

City as Commons: Study of Shared Visions by Communities on Facebook

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Abstract. The present article is an exploratory exercise of analysis of texts present in digital social networks organized by communities that operates on urban public spaces. This text present some ideas about civic and political participation to support our point of view of “expanded participation” provided by social interactions throughout social networks digital platforms. We intend to improve our knowledge about how groups are sharing visions by analyzing a words network created from those interactions. We try to characterize relationship between words used in posts in Facebook pages from two groups, one in Italy and other in Brazil. This work analyzes networks and relations, from this point, it is possible identifying in most important word pairs, words with higher centrality metrics and the main idea expressed in the content of posts and discussions. Finally we discuss possibilities and difficulties found in the usage of this kind of tool.

Keywords: Digital Social Networks, Semantic Networks, Civic Participation.

1 Introduction

Dealing with time and space in liquid modernity, Bauman [4] states it is necessary the existence of available spaces for exercising of public *personas*, thus learning the skills involved in civility. Thereby, the city appears as a common good for its residents.

However, public spaces in contemporary cities may segregate or incorporate people, but only as agents of consumer acts. Therefore, these would not constitute public spaces but civilian spaces [4].

Amin [2] reminds that, nowadays, places of civic and political education are varied and distributed, involving civic practices that take place in flows and associations and go beyond the urban, materializing through books, magazines, television, music circuits transnational associations. Unlike Bauman [4], Amin argues that even through consumption and leisure, experience with public spaces remain related to sociability and social recognition and acceptance of codes of civil conduct.

Much of western political is linked to the idea that penetrating the sphere of politics implies the existence of something we can define as the common good [24]. Arenilla [3] says that both models - the Greek democracy and the different republic models - coincide when focus on the need for citizens to establish the common good ahead of private interests to preserve the political community and defend freedom [3]. For Vitale[24], even though, the modern individualistic philosophy has its starting point in the methodological and ontological precedence of the individual over the collective. He does not consider the notion of the common good and public space as residual.

Rodotà [21] considers that public goods are those which can not be subjected to pure economic logic, such as water, clean air, healthy environment, knowledge, food, health. These assets are fundamental to human existence. The Internet, for example, would be a key resource for understanding what happens near or far and creating new possibilities of participation and dialogues with others. The novelty here was the fact that the common good, in this case, is not just something that can serve the individual, but a good produced by each and therefore should remain common.

Common goods, according to the author, would speak of the connection between people, not something that we manage or use solely in our sole interest. They would speak of social connections because when goods is common and we use it together with others, we must defend it in conjunction with others [21].

The demands currently placed by movements that stir crowds, as the case of Brazil in mid-2013, are generally based on speeches in favor of social justice to finally claim what they consider to be investments in the common to all – the right to transport, health, education and so on. Utilizing social networks, groups seek, for example, to reclaim areas of the city to be enjoyed by all or to participate in choices about the destination to be given to such areas. The rights do exist, but the parsimonious investment or the weakness of stakeholders to act in the field of decision-makers tend to override the right, degrading the common good.

In other cases, online social networks have been used intensively for participation in local projects. This is the case of the movement in favor of the deployment of a large park in Basento (Potenza, Italy) in 2012, which thereby enabled the expansion of the discussion and the acceptance of many proposals that have arisen in these digital spaces [15] and even the amendment of a law by which the municipality resumes its planning capacity for the area.

The present article is an exploratory exercise of how the concern with the common good is being primarily expressed through digital social networks (DSN) that organize and are organized by social movements that aim to improve urban public degraded area or waste urban spaces. We can speculate that democratic values subsidize present visions of the common good, understood here as the right to the city [11].

In this text we firstly visit some ideas about civic and political participation to support our vision about the main subject and some authors that are concerned with social interactions provided by social networks in digital platforms. We intend to improve our knowledge about how groups are sharing visions by analyzing semantic networks created from those interactions. Two cases are analyzed in different countries: Italy and Brazil. Finally we discuss the possibilities and difficulties found in developed process analyzing complex semantic network.

2 Networked Conversations: An Augmented Vision of Participation

Carpentier [7] points out that theoretical expansions, sometimes incorporated by democratic theory, grew from a diversity of political practices originated from actors who were often (strictly speaking) located outside the realm of institutionalized politics. They may be called interest groups, social movements, civil society or activists and these actors would have expanded the scope of political participation and would become more heterogeneous and multidirectional [7]. He emphasizes that power is a decisive element for participation. But he considers politics as a dimension of social, allowing participation in several different social fields, macro and micro, respecting diversity and referring to civil society, economy and family as places of political practice [7].

Referring to the scope of Political Science, Cantijoch and Gibson [9] argue that the understanding of the need to include non-institutionalized forms of political behavior appears to have become widespread in the area. Although, debates keep on questioning how far this extension can and should arrive. In particular, they question if less active and instrumental types of political engagement would qualify as forms of participation. The authors cite recent studies that refer to political activity on blogs and social networking sites as new forms of participation.

