Identification and analysis of the opinion leaders around the figure of Hugo Chávez on Twitter

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Abstract
Introduction. This article presents the results of an interdisciplinary research carried out by several universities and various departments specializing in different subjects and fields of study. **Objetives**. The aims are to identify the opinion leaders around the figure of Hugo Chávez on Twitter during the time of the sample, analyze user behavior in the microblogging space, and demonstrate whether full cyberdemocracy or mass self-communication are currently taking place. **Results.** The research has monitored all tweets which included the identifiers Chávez, Chavez, @chávez, @chavez on Twitter and has analyzed the daily flow of tweets from January 5 to April 13 2013 (UTC/ GMT − 4). Thus, with 19,943,709 tweets and 8,450,049 users, we have created the largest corpus of messages about a Latin-American political issue in Spanish ever presented by scientific research. **Conclusions**. This article demonstrates now full cyberdemocracy or mass self-communication are not currently taking place.

Keywords
Twitter; Opinion Leader; Venezuela; Hugo Chávez; Social Network.

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1. Introduction and background

The motivation for this research arises from the intention of analyzing a global-scale political debate case on the internet. The project addresses mass communication or self-communication on Twitter in the present day; in order to do so it studies worldwide user behavior around the information and opinions on President Hugo Chávez Frías during January, February, and March 2013 (his convalescence, his death, and the subsequent electoral campaign in the Bolivarian Republic of Venezuela).

This work does not analyze either the figure or the politics of the leader but revolves around the debate and the flow of tweets generated about him. Our aim is neither to analyze his virtues or achievements nor his defects or failures; quite the opposite, it is to analyze the activity of Twitter users around his figure. This work analyzes digital communication and the creation of opinion leaders in the electronic world.

As Silvio Waisbord says, it is all about understanding Latin-American politics and local media in a globalized way: "globalization remains the obligatory point of reference to situate studies about contemporary media, politics, and policy. Even if some of its diagnosis and predictions are faulty, media globalization is unavoidable" (Waisbord, 2013: 138).

There are two fundamental trends concerning the (new) global politics on the internet. On the one hand, the postulates we could define as utopian or optimistic led by Manuel Castells for which digital communication forms create a network or fabric that facilitates mass self-communication (Castells, 2009). Against this positive view a more pessimistic or dystopian approach develops which argues that technology does not promote the access to power for the disadvantaged but rather perpetuates the ruling elites in a radical way. The most important theorist to defend this position is Morozov (Morozov, 2012).

Some recent social and political events seem to prove Castells right. For example, the Arab world revolutions, despite being motivated and brought about by other conflicts, developed via social media; without Twitter and Facebook these changes would have been impossible. Similarly, the *indignados* movement in Spain, the #occupywallstreet (whose name itself takes after Twitter terminology) and the 2013 demonstrations in Brazil and Turkey confirm the relevance of social networks (especially microblogging spaces) in bringing about these changes.

We could talk, as does Castells, of a new political and communicative paradigm called mass self-communication that "increases in a decisive way the autonomy of the communicant subjects with respect to communication companies to the extent of users becoming senders and receivers of messages" (Castells, 2009: 55) (our own translation). It is precisely this mass self-communication we are interested in; we want to study how this new paradigm based on a horizontal power network is produced in the Spanish speaking world.

Latin-America, and especially Venezuela, as Carmen Beatriz Fernández points out, is not located on the fringe of technology when it comes to the Internet and Twitter. Although network use is low when related to the population number, the rate is increasing rapidly.

"That introduction of the Internet to one in every 2.5 inhabitants of Latin-America is far from negligible and it increases a lot when we limit the analysis to the most urban areas and the youngest sector of the population. However, the potential of the Internet as a tool for the organization of party-political work is much higher and reaches introduction levels of almost a 100%. Practically all political party members and activists in the region have access to the Internet and social networks as new communication forms" (Fernández, 2012: 12).

In order to confirm the validity of the mass self-communication theory we offer a rigorously scientific corpus of tweets. Our research intends to monitor an online political debate that could reach the whole of Latin-America and become global. To that end, for 98 days all the identifiers Chávez, Chavez, #chávez and #chavez were followed on Twitter, reaching a total of 16,943,709 tweets and 8,450,049 individual users.

The study of such a large amount of tweets allows us to talk of a communicative tangle (Osteso, Claes, Deltell, 2013). That is, social networks, and especially Twitter, create spaces so open and with such an amount of information that end up becoming tangles. The users of these microblogging spaces must, therefore, resort to traditional leaders in order to place themselves within the cyberpolitical debate.

Despite the possibilities offered by social networks, the digital public sphere (Dahlgren, 2012) and the massive use of the microblogging space, our hypothesis is that mass self-communication is not fully developed. In the case study around the figure of Chávez no horizontal power network is discovered. The opinion leaders who have a higher number of followers and impose the agenda-setting are still the same as in the traditional media (political parties, governments and mass media). Our premise is that it is possible to talk of an overrating of the effects of social networks in general and Twitter in particular on politics, as is maintained by Olorunnisol and Martin (2013) in their study about the use of the Internet in the African scene. The opinion leaders in the corpus of this research represent traditional institutions and powers; this derives from Twitter users being overwhelmed with the amount of information and choosing, as a result, to listen to and follow the leaders who stand out in this communicative tangle. As Morozov maintains, Chávez and his circle have managed to create a "spinternet" or ideological bias by which the most influential and widespread messages are always those of the Bolivarian movement (Morozov, 2012: 160).

In this article we analyze Twitter's opinion leaders in order to understand who created the debate, who was responsible for the agenda setting and, in short, who held the power and the value (in political terms).

1.1. Aims and hypothesis

Our work starts off from the analysis of mass self-communication, that is, we pretend to look into the impact, the flow, and the information movement around a political and social event.

