

Solidarity in Social Media: when users abandon their comfort zone - The Charlie Hebdo case

***Solidaridad en la redes sociales:
cuando el usuario abandona su zona de confort -
el caso de Charlie Hebdo'***

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Abstract

The fear of sharing information experiments a decrease as new generations start being active in Social Media platforms. Everybody behaves very homogeneously within their own community, following recurrent communication patterns. But when a tragic event shakes people's minds, they feel the impulse to break these patterns and communicate their feelings to a bigger audience. In this paper, we analyse this phenomenon, dissecting the communication changes over time, identifying new patterns and discussing our findings in the context of a real scenario, namely the Charlie Hebdo terrorist attack.

Key Words

Social Media - Users behaviour - Event impact - Behavioural change - Solidarity - Charlie Hebdo

Resumen

Las nuevas generaciones se sienten como en casa en las redes sociales. El miedo a compartir información en estas plataformas brilla por su ausencia. El comportamiento de cada uno es muy homogéneo dentro de su propia comunidad, siguiendo patrones muy claros y definidos. Cuando un evento trágico sacude los corazones de los usuarios, la necesidad de romper esos patrones para comunicar sus sentimientos a una audiencia mayor se impone. En este trabajo, analizamos este fenómeno, identificando los cambios en la comunicación en el transcurso del tiempo así como nuevos patrones. Para ilustrar nuestro análisis, nos basamos en un caso real, el atentado contra la redacción de Charlie Hebdo en París.

Palabras clave

Redes Sociales - Conducta de usuarios - Impacto de Eventos - Cambio de conducta - Charlie Hebdo

1. Introducción

Social Media (SM) has become a living document of our culture. Ideas, frustrations, worries, achievements are posted by millions of people in an almost real-time manner. Users literally post everything going through their minds in an almost unconscious manner, making the SM stream facts-reach but also feelings-intensive at the same time.

The SM communication usually follows different patterns, depending on the type of user (Giles, 2010), on the particular circumstances (Fischer et al. 2011), etc. These patterns manifest in recurrent manner over time at different levels: interaction with other users, usage of the same language and SM artefacts –such as hashtags, abbreviations or emoticons–, SM specific actions –e.g.: propensity to “liking” the status update of a given SM user–, etc. The study of these communication and interaction patterns within a group vs. the rest of the SM network resulted in a prolific research domain targeting the detection of SM communities.

Many research lines have been focused on the study of SM communities based on communication and interaction patterns (Fortunato, 2010). The consistency over time of these behaviours has even been exploited for the creation of predictive models, building upon the recurrent aspect of the SM interactions and interactive conducts (Asur & Huberman, 2010; Gilbert & Karahalios, 2009; Golbeck et al., 2011)

In spite of this quite homogeneous and almost predictable behaviour, there are certain circumstances where an event triggers a quite unexpected reaction, where surprisingly many users join forces to participate in a bigger scale dialogue, interacting with anonymous users around the world to adhere to the same message, motivated by the need to speak up and the need to share feelings and to show support to other users in the same circumstance. We are talking about the reactions to those events that shake everybody’s hearts, awakening feelings of frustration, impotence, hate, etc. Events where people feel threatened or where they consider their rights taken from, for example a terrorist attack (Cho et al., 2003), a high

scale natural disaster, such as an Earthquake, a Tsunami, etc (Muralidharan et al., 2011; Peary et al., 2012).

The purpose of this paper is providing an extensive analysis on how these behavioural changes manifest in the SM channels. Taking as case study the *Charlie Hebdo* terrorist attack from the past January 7th¹, we dissected the course of the events over time, monitored the reactions in several geographies across Europe and several languages and studied the usage of SM communication artefacts, such as hashtags as a mean to express solidarity and identification with those suffering the pain. We also explored the need for community and the search for identity in the same context.

This paper is structured as follows: following this introduction, we provide the *Background* work for this research. After that, we discuss our findings on the behavioural changes motivated by these heart-breaking events and we provide the evidence of our conclusions referred to the *Charlie Hebdo* shooting example. We closure our work sharing our conclusions and pointing to further research lines derived to continue our analysis.

Background

SM has been object of intense research to extract information about events that take place in the real world (Bernabé-Moreno et al., 2015; Xie et. al., 2011). Partially motivated by the broad adoption of Twitter as the SM platform for everything and the fact that most of the Twitter APIs are open to the public, easy-to-use and information-rich, the largest part of the SM-related research focuses on Twitter.