Noting the extension of the sense of participation beyond the political system, Dahlgren [8] discusses different trajectories of participation, either through "consumers", civil society or political participation itself. This author affirms that a first step towards civic participation offers easy access to symbolic communities and to a reality beyond individuality. Debates related to public issues can emerge anywhere and any time in the social space by discursive interaction that occurs, for example, through discussions, as well as experience and reflection [8]. The process of discursive production of a political dimension can be considered as a form of political participation [8].

Bakardjieva (cited in [8]) uses the term "*subactivism*" to describe the form of civic participation that takes place between people in their everyday life. In this case, the rules are put in discussion, contested and negotiated, the social world is evaluated according to types of moral perspectives, and questions are raised from what is fair and what is wrong – all that issues become a political dimension or create links with the policies.

Maia, Mendonça and Marques [13] state the process of public discussion would not be confined to formal arenas such as parliaments and ministerial meetings. In [12], Maia proposes thinking of communicative interaction modalities observed on the Internet as a comprehensive cultural dimension, where the formation of preferences and beliefs is a cumulative process.

Papacharissi [16] realizes that the interactions enabled by web 2.0 would reinforce contemporary values of self-expression and the proliferation of online personal/private spaces, such as blogs and social networks, but she considers it has little in common with Habermas's public sphere. However, she recognizes that, regardless of motivations, blogs and forums like virtual environments encourage the proliferation of voices that would expand the public sphere.

As Benkler [5] says, through blogs, wikis, online social networks, but also mobile phones, people started to register and publicize their impressions, like digital traces, and to establish conversations. This amplifies the urban experience and can provide input to public debate, in a distinct mode of what was practiced before, when strictly privilege of some organizations.

By verifying practices of sharing images via mobile phones integrated with social interactions in Japanese everyday life Ito [10] suggested the emergence of a form of visual sharing centered on personal, intimate and pervasive nature of social connections via handheld devices. This trend certainly indicates a change in the perception of context, which in this shared environment, beyond rational argument, is likely to be able to approach and give opportunity to the convergence of views.

As stated in [8], the network environment provides a great civic potential, makes available a wide range of participatory forms, which we can define as "civic practices". The online media is part of a wider social, political and cultural world. The commons, as we saw, are broadened and fight for rights is renewed, either for inclusion of the Internet in this "catalog" or by updating it in view of its shortage, case of the water. All this seems to lead to the need for a more complex agreement, allowing the emergence of uncovered themes. This certainly enables creation of new shared social values.

In this work, we assume "expanded participation" as a way to include new social arrangements, present in cultures that use networked communication as a means to share visions, values and produce meanings and actions collectively. We observe how democratic values are present in assumed notions about the common good, whatever are the results and the actions performed through the support of digital social networks. The ease of interaction allowed by web 2.0 is not only virtual, but real, and opens up many opportunities for participation through self-expression. It's an enlarged participation that tends to fall under the biases of more maximalist political participation, in accordance with the vision presented in [7].

3 Discovering Shared Views through Digital Social Networks Interactions

Recent works have studied behaviors based on interactions in digital social networks: in [22] is performed an analysis about local politicians engagement on Facebook considering a municipality in Norway; in [17] social networks of about 100000 Facebook users and their interactions on pages of presidential candidates in Finland are examined. The digital social networks seem to act in the public sphere, helping to support and share opinions by groups, just like their political actions and manifestations. Such processes happen as prescribed by those adept to the democratic deliberative perspective: certainly sustained in values, habits, ideals that spread and provide the bases for contemporary urban culture, avoiding rational forms.

Interactivity is a relevant characteristic in the constitution of texts on Internet. According to Hilgert (quoted in [14]), the interlocutors want to interact, therefore, creating a kind of "spontaneous text". This way of writing is more flexible and informal. Unlike the slow and planned process of writing, typed language – or as we

call *digital talk* – appears on the screen in real time, similar to face to face conversation [14].

According to [18], the terms interaction and conversation are not always synonymous. In her book *The Conversation Network*, she observes social interactions, those constructed by social actors with the purpose to negotiate, construct and share meanings. These interactions occur through talks. Orecchioni (also cited in [14]), explains that conversation would require interlocutors engagement in a pragmatic exchange – not only the alternation of speech.

Thus, this paper is not concerned with digital conversations. It verifies through the networked interactions, relevant themes and terms in two digital social networks (using their respective Facebook groups). Both are used to support movements, whose characteristics in these socio-cultural practices are designed to amend sharing and new meanings to physical, social and political contexts in favor of using the public space as a common good, in the interest, if not all, of many.

4 Semantic Networks

The networked interaction was analyzed using complex semantic networks. We try to characterize relationship between words used in the posts on Facebook pages from both groups. This work analyzes words and their relations forming semantic networks. From this point, by considering pairs of elements, it is possible identifying words with higher centrality metrics – an indication to reach main ideas expressed in the content of virtual posts and discussions.