Our hypothesis is that currently mass self-communication in an absolute sense is not being developed in the microblogging space Twitter; this is so because the messages that create more impact and are propagated the most, the opinion leaders on this website, and the flow of tweets always relate to the traditional models of power and value (mass media, political parties, official institutions or mass media personalities). We are talking of a communicative tangle in which Twitter users lost in the in a

confusing information warp choose to follow those opinion leaders already known to them outside the Net. For this research a number of quantitative and qualitative aims have been addressed in order to prove our working hypothesis:

Quantitative aims:

- Measuring and monitoring of any tweet posted in the world with the identifiers Chavez, Chávez, and #chavez, #chávez. Due to character computer coding we have omitted the differentiated search of capital and lowercase words (its use is indistinct in this case). We have, however, maintained the tilde and no-tilde identifiers separate.

- Analysis of the flow of tweets every 24 hours with geolocation information in most relevant cases. Monitoring of the activity and movement on Twitter during the time of the study.

- The compilation of a rigorous and scientific corpus which exceeds 10,000,000 tweets and 1,000,000 users.

- Monitoring of each of the posted tweets with a study of its diffusion impact: that is, retweeted or used as part of an answer. We have omitted the "select as favorite" marker from the count since this feature does not affect the expansion of a given tweet to other timelines.

- Description of the thirty Twitter opinion leaders that emerged from the debate and whose tweets have created a larger impact.

Qualitative aims:

- Analysis of the Twitter opinion leaders' typology with special interest on the discovery of their character or nature; that is, institutional, public or private.

- Description of the role of women in the political debate on Twitter.

- Study of the internalization of the debate. Verify if it is a matter of local or global political communication.

- Description and analysis of the trending topics on Twitter and of the creation of the agenda-setting.

2. Methodology and field of study

This article is the result of an interdisciplinary research amongst departments of Telematics, Digital Communication and Audiovisual Communication. Due to this the methodology used derives from several sciences: on the one hand, quantitative tools typical of Telecommunication Engineering are used for the study of the tweet flow and retrieving, the experiment sample and the monitoring of users; on the other hand, a quantitative/qualitative methodology typical of Social Sciences is used in order to understand the behavior of opinion leaders and the political implications of the debate.

2.1. Research Materials and Data

The main purpose of the research is to register the flow of tweets and their repercussion around the figure of Hugo Chávez from January 5th to April 13 2013 with the intention of discovering the new opinion leaders; all of this based on quantitative data that will allow the compilation of a rigorous study corpus. Once selected, the most propagated tweets will be qualitatively classified.

Since the research manages a large amount of data, a number of online applications have been used for our study. Besides, for the sake of clarity, several charts have been created in order to show the monitoring of the flow of messages. Table 1 shows the basic data of the research and the experiment.

Groups and monitoring for discussion	
Universe	All tweets containing at least one of the following words: @chavez, @chávez, chavez, chávez.
Date of the sample	05/01/2013 to 13/04/2013 UTC/GMT -4
Network tools	www.t-hoarder.com; www.hootsuite.com, www.klout.com, www.tweettronics.com, www.politweet.es, www.wefollow.com, www.topsy.com, www.tweettronics.com, www.trendistic.com, www.followthehashtag.com, www.retweetrank.com
Data control	Daily
Scope of study	Worldwide
Sample totals	Tweets: 16,943,709 Unique users: 8,450,049

Table 1. Groups and monitoring

As the table shows, most of the tools used belong to enterprises and research institutes. However, the central axis of the study, that is, the monitoring of tweets, has been carried out through the application t-Hoarder; a public tool belonging to a non-profit university institution. Its characteristics are detailed in table 2.

API	Uses Twitter's
Payment	NO
Nature	Research
Client access to flow	YES by nature
Transparency	YES
Open code	-
Creation	2009
Aims	Analysis and research
Commercialization	Non-commercial

Table 2. Characteristics of t-Hoarder

All data obtained through t-Hoarder and other applications were analyzed by means of the following quantitative and qualitative methods.

2.2. Quantitative methods

By means of tools and online applications we captured and monitored any tweet containing at least one of key parameters of the sample, that is, those that mentioned at least one of the key parameters.

In order to make our methodology clear, the following elements and basic work concepts need to be defined:

- Tweets: every Twitter message including any of the words studied during the analysis period.

- Retweet (RT): message resent by a user different from its original author, including any of the words studied during the analysis period.

- Unique user: profile responsible for writing at least one tweet during the period of study.

- New user: the first appearance of a profile in the t-Hoarder monitoring according to the parameters as established in the tool; that is, all profiles are new profiles during the day of their first intervention, and only then.

- Recurring user: profiles that write more than one tweet about the topic during the period of the study.

- Mentions: messages including the name of another user in the body of the tweet as well as any of the identifiers studied during the research.

- Reply: a message of response to another user including any of the words studied during the analysis period. A reply is also a mention.

- Original tweet: first-time message including any of the words studied during the analysis period without taking into consideration any of its subsequent retweets.

- Propagation: it measures the viral impact of a tweet on the Net. In order to calculate the propagation of a message, all retweets, mentions and tweets using at least 80% of the original content are added.

All of these data were monitored daily during the period of study, as can be seen in table 3.

	Ts	RTs	Replies	Mentions	Original tweets	One time users	New users
5/1/13	91,174	41,086	11,216	60,092	50,088	50,409	50,049
6/1/13	102,700	50,743	12,368	72,175	51,957	56,418	43,575
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
13/4/13	22,383	11,998	2,736	16,196	10,385	14,444	1,828
Totals	16,943,709	8,141,613	1,941,904	11,495,791	8,802,096	8,450,049	….

Table 3. Sample of daily measurements. Own elaboration

As the table shows, this is a considerable volume of information: a total of 16,943,709 tweets generated by 8,450,049 unique users located all around the world. It is the largest corpus of political tweets in Spanish studied up to this date.

As important as the gathering of the data is the use of a quantitative method to measure the influence of these messages. In order to assess the impact of the tweets we turn to the concept of propagation. To propagate a tweet is to retweet it, mention it, or copy more than 80% of its content. This way we know how many users have resent or commented on a message. Thus, propagation is a numerical way to measure tweet diffusion and a key concept of our research proposal.

