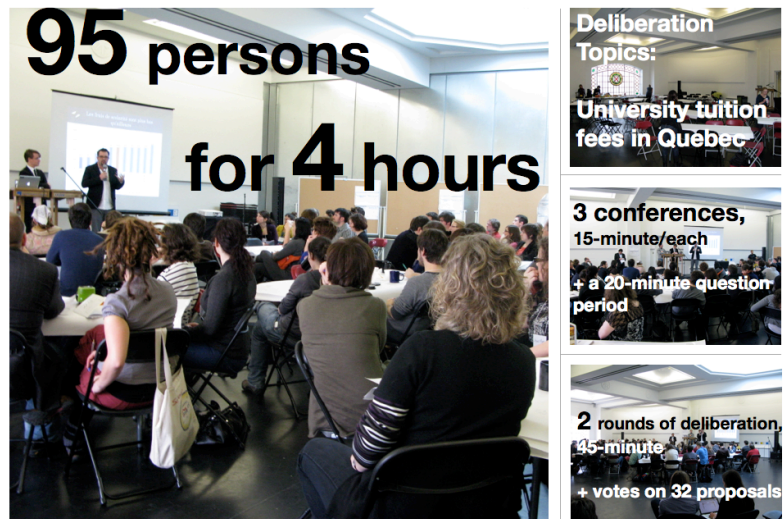


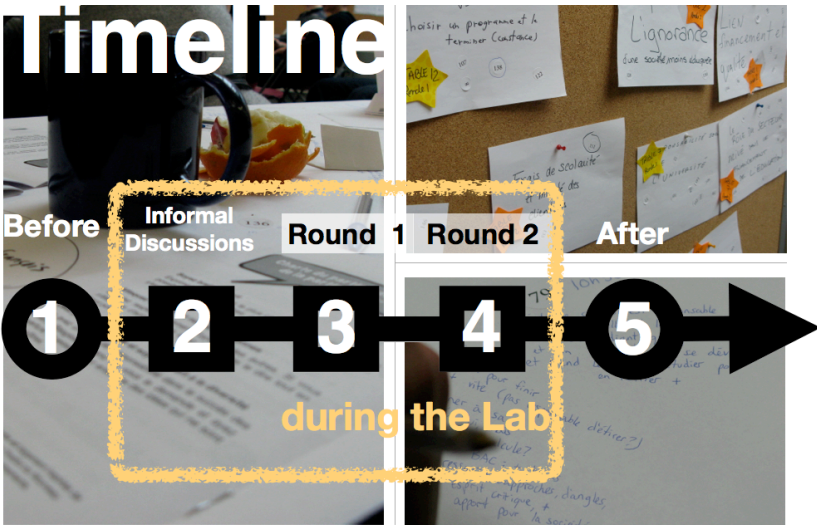
Fig 1: Here we see the images taken on the premises of the day where we are just at the "inform" part, as the participants are listening to the speakers.

The day was a hybrid proposition between the World Café (for the presence of paper tablecloths that the persons could write on) and Harisson Owen's Open Space Technology (for the participants' creation of the deliberation agenda). The day separated first by three conferences of 15-minutes/each and after a 20-minutes question period (more than today). After, it' two round of deliberation of 45 minutes/each.

Participants distribut themselves on 12 tables. Each table can make some proposal that it will be voting by all participant at the end of the Lab. As we have the participants' opinions: BEFORE the Laboratory (entering the Lab, time 1), DURING and AFTER (once returned home, Time 5),

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here is what it looks like on a timeline.

Fig. 2: Timeline and Tablecloths on tables



«living» toll for discourses captation; Board of «Market Place» with deliberation topics; example of note taking on tablecloth.