In both actions of speech and writing there is a previous stage for planning in which words are evoked in a associatively mode. This characteristic permits us representing association of words as a semantic network of terms [1]. Some recent works about this kind of networks have been developed analyzing specifically the speech [23] or different kinds of literature produced by men and women in different languages ([6],[1]). All of them are based on the ideas of complex network analysis, which permit non traditional statistic methods and data analysis [25]. Within this technique, metrics considering existing relations, such as centrality and density help us to understand and identify the kind of structure of network itself.

In all referenced examples, the research process established a sentence as the unit of analysis inside each text studied. In this approach, a relation among all possible pairs of words forming one single sentence is created. This process creates a network of all words present in the texts analyzed, taking into account every single sentence. This semantic network can be investigated using the theory of complex networks, as it consists of hundreds or thousands of nodes: the words. Let's take as example the two following sentences: "*Some beers in Brazil are produced with corn. This fact has transformed corn in an important item of leisure, but not for feeding*", from which will rise a semantic network of words.

We shall firstly convert all verbs to their canonical format (infinitive) and eliminate grammatical words (articles, pronouns, conjunctions, prepositions), following premisses and heuristics defined in previous works cited above. This would give us the following items as elements for a semantic network and the network represented in Figure 1: beer – Brazil – produce – corn – fact –have – transform – important – item – leisure – feeding.

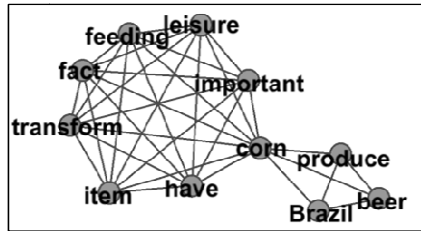


Fig. 1. Example of a network of words generated from two different sentences

The use of techniques of social network analysis may identify terms of higher relevancy in developing conversation and interactions expressed in DSN as identify complex network topologies.

Given any two existing words A and B in the text analyzed, metrics considered are: a) the frequency of each pair of words AB (*FreqPar*): number of occurrences of each pair, b) *Force*: the division of *FreqPar* by total number of sentences in text analyzed and c) *Fidelity*: the division of *FreqPar* by the sum of the total number of occurrences of words A or B, together or not [23]. Therefore, this research does not aim working with the most relevant words, but considering the most relevant pairs of words and the measures generated from such relations, observing interactions of texts analyzed.

5 Studying Groups Interactions

In this section we will firstly present a brief resume of studied cases in focus. Secondly we will explain retrieval process of data and its format, as well as method of analysis. Finally we will present results.

5.1 Cases in Focus

Both cases discussed own a forum group and a *fanpage* in Facebook, where actions of gardening and art intervention are massively organized, debated and disseminated. In the group area of each project, the respective participants have autonomy to publish and interact with each other trough posts, likes and comments, or even sharing the content for beyond the group. Public actions are organized and invite local community and unknown people interested in participating of initiatives in a hyper-connected way using Facebook as main platform.

The Garden in Motion

“Il Giardino in Movimento” (The Garden in Motion) started after the relatively successful experience in a project enriched from discussions with stakeholders and mobilized many citizens of Potenza (Italy) involving a degraded area and the initiative to create a City Park (Parco di Basento) as an opportunity to think about the city. This experience permitted participating in the planning of urban space and experiencing new forms of public participation. As a result of this process, a group of people continues to discuss the use of urban space through Facebook and meetings.

Through *fanpage* or community, The Garden in Motion followers and participants are sharing visions on the present and future of the city since the end of 2012. In this way, they experience on their own the task of understanding collective interest – in short the currently common good for citizens of Potenza.

The page of The Garden in Motion group was created in 2012. In December 19, 2013, it had 562 members. The text that presents the group mentions the movement itself as self-organizing diffuse movement, which seems survive at the expense of their own process of adaptation. Or, as suggested in [15], a case of *wikiplanning*. The *fanpage* was created after the group formation, on June 26, 2013. Until December, 2013, the *fanpage* reached 826 followers.

Already in its presentation, the page is defined geographically as hyperlocal. The area near Musmeci Bridge has great symbolic meaning for the group. The bridge and the whole area adjacent would become valued with the desired realization of Parco di Basento project.

Collective Yards

“Canteiros Coletivos” (Collective Yards) group and *fanpage* were born from discussions on Facebook forums related to the city of Salvador (Bahia, Brazil), in February 2012, amid demonstrations from other movements that used to pressure the municipality to restore infrastructure and ensure democratic use of city public spaces. The actions of "planting, maintenance, painting and cultural occupation of spaces" have succeeded in various parts of the city. Through actions that take place with anyone interested in collaborative efforts and voluntary participation, the group strengthens the educational aspect "proposing a new relationship, exchange, learning the day-to-day, collective work for the common good". On December 19, 2013, the group was composed by 1,502 members and the *fanpage* reached 2,704 followers.

Both cases work through the occupation of public space: urban residual spaces in Brazil and in Italian case a space whose quality has been degraded by previous usage. We can say that these movements change the public space in a sense they try to improve its quality to become usable by citizens.