With this method we obtain a daily list of the most propagated tweets. We have selected the first five for every day of the 98 covered by the study. This adds up to 490 tweets by 197 unique users. Among these profiles we have classified, using qualitative methods, the 30 that achieved more propagation for each of their tweets. It is precisely the members of this group that can be considered as the opinion leaders in the debate about Chávez. That is to say, the criterion used to define a Twitter opinion leader is based on a quantifiable datum: the propagation of his or her messages.

In table 4 other relevant data concerning the 30 users with most propagated tweets are offered: their posting dates, their propagation, the number of followers the tweets had at the moment of posting, their Klout score, the profession of the users (if identified), their gender and age (if public) and their location (whenever geolocation was possible).

N	Use	Posting date	Propagation	Followers	Klout	Profession	Gen der	Age	Location
1									
2									
⋮									
30									

Table 4. Study of the data for users with the most propagated tweets.

Tables 3 and 4 allow us to make up a list of the leaders and tweets with higher impact and propagation which are in turn analyzed with qualitative methods coming from the Social Sciences.

2.3. Qualitative methods

Once the list with the 30 opinion leaders was obtained, we observed those profiles and carried out a semantic analysis of the most propagated tweets. The detailed research on the leaders focuses on their behavior and the (inter-)activity on Twitter. The analysis of the tweets with the highest impact and of the thirty opinion leaders allows us to produce an outline about leadership in the debate around Chávez during the period of this study.

For the research on Twitter leadership this study often turns to semantic analysis (Tumasjan, Sprenger, Sandner and Welp, 2010) and to a keyword search (Said Hung and Arcila Calderón, 2011). Besides making use of both these methodologies, the proposal also carries out an analysis of 490 tweets in order to detect possible errors in the automated semantic meters.

Furthermore, we examine each of the profiles of the opinion leaders so as to research their nature/character, their behavior, and their data. Part of the interest of this study resides in understanding whether Twitter (as a public sphere) aids in the reproduction, and if so in what ways,

of the models of public opinion creation (Habermas, 1981) and the control and power strategies in the political debate (Noelle-Nemann, 1995).

Because of the qualitative study of the opinion leaders, we will be ready to find out whether we are before physical people, institutions (public or private) o character-based profiles.

This qualitative analysis also allows us to know a relevant fact that, unfortunately, is frequently ignored: the participation and impact of the activity of women in politics and in the creation of opinion and social debate in Latin-America.

3. Results

The high volume of data and the double methodology comprised by this research makes it appropriate to divide the presentation of the results into three different blocks: firstly, the study of the flow of tweets during the period of the study; secondly, an explanation of typology of the opinion leaders; and, finally, an analysis of the behavior of the thirty users with the highest tweet propagation rate.

3.1. Development of the flow of tweets during the sample period

From the moment president Chávez announced, on December 8 2012, the need to return to Havana in order to undergo a new surgery, his Twitter profile, which had up to then shown great institutional activity, started showing a total absence of messages.

Hugo Chávez's relationship with Twitter is one of the most interesting in the field of international politics. In just a few months, Chávez became the non-English-speaking leader with the highest number of followers and the highest Klout score. In only 24 hours he achieved 50,000 followers and in less than a month he was supported by 500,000 users. The activity of the Venezuelan Head of State in this website was decisive for the emergence of all sorts of rumors, hoaxes, and news about his hypothetical death. The monitoring of the Twitter user community reveals how followers echoed these rumors and the impact official statements issued by the Government generated.

The 10th of January 2013 was considered as the deadline for the then recently re-elected president's return to Venezuelan territory. According to the Constitution approved by Chávez himself some years before, that should have been the date of the swearing-in ceremony, the date for taking office. According to the Law of the Bolivarian Republic, the event required the presence of the candidate. Chávez's opponents believed that his absence would mean the call for new elections, something that caused a huge surge in the activity on Twitter, as can be seen in figure 1.

As can be seen in this chart, which shows GMT-4 time (computing tools do not allow a UTC-4:30 calibration, that is, of Venezuela's time zone), Twitter community activity increased several times over during the previous days; especially since January 8, that is, the date the government officially announced Hugo Chávez's absence from the swearing-in ceremony, but neither the cancellation nor the call for elections his detractors were demanding. This announcement caused a heated web discussion and ended with an activity peak of 350,000 tweets on the 10th itself when it was confirmed that the government would allow the ceremony to be celebrated without the president

being present. After the government's refusal to call for elections, both supporters and opponents accepted the situation and Twitter activity dropped, resuming the previous averages.
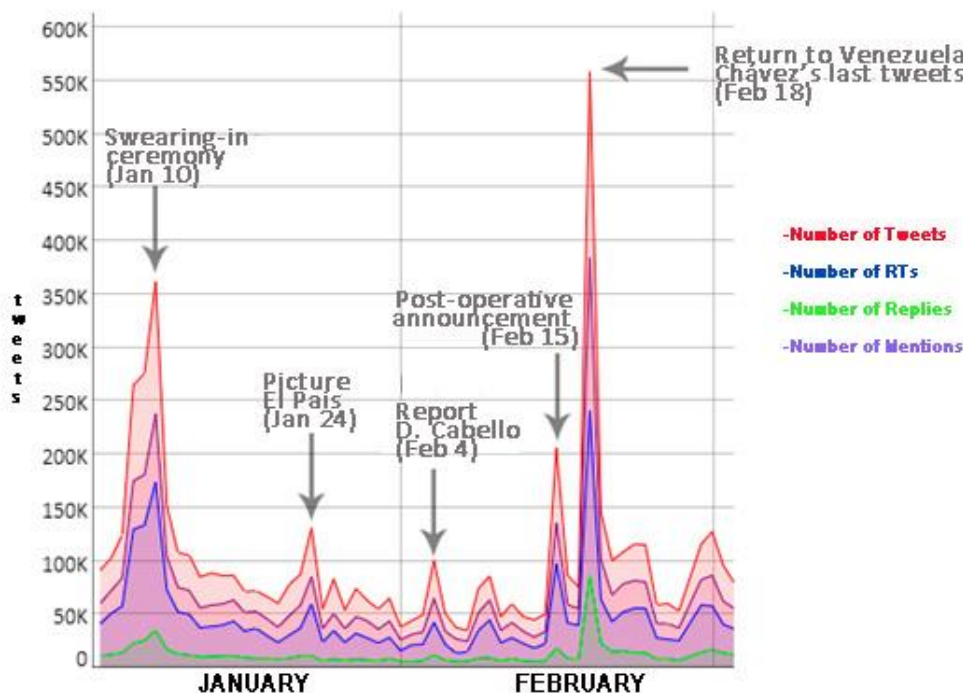