During the Lab, it's represent three different time: first a time for informal discussions (Time 2). During the arrival at the beginning of the day, the conference and the creation of the deliberation topics. It's time for small talk: How are the kids? How's your new job? etc. After, two rounds of deliberation (Time 3 and 4). Thus, 5 times to collect the information on the shared discourses and the relationships. Therefore, you have understood that Time 1 and 5 it's the time where the participants are not with other participants (circle). And, time 2 to 4 represents during the Laboratory. But let's now get to the method to capture these

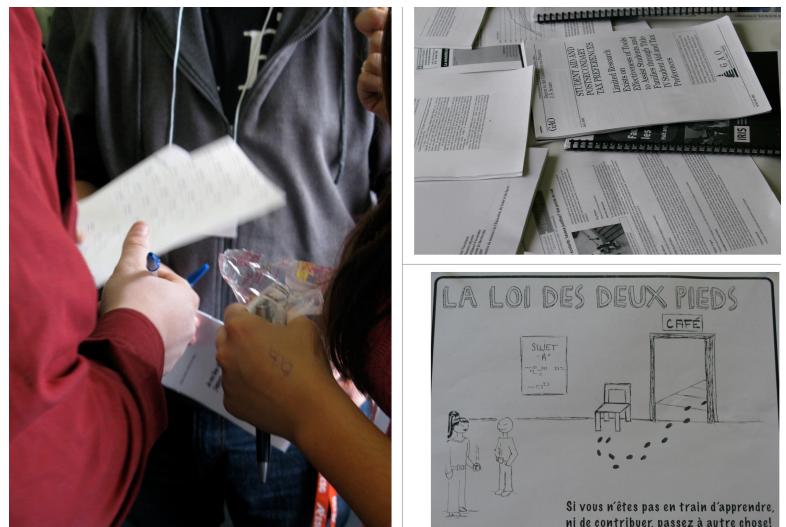
networks ...

Furthermore, two questionnaires were used. First questionnaire BEFORE the Lab where socio-demographic information is requested and, above all, open and closed questions of their opinion on the question of university tuition fees. It's give information to dress a portrait of the participants.

A second questionnaire AFTER the Lab, asked again their opinion on the Lab theme and particularly asked every each person present at the Lab if they had been already in contact BEFORE the Lab (on an intensity of 0-1-2 : which would give us an non-symmetrical social network value) and with whom they recall having been in contact with during the day (thus a social network stated during the Lab – valued and non-symmetrical) This questionnaire give information to find out their existing networks and contacts during the Lab (perceived social network) and their opinions on the Lab question.

To capture the network DURING the event, we chose a rather particular method. Each participant, before entering the Lab, was given a notepad and one hundred **sticky dots of participation** where each participant was indicated by a unique number. This notepad,

Fig. 3: View of the deliberation method



(Left) Participants have a discussion and exchange Sticky Dots of participation. (Right, top) documentation for participants. (Right, bottom) The poster represent the philosophy of Open Space methodology.

as well as serving as a program, permitted the exchange of sticky dots with other participants who were requested to write the time and conversation topic next to the sticky dots.

In addition, on the tables covered with paper tablecloths, participants were requested to stick a dot when they sat down and to jot down the time. Likewise, a little before or after, they were asked to write down on the tablecloths their arguments or ideas discussed with other participants. They were also instructed to place their sticky dots on the proposals they had jotted down. In this way, we can follow minute by minute where the person went and a sample of words exchanged during the Lab.

Finally, at the end of the two rounds of deliberation, all the participants voted with the aid of their sticky dots.

If we come back to the timeline, and now check with Social Network and Socio-Semantic Network. In this way, we can observe two different types of networks:

- A. *Social networks (SN, perceived and observed)*
- B. *Socio-semantic networks (SSN, written by the participants and the traces on the tablecloths and in the notepads)*

Concretely, 5 precise times is observed:

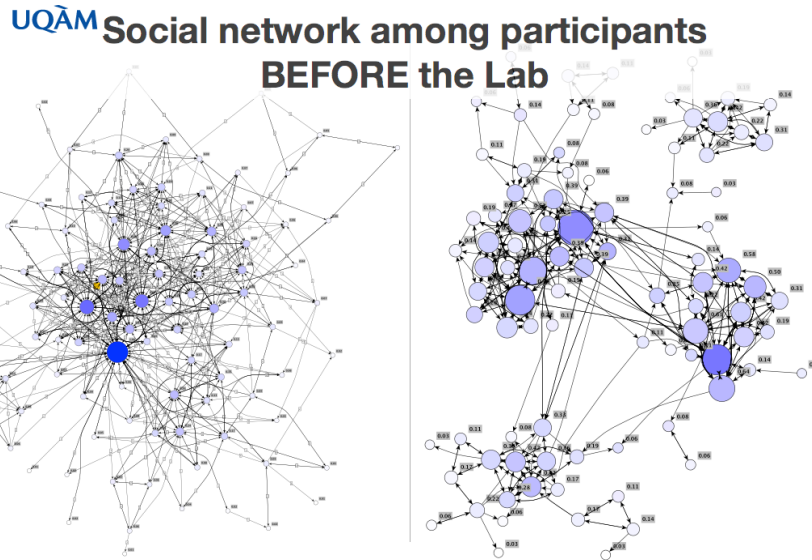
SN: The existing Social Network (*SN Before*, Time 1, before) : that of having met or having been close to these persons before the Lab. The Social Network during the Lab (*SN During*), we asked the existing SN and the one the participants recalled having contacts with DURING the Lab.