Similarities and differences in terms of goals, forms of speech and action can be observed. The Garden in Motion comes to ensure the development and selection of participatory projects with involvement of voluntary associations, university professors, designers and others professionals to be realized by public administration.

Collective Yards, on its side, wants to provoke changes in daily behavior of local communities, utilizing direct actions on urban space to promote environmental awareness. In this case, there aren't references or mentions to public administration or even relationships with it. There is involvement of distinct and distant neighborhood associations as well as university projects.

5.2 Tools, Process and Data Used for Analysis

This paper focuses on textual content published in Facebook groups forums. Considering theory presented in previous section, both sets of texts analyzed in this paper, representatives of each project, have naturally no linearity: differently of other works considering semantic networks, these are short and fragmented posts written by

different users of digital social networks. The start and end points in sets are never clear. All these aspects bring a higher probability of diversity, but no idea about standards, even considering relevant part of interactions based on image sharing, which, often, produce textual comments. Thus, regarding these characteristics, we present the steps utilized in our research process.

The first part of our process focus on extracting posts from Facebook groups and *fanpages* via Netvizz application [19], which permits access to different kinds of data and statistics related to projects analyzed. At first we retrieved all textual content of posts in each group and respective comments, just as the statistics and aggregated values of comments and “likes”. Then we analyze the statistics of 20% of the posts with the greatest commitment, computed here as the amount of comments and “likes” addressed directly in original post (“likes” on comments are not considered). Statistics and characteristics relating to data extracted are the following¹:

- Garden in Motion: group posts collected between October 1st, 2012 until September 2nd, 2013. During 337 days, there were 80 posts concerned to: informative and/or calling for mobilization or participation in open meetings, opinion and knowledge expression. Between July 15 and September 3, 2013 (50 days), there were 52 posts, on average 1.04 post per day on the *fanpage*;
- Collective Yards: group data collected between June 4 and July 29, 2013. In 56 days there were 107 messages posts, most often calling to participate in any event, but also sharing knowledge, opining on issues concerned to the group or reporting initiatives that reinforce the image of the group, through adherence or news about their activities in traditional media. In relation to *fanpage*, the period of posts collected refers to interactions between May 17, 2012 and September 26, 2013. Six hundred and eighty (680) posts were published in 497 days. On average 1.37 posts per day.

This allowed us an initial statistical analysis, observing content extracted, which permitted future correlations with semantic networks obtained. The second step in the process concerns to unifying and performing human intervention on textual content of all posts and comments extracted from each group in two different files, representing each project. This includes cleaning and adjusting texts by removing or manually converting unrecognized characters, meaningless words (most of them originated from colloquial way of writing in virtual applications and special combination of characters, not processable by tool utilized), signs of avoidance as the apostrophe (widely used in Italian) and eliminating auxiliary verbs as HAVE – BE – GO – COME.

The third step concerns to applying an open source set of tools (most of them modules of UNITEX2, modified or not) for separating all sentences and respective words in each file of both projects. These tools generate a semantic network and metrics of occurrences of words into text. The last step permits generating metrics of produced network in previous step and classifying them.

¹ All periods considered in this work were defined by publishing dates from posts collected via Netvizz [19]

² UNITEX is an open source software that comprises “a set of programs that makes possible the processing of a text in human language using linguistic features such as lexicon-grammar tables, electronic dictionaries, grammars” [23].

5.3 Statistics, Analysis and Discussions

The Garden in Motion Group

Observing the 3 top posts with higher engagement, it is evidenced that the first two posts own images with link to photo albums on the intervention group. The posts with largest number of comments (18) and likes (8) refer to photos of an event under the Musmeci Bridge. The comments are however a private conversation between three friends. The next post is another photographic record (9 comments, 10 likes) of an event. Third-placed post brings images made at workshop for participatory design to the area under the bridge, one of which to be chosen by vote on *fanpage*. The post got one of the highest amounts of likes (14) for the analyzed period, but only 2 comments which do not address the park designs.



Fig. 2. Image of the third-placed post demonstrates the group projetual concerns

The network in Figure 3 represents the size of each node (words) as a function of its centrality degree value. This metric represents the number of connections and is highly influenced by the size of the sentence where the word appears, either by the quantity of occurrences in different sentences.

The most emphasized words in the second largest cluster for the interactions of the Garden in Motion group are: *piante* (plants), *laboratorio* (laboratory), *Roma*, *Pompei*, *soprintendenza*. The word *piante* appears 8 times, followed by *Pompei* that occurs 5 times (2 regarding the name of the institution and 3 regarding a place), *laboratorio* (4), *Roma* (3) and *soprintendenza* twice. All of these words own a very high degree centrality, remaining in a selected subgroup of nodes with largest number of connections.

The largest cluster (Figure 4) stands out the words: *antica* (ancient) and *Hortus*. *Antica* occurs 10 times – 6 of which refers to a road (*Via Appia Antica*) and 4 employed as an adjective – and *Hortus* occurs 9 times – 4 of which related to the Hortus Urbis project and 5 to some links. These words have respectively the third and fourth highest degree centrality in the network.