Chart 1. Evolution of the number of tweets from January 5 to March 4

According to Castells, what happened on January 10 is an example of the "power and cultural battle":

> "Cultural battles are the power battles of the information age. They are fundamentally fought in the media and by the media (in this case, Twitter), who are not, however, those who hold the power. The power, as the ability to impose behavior, lies in the information exchange and symbol manipulation networks that relate social actors, institutions and cultural movements to one another through icons, spokespeople, and intellectual amplifiers." (Castells, 2006: 418). (our own translation)

Twitter became the medium where to give opinions and develop a debate about the swearing-in ceremony and the implications of the official candidate's absence.

On January 24 one of the most talked-of media scandals takes place. The Spanish newspaper *El País* published a photograph of an intubated Chávez which turned out to be false; it was a screen capture of an American program on surgery shown on *YouTube*. Despite the great impact this causes in both Spanish and Venezuelan press and TV, the Venezuelan Twitter community does not generate a debate as intense as the one for the swearing-in ceremony. On the 24th itself 130,000 messages are registered; when the details of the purchase of the false photograph are known, between 60,000 and 80,000 daily messages are generated, and figures return to their previous activity rate on February 1.

It is hardly surprising that an image would create such a high activity. As Castells points out, "the construction of power is realized through the construction of images" (Castells, 2009: 262). The image of the old intubated and dying man was to be symbolically interpreted as the end of the leader of the Bolivarian Movement. As was shown by J. M. de Pablos, *El País* had been openly against the Venezuelan leader and had favored his opponent Uribe during their confrontation (De Pablos, 2008: 170).

On February 4 a new activity peak is reached (100,000 tweets), due to the message of Diosdado Cabello, President of the National Assembly, who having just returned from Cuba, publicly states the slow improvement of the President's health. 200,000 tweets are posted on Februray 15 when a new announcement concerning Chávez's post-operative period is made. Again it can be observed that the activity resulting from a government official message is sudden and far-reaching but also that it drops faster than that related to news and rumors.

This effect is multiplied on the 18th when Chávez himself announces, by means of three tweets, his return to Venezuela: 1. Tweet 18/2: "We have arrived back in the land of Venezuela. Thank you Lord!! Thanks to my beloved people!! We will continue our treatment here." 2. Tweet 18/2: Thank you, Fidel, Raúl and all of Cuba!! Thank you Venezuela for so much love!!! 3. Tweet 18/2: "I'm still clinging to Christ and I trust my doctors and nurses. Onwards to victory!! We will live and we will overcome!!! (our own translation).

After the publication of the President's tweets, a number of half a million messages is reached for the first time; a day later, the discussion settles around 100,000 daily tweets.
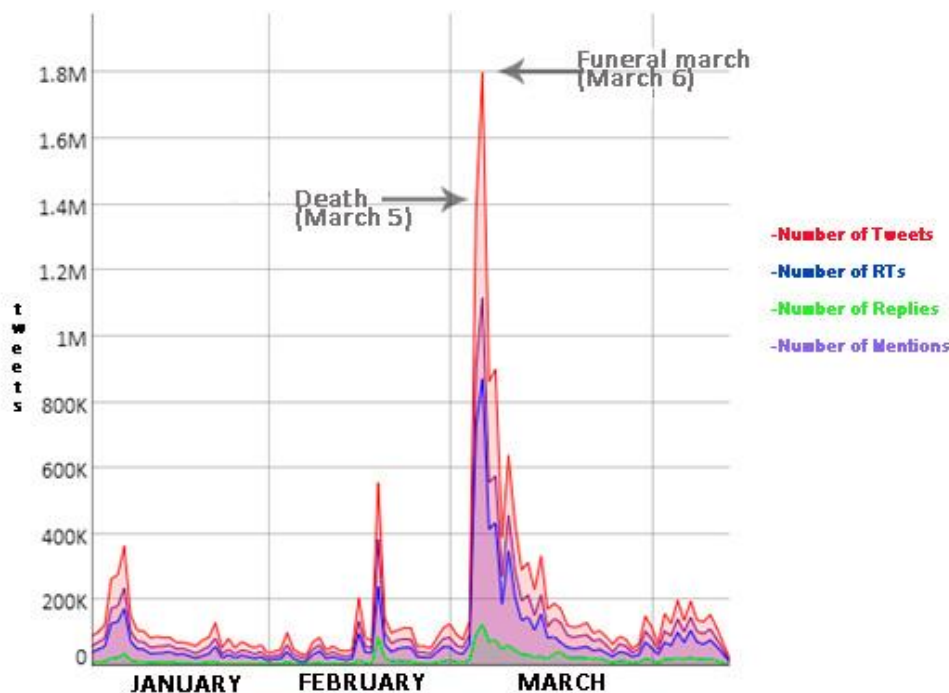

Chart 2: Evolution of the number of tweets from January 5 to April 13

On March 5 and after another period with no tweets from the President, Nicolás Maduro announced, in a live national TV appearance, Hugo Chávez's death. The response was immediate on Twitter with messages reaching 1,400,000. As can be seen in chart 2, numbers reached an all-time high of more than 1,800,000 the following day, due to the live broadcast of the funeral march. On March 7 the activity slowed down; the 850,000 messages registered on the day are attributed to the official call for elections. A day later the number increased slightly and reached 900,000 because of the state funeral attended by international personalities. Saving some exceptional peaks, the activity gradually slows down every day until it settles in under 200,000 daily tweets on March 16 and around 100,000 on March 19. The peaks of the 10th and the 13th are related to Evo Morales' accusing the US of poisoning the President and to Nicolás Maduro's claiming that Chávez had influenced the election of the new Pope (the first from Latin-America).