SSN: The Socio-semantic Network by the sharing of a common vocabulary with the group of participants in the words of the questionnaire BEFORE (*SSN Quest*). The same question we used in the first questionnaire i reused in the questionnaire AFTER (*SSN Quest*). We also use the texts left by the participants during the entire event (2-3-4). We can give a quick look at the graphs representation of networks... We have two visualisations of the social network: all the relationships and only the strong relationships.

Fig. 3: Timeline with different Social and sociosemantic networks

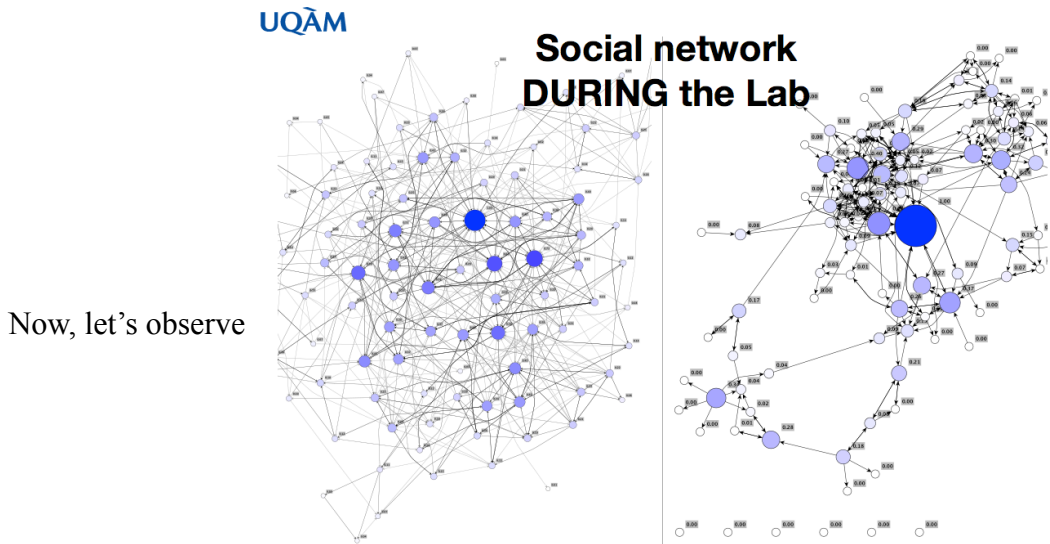


Fig. 4: Existing social network among the persons before the Lab



At the right: Graph of the existing social network BEFORE (all the relationships) as perceived
At the left: Graph of the existing social network BEFORE (only the strong relationships) as perceived

Fig. 5: Social network stated during the Lab



At the right: Graph of the social network stated DURING (all the ties)
At the left: Graph of the social network stated DURING (only the strong ties)

B. Preliminary Results

Remember that I told you at the beginning of the presentation that we would see the relationship between the social network and socio-semantic networks. In addition, I also told you in the research group to which I am affiliated (Groupe-Réseau UQAM) has demonstrated, for its part, a positive correlation between the shared vocabulary of participants in work group situations and the social networks over several weeks or years. Let's look at my results...

The preliminary results that I present you with today are simply a correlation between indices: the centrality in the social network and the centrality of the similitude of shared vocabulary according to each phase in the Lab. If you recall my question: is there a link with SN and SSN during a deliberative forum?