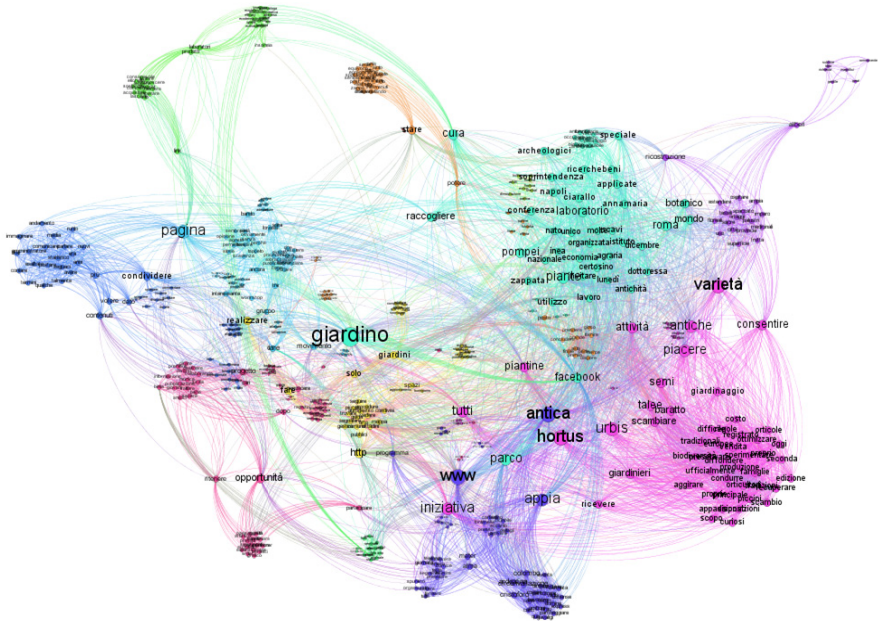


Fig. 3. Garden in Motion group interactions – the networked words

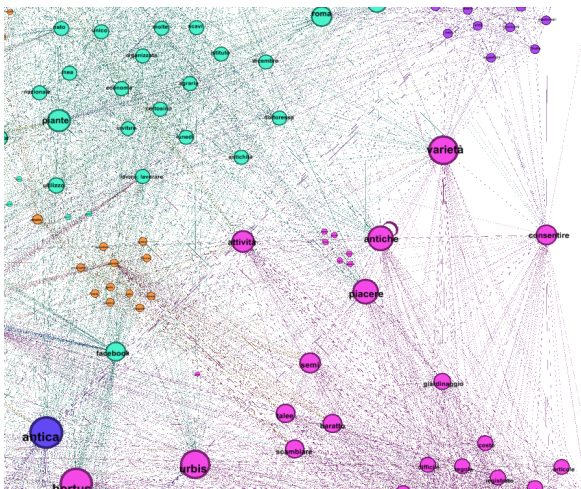


Fig. 4. Garden in Motion group interactions – main cluster view in the networked words

The Parco dell'Appia Antica participates in this project and hosted a lecture given by a biologist at the Laboratorio Ricerche Applicate Soprintendenza Speciale Beni Archeologici Napoli Pompei dealing with the reconstruction of the ancient Vesuvian landscape. It is precisely the call for this conference (204 words) that is shown in the

view of one of the clusters identified in visual analysis. The entry to the park (*Parco*) is also part of the message that discloses the programming “Baratto di semi i piante” (435 words). The two largest clusters are illustrated in Figure 4.

It must be stressed once again that its importance stems from the fact that words are connected with many others, increasing the number of relations naturally when sentences are too long. Vis-a-vis their position in the table of frequencies on which pairs of words occur, it appears that it could be different, and its position could be another. However, at least in this case, but not completely, the frequency of pairs and centrality degree confirms the perception of the importance of words represented by the network of words (Figure 3).

The pairs of words occurring most frequently (4) are: *baratto-semi*, *appia-antica*, *hortus-www*. These pairs mainly refer to the largest post that calls for an exchange activity (*baratto*) of seeds (*semi*) and plants in the Hortus Urbis project area on the Via Appia Antica, which conveys message on the site where you could access the registration to attend the event. *Antica*, *Hortus*, *www* and *Appia* highlight in figure, but are not so clear on visual inspection of network.

16 pairs of words achieved the subsequent frequency (3). All other pairs (185 pairs) showed the lowest frequency (2). Considering the set of word pairs 23% of pairs of words found (203) refer to directions to access a local (routes names, for example), to specific locations (place name where events occur, for example) or are names of cities (which may be contained in names of organizations or projects), none of which is located in the city of Potenza, where the group acts.

This data may be pointing to the importance of considering references to geographic locations when it comes to composing the contexts of interactions. Recovering contexts, as stated in [18], has primary value in studies of talks, including digital talks, and the place is one of its main elements particularly in initiatives on urban space.