There is an anomaly in the isolated peak on March 31 impossible to ignore in this analysis. On the one hand, there was activity responding to a new statement by Maduro who compared Hugo Chávez with Jesus Christ. On the other, the date marks the anniversary of the birth of American political activist Cesar Chavez, which also generates activity related to the word "Chávez". Therefore, of the 150,000 tweets registered that day many are unrelated to the object of study and must be merely regarded as noise.

From the 2nd to the 10th of April a third public statement by Maduro claiming he had been visited by Chávez's spirit in the form of a bird generates a wide response. Most of the related messages are of a humorous and satirical nature. The fact of the microblogging web having a starling for a mascot promoted the proliferation of memes and all sorts of jokes. After a few days the topic is forgotten and the number of daily tweets decreases to reach their lowest: below 50,000.

3.2.   Typology of Twitter users and opinion leaders

In order to classify the users of this microblogging space we present our own typology based on the quantitative and qualitative methods discussed above.

The main Twitter account classifications revolve around the interpretation of user activity as well as the calculation of the arithmetic relationships between followers, tweets and generated interactions. However, given the aim of the research, a typology based on the origin of the person administering the profile seems more suitable. The first step of this classification is the analysis of the nature of the user. Thus, we understand that accounts can be categorized into three basic groups: personal, institutional, and character-based.

-   Personal: those created by a physical person with identification data that can be associated with the account administrator. We define this kind of profile as the iconic trace a physical person leaves on Twitter. The management tends to be personal and not transferred, although there are exceptions, such as happens with some celebrities who create this type of profile but lack the knowledge or the time to manage it properly. In cases such as these, the task of administering the contents falls on an assistant or a communication office, without it corrupting the iconic relationship between account and represented person. Examples of this are: @CFKArgentina (Cristina Fernández, president of the Republic of Argentina), @NicolasMaduro (Nicolás Maduro, current president of Venezuela), @justinbieber (Justin Bieber) or @BarackObama (Barack Obama) amongst many others.

- Institutional: those profiles representing a business collective, an association or an organization of any other nature, regardless of whether they have a social, commercial or any other type of aim. Institutional accounts are associated to brand values, irrespective of the people in charge of managing the organization. Normally these profiles are managed by teams specializing in online image spreading and usually headed by a community manager. Here we can find profiles such as @Calle13Oficial (music band), @Senadoesp (Spanish Senate), @InstCervantes (Instituto Cervantes), @GameOfThrones (account for HBO series *Game of Thrones*) or @policia (Spanish National Police Force).

- Character-based accounts: profiles born online and which, taking advantage of the anonymity possibilities offered by the internet, create a character on Twitter which is not associated to the creator and/or manager of the account but rather to a sort of personal brand typical of the microblogging site. This synthetic image might resemble either a person or an institution and has one distinctive feature: an individual user can create a series of fake profiles in order to strengthen his or her leadership. A typical user of this type of account is that of the fake (parody accounts) who identifies his or her account with somebody else's account from any of the previous categories but satirizing its content. This category includes accounts such as @PaulocoelhoDice (spoof account with quotes by Paulo Coelho which, as will be seen later, was disabled), @DichosdeChavez (a compilation of quotes by the deceased president), @PibeValderrama (spoof generating ironic messages), @hematocritico (the Hematocrítico, a blogger and Twitter commentator on TV programs generally regarded as junk TV), @postureo_ (a compilation on topics about contemporary Spain).

After having analyzed the different accounts according to their origin, it becomes relevant to address their activity and place them within a classification model. In order to do so, we shall use a typology created by Mari Luz Congosto which focuses on the analysis of message propagation and of account routine with other messages. This taxonomy will be modified so that it can be adapted to the specific context of the study.

- Influential: profiles that achieve a remarkable and continuous propagation of their tweets, creating thus a network of faithful followers who will act as loudspeakers for the original users. The relationship between one's own generated content and somebody else's propagated content should be overwhelmingly favorable to the former for a user to be considered part of this category.

- Networkers: profiles that having created a wide network of followers keep a balanced relationship between own and propagated content.

- Resonators: those who propagate a lot more than they generate, keeping the own and propagated ratio clearly in favor of messages from other accounts.

- Monologuists: users that generate a large quantity of their own content but fail to get it propagated by other accounts. Their isolation is increased by their almost exclusive dedication to a message creation that excludes intercommunication.

- Passives: those who achieve a significant propagation with little published content and an almost non-existent activity.

- Isolated: those who besides keeping a low activity do not manage a significant propagation of their messages.

Academic literature on Twitter shows that any member of any of these categories (with the exception of the isolated and monologuists) could become an opinion leader and creator of social debate. Thus, sometimes, passive accounts are the most active in the propagation of their messages, as has been demonstrated by the studies related to movie promotion on Twitter (Deltell, Osteso and Claes, 2013). Likewise, character-based profiles and fakes can, occasionally, compete with real institutions and recognizable physical people (Wilson, 2011). However, our interest in this research is to find the opinion leaders, those who generate the "value" of an event.

As Castells claims: "the value is, in fact, an expression of power: those who hold the power (and often they are not the ones who rule) decide what is valuable" (Castells, 2000:55). This is why we include the idea of propagation. According to our research, the Twitter users to hold more power during the sample test were those who managed to get other profiles to repeat, celebrate, and comment their messages, that is, those who made their tweets go viral in terms of opinion and political debate.

3.3. Tweet analysis of the 30 opinion leaders

The first fundamental datum that derives from the analysis of the most-propagated tweets is that there is not an inevitable and direct relationship between the number of followers and the impact of a message. As can be seen in table 5 (where, for reasons of space, only 10 messages have been included) some profiles with scarcely any followers achieve propagation by thousands of users.