Fig. 6: Table of correlation of the centrality between the social network and the sociosemantic network (at each time period)

	Texts BEFORE the Lab 1 (Time 1)	Informal Discussions 2 (Time 2)	Deliberation, round 1 3 (Time 3)	Deliberation, round 2 4 (Time 4)	Texts AFTER the Lab 5 (Time 5)
Social Network BEFORE the Lab	—	—	-0,293**	-0,310**	—
Social Network DURING the Lab	—	0,277**	-0,274**	-0,314**	—

Sig: * $p < 0,05$ | ** $p < 0,01$

My hypothesis is yes and even that this correlation would be positive.

a. The first result covers the moment of the informal discussions (Phase 2): the correlation is significant and medium-low to 0.277 with the social network outlined during the Lab. Up to this point, all goes well. The second result is more astonishing.

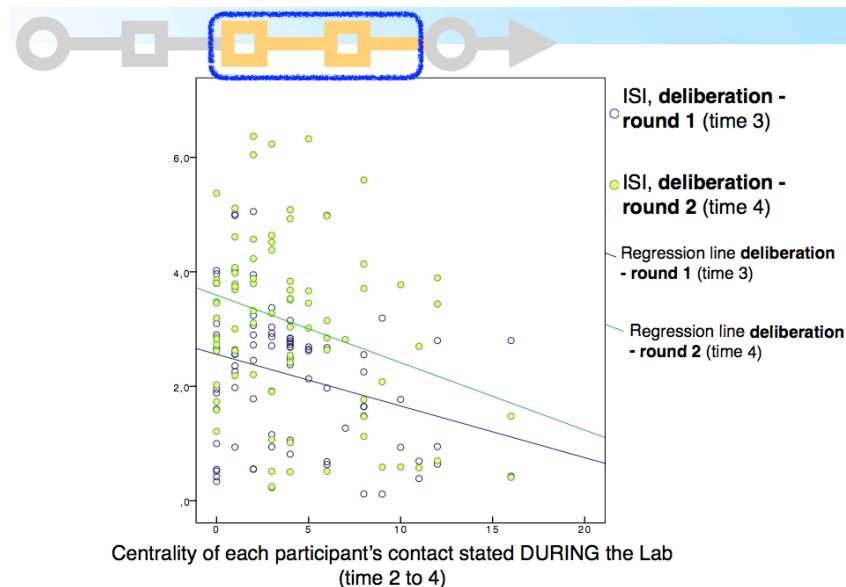
b. During the Deliberative Rounds 1 and 2 (Phases 3 and 4): the correlation is still significant and always medium-low, BUT IT IS NEGATIVE (between -0.274 to -0.314). This signifies that the slope is inverted!

When we observe the scatterplot it becomes more evident...

If we look at this chart, we observe that the individual similitude index (**ISI**) of shared vocabulary (socio-semantic) as it declines. The more we have links to the other participants in the Laboratory, the less we have a shared vocabulary with others.

The two slopes show us the direction of the correlation. Therefore, these preliminary results show that...

Fig. 7: Scatterplot of the negative correlation between the social network and the sociosemantic network (at time period 3 and 4)



Visual representation (**scatterplot**) of the negative correlation between individual similitude index (**ISI**) of **shared discourses** during the deliberation (Rounds1 and 2) with social network centrality **during** the Lab

Summary of the Results

To sum up the implications of these results:

1. With regards to centrality, a **weak correlation** is observed between the **participants' shared discourse** DURING the Lab and the **social network**. However, this correlation varies **from positive to negative**.
2. Participants at the Lab had a **tendency to discuss with those who had a different discourse** during the deliberation.
 - 2.1. This observation is however **inverted during the informal discussions** (positive correlation).
 - 2.2. This observation **is not there before or after the Lab**, but uniquely during the two rounds of deliberation.

C. Futher reflections

1. There remains to be explained the difference between the results obtained in deliberation context (our data) with the other data (work groups, community of practice). Also, the relationship with certain attributes (radicalism, volatility, opinion, etc.) with the Individual Similarity Index - ISI. The participants are radicalized in their respective positions on the question of university tuition fees.

2. More **research is required on the analysis and interpretation**, around certain attributes (like the radicalization, the volatility or the opinion): The **strength of the relationship (dyads)** in relation to **ISI discourse** and certain attributes. Also, the **density** of the groups versus the IIS discourse.

3. There remains to **explore** the core group participants (who are they? what unites them?) in their **behaviour** (what do they do?) and with regard to the discourse (what do they think?).

Thank you for your attention. It will be our pleasure to accept your questions.