The Collective Yards Group

The top 22 posts of the group (20% of posts in the period) considering engagement (likes and comments) received 246 likes and 61 comments. The most liked (28) was the post about traditional newspaper reporting on the state of Bahia with statewide circulation. Comments (4) congratulate the creator of movement. The second post with most likes (22) was a poster calling to make everyday the Environment Day. The third highest engagement (18 likes, 5 comments) is related to the disclosure of Collective Yards project in a class of a university and the expectations of students to occupy an area on a heavy traffic road in the expansion area of the city of Salvador.

Among 22 posts analyzed, the more commented (11) is ranked in sixth place in terms of engagement. Its comments focus on different subjects. The 3 posts that had higher engagement contains pictures: newspaper *timeline* photos and posters pictures.

The following figure provides the overall vision of the words network from Collective Yards group. Performing a visual inspection, we can identify large areas shaped by a kind of cloud of words that suggest three major groups with recursive references to the following terms: *movimento / pauta / estado / bem / poder / social* (movement/agenda/state/good/power/social); *cidade / evento / dia / grande* (city/event/day/large) and *dar / http / www / br* (to give/http/www/br).

The primer group is formed by top 6 words in number of connections with others words (centrality degree, varying from 240 to 278 connections). The following groups are also formed by words of high degree centrality, but in a lower dimension, varying from 196 to 234 connections.

The word *movimento* (movement) occurred 22 times in the set of interactions, and 20 times in a particularly post. This post, the greatest of all, it has 1114 words and puts on debate propositions to give “organicity” to the movements that exploded on the streets of several Brazilian cities in June 2013. The author of the post was concerned with the supposed “absence of a common utopia” and proposed that groups and more decentralized movements, like Collective Yards, constitute spaces for the articulation and synthesis of claims raised by those movements.

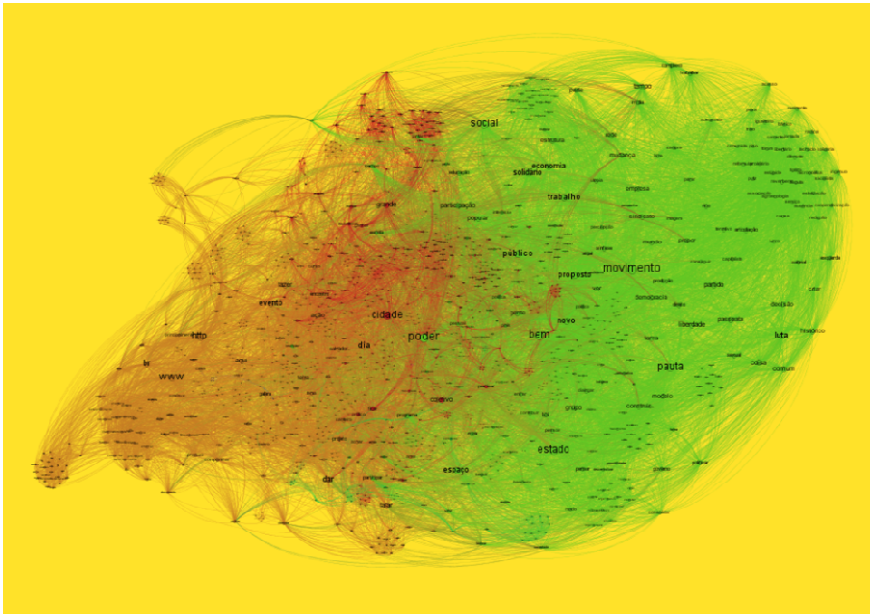


Fig. 5. Collective Yards group interactions – the networked words

Curiously, this post seems to have been ignored by the group that apparently reacted with silence, since it got no likes, no share or comments. The word “movimento” (movement), highlighted in the image of the network in function of such post, can not characterize the most relevant issues of interest in the group.

The second largest post found, composed of 552 words, it suggests “10 reasons for joining the street demonstrations and movements”. Although 4 people have enjoyed this post, there were no comments or share. Like the previous, this does not seem to be interesting to the group, as it can not be noticed by the reactions of participants, but by the very different contexts of words usage in postings.

An interesting observation points when considering the context of use of the word “agenda”. This occurs 18 times in the set of interactions: 16 times in the first post mentioned but never in the second largest post. The second largest post, albeit not cite

the term (“agenda”), brings a cast of political demands, ranging from the fight against corruption to issues of urban mobility.

The word “state” on the other hand is mentioned 9 times in the set of interactions analyzed, 5 of them referring to the territory. The remaining 4 concern the state as institution, and 3 of them are concentrated in the post that proposed “10 reasons to go to the streets”.

The words “good” and “power” had the following occurrences, in their respective contexts: the primer occurred 8 times, but 5 of which as adverb; the second occurred 5 times, but only once was used in a political sense. Both are examples of how difficult is interpreting based on the amount of occurrences exclusively.

As for the remaining clusters, it is not important for the present work the references to the Web itself. The word “town” on the other hand points with 22 occurrences, 2 of them referring to the City Park – one of the biggest in the city.