The impact or propagation of a message can exceed the number of followers a certain account has. An example of this is the fake user @PibeValderrama who with only 120 followers reaches 3840 interactions.

We can see that a significant amount of opinion leaders are public personalities related to Bolivarian politics or belonging to large communication groups from that area. Media personalities are capable of empathizing with the audience and this contributes to hosts, actors and TV personalities being, both locally and globally, amongst the most followed users, not only on Twitter, but also on other social networks (Marwick and Boyd, 2011). This presence causes certain inertia towards loyalty on online media; and this is decisive when trying to understand why institutional and traditional mass media messages are the ones to generate more traffic on Twitter. These information senders are the ones with more personal receivers associated to them; in practice, this contributes to the perpetuation of the traditional communication model where communication groups address information consumers.

N	User	Text	Posting date (2013)	Propa gation	Follo wers
1	@PaulocoelhoDice	¿Murió Hugo Chávez y hay gente que se alegra? La burla al dolor ajeno, sólo demuestra la pobreza y miseria humana.	March 6	9,765	No data
2	@charlespgarcia	Former Panamanian OAS Ambassador Says President Hugo Chávez Is Dead http://t.co/bkiumVXtxm via @latinorebels (@char ...	Feb 28	9,124	705,577
3	@gtobecom	Váyanse al carajo yanquis de mierda que aquí hay un pueblo digno - Hugo Chávez http://t.co/clb1C9LGrT #hugochavez http://t ...	March 8	8,077	7,579
4	@PoleoRafael	Ahora que HCR habló, les cuento: Chávez se desangró en la operación de diciembre y nunca se repuso. Murió 30 diciembre y fue embalsamado.	March 10	4,752	164,898
5	@Gibelli_Viviana	Maduro no es Chavez y Roque Valero no es #Montaner ni de vaina	April 10	4,204	3,979
6	@dcabellor	Capriles te metiste con Chávez y con el profundo amor que siente el pueblo por el Comandante de la Patria, hiciste una declaración de guerra	March 10	4,172	623,738
7	@PibeValderrama	Viendo esa gran multitud de personas en Venezuela, me pregunto si Chavez era tan malo como nos lo mostraban aquí los medios.	March 6	3,840	120
8	@DeboConfesarQue	¿Murió Hugo Chávez y hay gente que se alegra? La burla al dolor ajeno, sólo demuestra la pobreza y miseria humana.	March 5	3,601	2,566,611
9	@NicolasMaduro	Comparto con ustedes el hermoso mensaje del ex-presidente Lula da Silva. Obrigado! Viva la unión de Nuestra América! http://t.co/2tzjBUavNL	April 1	3,513	983,325
10	@manriquehector	Palabras textuales de Chávez: "Capriles será Presidente el día que yo me muera" Entonces todos a Seguir el Legado d ...	April 7	2,954	67,905

Table 5. The ten most-propagated tweets

Table 6 summarizes the basic data of the 10 users that can be considered absolute leaders (the study comprised the analysis of 30 which, for space reasons, are not included in the table).

N	User	Following	Total of tweets posted	Ts/day	Twitter registration date	Klout	Verified
1	@PaulocoelhoDice	No data because of account suspension					
2	@charlespgarcia	351	6,024	11	Nov 11	83	Yes
3	@gtobecom	7,230	148	1	Sep 10	48	No
4	@PoleoRafael	398	3,576	5	May 11	70	No
5	@Gibelli_Viviana	870	1,773	3	Jan 13	47	No
6	@dcabellor	8,710	5,134	4	March 10	79	No
7	@PibeValderrama	1	77	1	March 13	31	No
8	@DeboConfesarQue	161	6,239	6	Sep 10	79	No
9	@NicolasMaduro	34	793	14	March 13	80	Yes
10	@manriquehector	891	15,471	12	Nov 9	72	No

Table 6. Basic data of the first ten absolute leaders (out of a total of 30)

Within the 30 analyzed profiles we find that 62% corresponds to physical people of which only 4% (3.33% of the total) relates to people unknown outside the Net (as can be seen in chart 3).

17% corresponds to institutional profiles, all of which are mass media and 25% of which represent a satirical online medium.

As to the rest, 21% corresponds to character-based profiles, of which in turn 43% (10% of the total for the sample) parody real people.

One of the accounts, the one to achieve the highest comment propagation, was disabled by Twitter. It was a character-based account, @PauloCoelhoDice, which by failing to include in its description its nature as a parody or non-official account was disabled following Paulo Coelho's request. Therefore, since neither the number of followers nor the amount of published tweets is available, it cannot be included in several of our statistics.

Only 3% of the leaders have a private profile, that is, with tweets not open to the public. 43% have verified accounts or, in other words, accounts verified by Twitter as representing official profiles thus establishing their legitimacy.

If we add up each user's number of followers we get a total of 26,160,071. Out of this number, 69% follows accounts with a real reference, 16% follows institutions, and 15% character-based accounts. In terms of profession, real reference profiles are divided into politicians, actors, musicians, writers and also include a music producer and a secondary-school student.
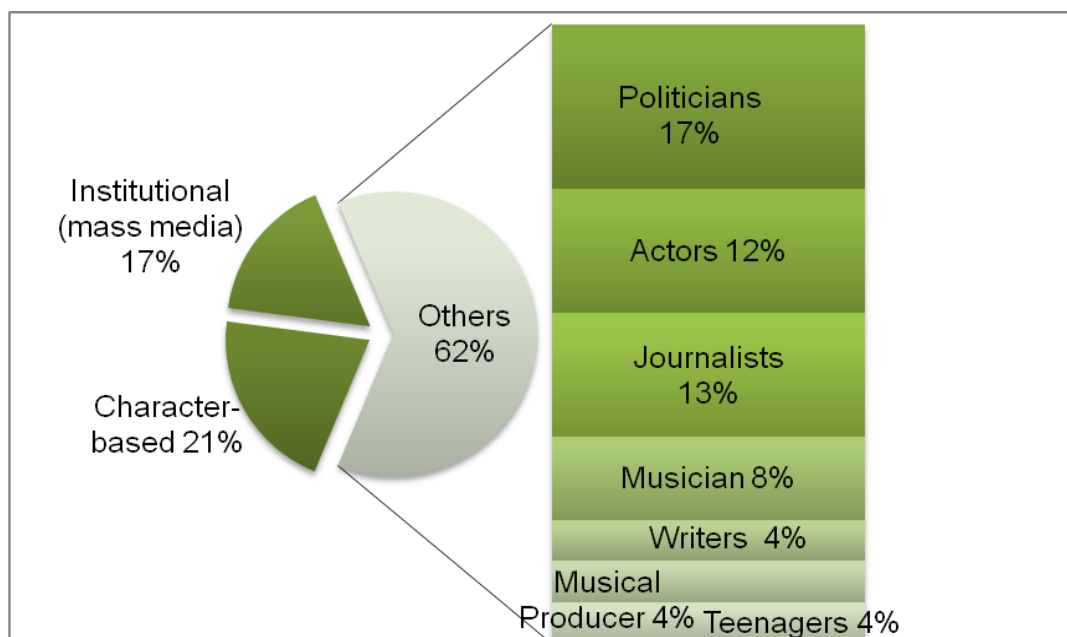
Chart 3. Nature and profession of the leaders

In terms of gender, 50% of the profiles correspond to men, 40% to institutions or character-based profiles, and only 10% to women (an actress and two politicians).

73% are resident in Venezuela and the rest are divided amongst Spain (10%), the US (7%), and Argentina, Puerto Rico and Colombia with slightly less than 3% each.

94% of the leaders use Spanish in order to communicate and 6% English. The vast majority use a correct linguistic register (only 3% use rude words). Only 3% of the messages include abbreviations or sms language (interestingly, those in English). The topics of the messages vary and include current affairs, politics and, rarely, personal subjects.

The average of tweets sent by each member of this group is 22.37 daily messages. Character-based and, above all, institutional accounts are those who write the most; for example, @globovision has an average of 224 daily tweets since it opened its account on November 2008.

30% of them include links to webs and pictures of an informative nature, whereas only 20% use the symbols "@" and "#" which are very common and convenient on Twitter.

Regarding the content of the leaders' tweets, we can classify them into those of a Chavista nature (33%), those against the President (40%) and a remaining 27% that can be considered indecisive or vague since they do not declare themselves either passionately in favor of or against Hugo Chávez.

Almost all of them offer open access to their accounts; 95% keep their tweets after posting. The average of tweet records is 27,864 messages per account since its opening. The 30 profiles with more propagated tweets are mainly within the influential category.

The study of tweet propagation presented in the discussion ultimately allows us to select amongst the activity of this communicative tangle those profiles that come to represent the leadership of opinion. This list is made up of thirty accounts. The first characteristic of leadership is continuity. During the monitoring sample period, daily leaders are recurring and correspond to the absolute leaders, thus showing the level of theme immersion required by the leader figure on Twitter. These users need to follow the news during long periods of time and spread their personal vision on that part of reality to the online community. Or, to put it another way, leaders are extremely close to and familiar with the topic dealt with. Those who appear sporadically in order to discuss very specific topics (for example, Spaniards who join the discussion because of the picture published by *El País*) do not achieve a globally relevant propagation despite having a one-time remarkable expansion. Related to this idea, we can find in the list of leaders profiles such as Nicolás Maduro's which appears ten times within the group of the five most propagated tweets of the day.

4. Discussion

The data obtained in the research and the analysis of the flow of tweets reveals some characteristics which are fundamental in order to understand online policies. As was observed by a group of Ibero-American professors and researchers Twitter is "related to speed, to the creation of instant communities by means of hashtags, to edition time saving when spreading the latest news, and to the possibility of instantly reaching the witness at the scene of the news" (García de Torres et al, 2011: 618). Although the authors were referring to media from the American continent, their hypothesis can be clearly applied to our research.

Hugo Chávez was the Latin-American president with the highest impact on Twitter. His influence in the microblogging space surpasses that of any other Spanish-speaking politician. One of the fiercest criticisms of his office was, in fact, that he ruled the country by tweets (Moreno, 2012). Chávez's withdrawal from the traditional public sphere also meant his withdrawal from the digital public sphere. His quitting Twitter was an opportunity for his detractors to redefine both the political agenda and the "value".

In the study of the flow of tweets an essential characteristic of online communication can be observed: the use of the "value" of an event is shown by the opinion leaders. With the exception of Hugo Chávez's death, which is a historical event and a worldwide piece of news in itself, the rest of peaks and tweet shifts are always generated by traditional mass media (*El País* and *ABC,* Spanish newspapers), by the Governments offices (official statements, tweets by the President and other secretaries), and by the activity of the political calendar set by the Bolivarian State Leadership.

This research seems to confirm that tweet flow activity is set by traditional powers. In this sense, it contradicts Castells' "mass self-communication" and seems to rebut his theory about a horizontal information system. In a way, it can be understood as a confirmation of Morozov's "spinternet" hypothesis as explored in the analysis of the opinion leaders. 62% of these leaders are physical people or institutions representing the traditional political and social powers: they are political leaders, actors, journalists, writers or mass media; "anonymous" people fail to propagate their messages or impose their opinion.

As can be observed in the tweet flow and in the analysis of the thirty opinion leaders, a few users are responsible of the agenda-setting and the reference framework and control the tweet flow activity.

Participation, even though massive –we are working with almost a 20 million message corpus– appears to be imposed and directed by a few.

However, even though quantitative data refute "mass self-communication", the qualitative analysis of the leaders and the study of some singularities allow for the possibility of a new scenario. As Castells says, "resistance to power is exercised by means of two mechanisms which constitute power in an online society: network programs and the connections between these networks" (Castells, 2009:78). Twitter is a network fabric thanks to which some users have become power connectors. Many of them show a critical attitude towards president Chávez and the traditional power institutions.