Analyzing the frequency of word pairs, most of the highest frequencies refer to web addresses pages (frequencies 6-13). Among the pairs of words with the highest frequency that carry meaning and help to characterize the interests of the group, it is worth mentioning those related to a neighborhood where the group acts; Solidarity Economy as types of economic practices that value people; the name of an event organized by the group and the pair the words that refers to the name of the group itself.

6 First Conclusions

Both groups showed similarities in the types of interactions that practice. All fairly valued images that refer to their own activities, using “like”. People in turn use the comments area to communicate to each other, sometimes unrelated to the subject of the post. In this case, the tool has been used more as a bulletin board for the exchange of messages between acquaintances.

In both cases, 2 posts with the highest number of sentences stood out for their sizes. In case of Garden in Motion posts call to group activities, in case of Collective Yards people tried to achieve adhesion to direct political action, motivated by Brazilian street movements in 2013. Nevertheless, it was found that the group did not respond to such clamor.

While immersed in civic practices for improvement and recovery of public spaces, interactions of Garden in Motion group do not mention the “common good”. On the other side, the term appears only 2 times in Collective Yards in the most political oriented post, which seems to have no impact in the group interactions.

The fact that posts of greater adherence (engagement) in both groups presented little or no degree of conversation lead us to wonder if, at that moment, digital social networks are contributing for expanding public sphere or if they just become vehicles for amplifying urban experience and diffuse information. If there was no exchange of views, can we say there is a real debate? So, could we say themes and terms emerge and bring new meaning to the social and political context?

However, it is important to note this work as a snapshot of a given period. Other dynamics may be established in the life of the group to establish and define more precisely their identity through their practices.

On the other hand, online and offline practices observed in the groups show a large engagement in civic actions, which aim primarily to consolidate new behaviors in social life, also tuned with the idea of city as a common good – case of Collective Yards – or directly influencing decisions of the government, adopting practices that reinforce ideas of participatory urban planning – case of Garden in Motion. In our view, such findings converge with points of view of [8] in defense of different places where one develops the sense of civility required by urban life and with the idea of producing the city as commons through the notion of “enlarged participation”.

Focusing on studies about microcosms constituted by group interactions with and/or through social networks, Rodotà [20] notes the daily actions of many individuals. Such actions bring an uninterrupted declaration of rights, that draws its strength not from a deep conviction but of men and women so they can gain recognition and respect for their dignity and their humanity. They are not the “historical subjects” of the great modern transformation: the bourgeoisie and the working class [20]. In fact, they are a plurality of individuals already interconnected in a global network. Not a collective intelligence, or an indeterminate crowd, but a plethora of hard-working women and men who find and create political occasions for not succumbing into passivity and subordination.

A resource that can assist in the composition of such urban framework is the use of Social Network Analysis [25], allowing identification of relation structures in groups interactions. Even though this is not the object of the research in the paper, showing the network of interactions among group members (Figure 6) sets out the major players of these talks networks.

The following figure demonstrates the large concentration of interactions in a single individual in the case of Collective Yards, which have a bit more distributed at the Garden in Motion group. This finding suggests further investigation of the role played by some actors in the constitution of the group's agenda.

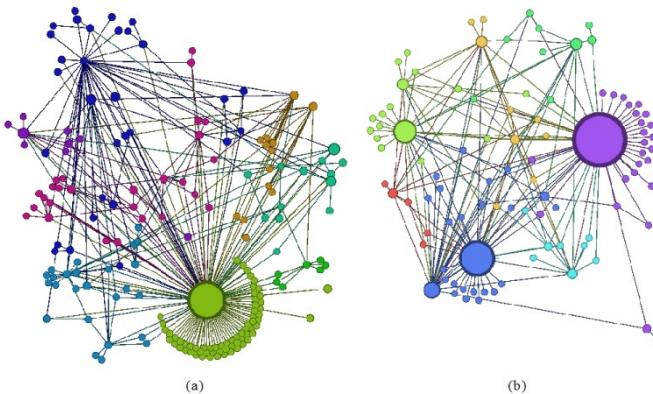


Fig. 6. Interactions networks - Collective Yards (a) and Garden in Motion (b)

Reviewing the process utilized, the experience gives us the opportunity to conclude for now that:

a) first of all, the networks of words can deceive or mislead, since it is based on sentences – the highlighted words tend to be those at larger sentences. This possibility of misconception was greatly demonstrated in the case of Collective Yards;

b) in some cases, words may not appear at a given sentence, but the concept related to them could be transmitted through others pairs of words ;

c) it is necessary observing carefully the context of ambiguous words or composed terms with an auxiliary role in the construction of meaning, when processed by software (eg. composed expressions with verbs such as "may," "should" and "could");

d) there is difficulty to identify the geographic information (a lateral concern to this paper) in interaction texts. However, we believe there is a need to expand the analysis to include features that clarify the context, especially in studies where place has symbolic value;

e) it is fundamental to know group's targets for studying interactions, considering different kinds of metrics that represent levels of interactions, such as number of "likes", comments, shares and so on. This will permit cutting out textual postings that are not concerned with the groups interests.

These research let us conclude that it will be a good starting point to know the average size of group interactions to identify cases distant from patterns and then examine individually. We may consider that complex network analysis can be used in a recursive way to guide researchers on selecting posts to be analyzed in detail, including images and web links.

References

1. Aguiar, M.: Words Networks in Written texts: An Analyzes of verbal language using complex networks. Mastering dissertation, 116 p. UFBA, Salvador, Brazil (2009)
2. Amin, A.: Collective culture and urban public space. *City* 12(1), 5–24 (2008)
3. Arenilla, M.: Concepts in Democratic Theory. In: Insua, D.R., French, S. (eds.) *e-Democracy. Advances in Group Decision and Negotiation*, vol. 5, pp. 15–30. Springer, Netherlands (2010)
4. Bauman, Z.: *Modernidade Líquida*, pp. 107–149. Jorge Zahar Ed., RJ (2001)
5. Benkler, Y.: *The Wealth of Networks: How Social Production Transforms Markets and Freedom*. Yale University Press, New Haven (2006)
6. Caldeira, S.M.G., et al.: The network of concepts in written texts. *European Physical Journal B* 49, 523–529 (2006)
7. Carpentier, N.: The concept of participation. If they have access and interact, do they really participate? *Revista Fronteiras - Estudos Midiáticos* 14(2), 164–177 (2012)
8. Dahlgren, P.: Reinventare la partecipazione. Civic agency e mondo della rete. In: Bartoletti, R., Faccioli, F. (cura) *Comunicazione e Civic Engagement. Media, Spazi Pubblici e Nuovi Processi de Partecipazione*, pp. 17–37. Franco Angeli, Milano (2013)
9. Gibson, R., Cantijoch, M.: Conceptualizing and Measuring Participation in the Age of the Internet: Is Online Political Engagement Really Different to Offline? *The Journal of Politics* 75, 1–16 (2013)
10. Ito, M.: *Intimate Visual Co-Presence*. In: International Conference on Ubiquitous Computing, UbiComp 2005, Tokyo, Japan (2005), <http://www.itofisher.com/mito/archives/ito.ubicomp05.pdf> (accessed on December 3, 2012)

11. Lefebvre, H.: *The right to the city* (1968)
12. Maia, R.C.M.: Democracia e a Internet como esfera pública virtual: aproximação às condições de deliberação. In: Gomes, W., Maia, R.C.M. (eds.) *Comunicação e Democracia: Problemas & Perspectivas*. Coleção Comunicação, pp. 277–292. Paulus, São Paulo (2008)
13. Maia, R.C.M., Marques, A.C.S., Mendonça, R.F.: Interações mediadas e deliberação pública: a articulação entre diferentes arenas discursivas. In: Primo, et al. (orgs.) *Comunicação e interações*. Livro da COMPÓS 2008, pp. 93–110. Sulina, Porto Alegre (2008)
14. Modesto, A.T.T.: *Processos interacionais na Internet: Análise da Conversação Digital*. Tese de Doutorado, Faculdade de Filosofia, Letras e Ciências Humanas da Universidade de São Paulo, São Paulo (2011)
15. Murgante, B.: Wiki-Planning: The Experience of Basento Park In Potenza (Italy). In: Boruso, G., et al. (ed.) *Geographic Information Analysis for Sustainable Development and Economic Planning: New Technologies*, pp. 345–359 (2013)
16. Papacharissi, Z.: The Virtual Sphere 2.0: The internet, the public sphere, and beyond. In: Chadwick, A., Howard, P. (eds.) *Handbook of Internet Politics*, pp. 230–245. Routledge, Taylor & Francis Group, London, New York (2009)
17. Parviainen, O., Poutanen, P., Salla-Maaria, L., Rekola, M.: *Measuring the effect of social connections on political activity on Facebook*. Mimeo (2012)
18. Recuero, R.: *A Conversação em Rede*. Ed. Sulina, Porto Alegre (2012)
19. Rieder, B.: *Studying Facebook via Data Extraction: The Netvizz Application*. In: *ACM WebSci.*, pp. 346–355 (2013)
20. Rodotà, S.: *Il diritto di avere diritti*. Ed. Laterza, Roma-Bari (2012)
21. Rodotà, S.: *La democrazia e il bene comune*. In: Gallina, E. (a cura) *Vivere la democrazia*, pp. 83–96. Edizione Gruppo Abele, Torino (2013)
22. Rustad, E., Sæbø, Ø.: How, Why and with Whom Do Local Politicians Engage on Facebook? In: Wimmer, M.A., Tambouris, E., Macintosh, A. (eds.) *ePart 2013*. LNCS, vol. 8075, pp. 69–79. Springer, Heidelberg (2013)
23. Teixeira, G.M., et al.: *Complex Semantic Networks*. *Int. J. Mod. Phys. C* 21, 333 (2010), doi:10.1142/S0129183110015142
24. Vitale, E.: *Contro i Beni Comuni. Una critica illuminista*. Editori Laterza, Roma-Bari (2013)
25. Wasserman, S., Faust, K.: *Social Network Analysis: Methods and Applications*. Cambridge University Press, Cambridge (1994)