The first relevant singularity appears in the serious mistake made by the newspaper *El País*. Even though the alleged picture of Hugo Chávez was only on the printed and online versions of the newspaper for a few hours, the Twitter community uncovered and pointed out the mistake. The information and activity peaks in the microblogging space reveal how a mistake can be discovered and penalized on the Net. Even the newspaper itself admitted to having discovered the mistake because of its impact on Twitter (Irujo, Elola, 2013). It was the users of the website who imposed the value and corrected the traditional medium.

An interesting point in the discussion is that, by semantically analyzing the tweets with the highest impact, a majority critical towards the President is discovered. Even though Hugo Chávez and his team controlled the information agenda and the activity flow, the detractors of the Bolivarian movement expressed themselves in 40% of the messages whereas Chavistas are only 33% (the remaining 27% are in an informative or ambivalent position). This "resistance" to power is always developed in small niches that only sometimes manage to break traditional patterns.

Interestingly and as was demonstrated by Noam Lupu the group of Chavista leaders is not in a monolithic social block: Chávez's voters belong to different social and cultural levels and cannot be grouped into one social class (Lupu: 2010, 25-26); we are speaking of a group with a pluralistic origin.

Our study confirms Sampedro and Resina's hypothesis:

> "The digital public sphere reproduces the biases of the conventional public sphere which, still built on traditional communication and political representation media, occupies a central position with regards to power management. Opposed to this, numerous debates and protests take place and peripheral public spheres proliferate which are deployed by means of digital technologies and which strengthen new counter-power dynamics. These project a more discursive, horizontal and self-managed public opinion and defy current democratic structures" (Sampedro y Resina, 2010:159).

That is to say, in our research we encounter a scenario or public digital sphere where even though traditional patterns are reproduced new singularities and possible outbreaks of full mass self-communication are emerging. The most interesting aspect of the "Twitter user mass" is that of the communicative tangle. The vast majority of profiles (that is, almost 8,000,000) appears to be lost in the whirlwind of tweets. These users have minimum influence over the rest and it is only with their gregarious behavior that they manage to make their activity influence the flow.

The communicative tangle theory maintains that users tend to reproduce online their traditional, non-digital behavior thus reinforcing traditional institutions and the power of mass media. However, once users recognize the new platform and communication sphere new leaders are born. Character-based profiles detach themselves from the communicative tangle theory and present a totally Twitter-based communication model. These characters cannot be understood as traditional leaders and it would be almost impossible to predict their impact in an election. However, they moderate, generate and clarify the debate within this microblogging space.

Another anomaly is the presented by the case of @JuanFernett. This user is a low-profile, young teenager whose most propagated messages are always humorous.

One of the surprising facts provided by the research is the low influence of women: in the debate around Hugo Chávez only 10% of the profiles identify themselves as women. This number is even lower to that provided by other researches where female participation on Twitter is around 15% (Hung y Arcila, 2012: 879). Furthermore, two out of the three female users are famous people outside the Net: the president of the Republic of Argentina and the Venezuelan politician Jacquelina Faría. This fact does not indicate low female participation on Twitter but rather that their messages are no recognized and propagated by other users.

Finally, even though this research has managed a very large amount of tweets these are only a small percentage of the total flow. During the research it has been observed that hashtags devoted to Venezuela, Chávez's policies and other aspects related to the monitored topic are a minority. Most Twitter messages are of a non-political nature.

4.1. Conclusions

This article introduces the summary of a research on the emergence of opinion leaders on Twitter. The subject of our study has been the monitoring of all tweets including the identifiers Chávez, Chavez, #Chávez and #Chavez. Thanks to various tools we have attained a global corpus of 16,943,709 tweets, generated by 8,450,049 different users. This is the largest corpus of messages of a political nature in Spanish studied to date.

The first significant piece of information of the study is the internalization of the debate around Hugo Chávez. Almost all tweets were written in Spanish. Their location was mainly Venezuela, although the debate spread throughout Latin-America, the US and Spain.

Information on Twitter is of a perishable nature and it expires even faster than in traditional media. The charts on the flow of tweets allow us to show how news and events generate debate in a rapid but inconstant way.

The study of the flow of tweets shows how, although participation is huge, both agenda-setting and framework are generated by mass media and traditional powers. The activity in the microblogging space corresponds to strategies directed by Venezuelan and Spanish mass media, and by official messages and statements from the government of Venezuela itself.

Even though the agenda-setting is carried out by traditional powers, Twitter becomes sometimes the means to correct mass media. Thus, as has been observed in the case of the article in *El País,* it was

precisely the increase in the activity on the microblogging space which alerted the Spanish newspaper and forced it to rectify its mistake.

In the article we introduce a new formulation of the Twitter opinion leaders. The most appropriate quantitative criteria is that of propagation which shows the tweets with the highest rate of retweets, mentions, answers or copies in 80% of their content.

The analysis of the opinion leaders allows us to show them being, in their vast majority, personalities from outside virtual space. Thus, the digital public sphere around Chávez seems to reproduce the debate carried out in the non-virtual public sphere. Almost all the users in the study are politicians, journalists, or actors.

Our study also shows the low impact women have on political topics in the microblogging space. Only 10% of the leaders are women. However, their participation in the debate is significantly higher showing, at least in this research, a degree of chauvinism which favors male leaders.

In this research we show how when faced with the huge amount of information generated on Twitter (almost 20 million tweets) users get lost in a communicative tangle. In order to escape from this tangle they follow leaders known to them outside the microblogging space. Therefore, our study seems to confirm the theories of those dystopians or cyberpessimists who consider that power in the internet is still held by traditional media and powers. However, some of our study's singularities (the reporting of Chávez's fake picture, the emergence of some Twitter-born leader, and the occasional spontaneity in the flow of tweets) allow us to present examples of cyberpolitics away from traditional or non-virtual models. That is why we consider that part of Manuel Castells' theory of mass self-communication is starting to emerge even if it is not fully developed at present.

Dates

Research starting date: January 2013

Research ending date: December 2013

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