The usage of Twitter's hashtags, or strings prefixed with the # symbol employed to mark keywords or topics, has been intensively researched. Hashtags is a community product, that is, Twitter users created them organically as a way to categorize messages². Bruns et. al (Bruns & Burgess, 2011) explored the usage dynamics of hashtags in the formation of ad hoc audiences in the politics domain. Also in the domain of politics, Bastos and his co-authors (Bastos et al., 2013) explained the diffusion mechanisms of hashtags and the popularity gain of trending topic

hashtags. In (Ma et al. 2013), Ma et. al. established a set of metrics to determine the popularity of a hashtag and provided a method to forecast how popular a particular hashtag could become based on dissemination algorithms. Several studies focused on how different hashtags are used simultaneously in different languages as enabler for joint translation, for example the work of Carter et. al (Carter et al. 2011).

SM has traditionally been a channel for fast news spreading, which fostered a research line focused on crisis management and emergency handling in response to a tragic event (Schwarz, 2011; Gortner & Pennebaker, 2003), especially after studies related to the speed of news diffusion in the SM channels (Naveed et al. 2011).

But SM has not only been used for information spreading, but also to support cognitive and personality aspects, such as the need to manifest and express the own identity. Sharma et al. studied the mechanisms of radial identity groups forming in Twitter and people try to find their identity in bigger groups and the sense of belonging (Sharma, 2013). The own identity is an integral part of the SM dialogue and a motor for the interactivity and communicative richness, as demonstrated in (Marwick, 2011).

Solidarity outbreak and behavioural changes

In this section we are going to discuss one by one the different symptoms for the behavioural change triggered by this type of events, both at individual level, but also in an aggregated way.

1.1. Breaking the communication pattern

Need for speaking up

SM users follow some activity patterns. The need for speaking up, supporting the cause and joining the community makes users, that according to their patterns are not supposed to post anything during a given period of time since the last interaction, take action.

To analyse it we suggest working with two indicators: the average time between SM interactions and the timestamp of the latest interaction.

Change in posting style

SM users usually exhibit their own posting style, for example, using abbreviations, writing very long or very short posts, referencing a lot to other users or hardly ever, richly using hashtags or by the absence of those, etc.

1.2. The emergence of flagging hashtags

Creation of event specific hashtags

The communication of the event needs virality, which requires standardization in the flagging of posts. It motivates the creation of hashtags related to the event. At the beginning, several candidate hashtags circulate... following specific patterns, such as 'eventname' with certain variations including misspellings, etc... unity messages such as 'ensemble', name of the human rights that have been attacked, such as *#freedom* or *#freedomofexpression*. etc

The emerge of these hashtags translate into a set of flags for those tweets that are meant to refer to the event

Consolidation of event specific hashtags

As time passes by, the community of SM users engage with certain tags more. Consequently, these tags gain more visibility and spread, separating the ones that are the "most representative" event hashtags from the other candidates. This engagement based selection process works at a global scale and for the different localities.

1.3. Searching for own identity in the global context

Adoption of foreign hashtags

When such a tragic event occurs, it's not about differences... Rather, SM users seek for unity and sense of community. Users that usually don't post in any other language but theirs, adopt foreign languages hashtags related to the event in their communication. Typically the scope of the foreign languages usage stays at tag

level, being the resting part of the message in the users' usual posting language (e.g.: "we are supporting you France! #liberté #solidarité" more typical than having the whole written in French)

Mirroring of hashtags in their own language

Hashtags are mirrored by users in their own language to foster the spread in country specific communities and to add a touch of local identity to the global trend (e.g.: the originating one might be '#freedomofexpression' and get mirrored into German as '#pressefreiheit'). Sometimes, the mirroring process triggers the adaptation to more sounded local forms of global hashtags, especially if they can relate to existing tags that have traditionally been full of meaning in the local geography.

Searching for community identities

People want to add an identity to the supporting message. The statement "I support you" is obvious by the author of the post, but it's too granular in terms of identity. "We support you" is more powerful, as "we" is bigger than "I"... Thus, SM users tend to use the most identity-rich "We" they can find, which usually is the name of the city they live in (e.g.: "#rome", "#munich", "#rennes")

1.4. Answers seeking

The need to apply the global context to the local issues

A tragic event often makes people take things very seriously –it could have happened to me--. As a consequence, a debate is usually initiated, especially if the circumstances under which the event took place are close to the local ones (e.g.: climate of religious segregation, radicalization, challenging integration of minorities, etc). It manifests in several local references in the SM interactions flagged with the event's hashtags.

Addressing the root cause or the high-level pattern

In the shock-state, people take a moment to understand how such a terrible event could have ever happened. Fundamental questions rise and the need for addressing these questions manifests in the SM dialogue (e.g.: '#islamophobie' or '#integration' might pop up after a terrorist attack).

The rise of the opposite voices

Where we find a lot of people condemning the incident, other groups of SM users might speak in favour of what motivated such a horrifying incident to take place. Even after a while, condemning behaviours might crystalize into violent actions against those who were supposedly behind the incident, which usually leads to radicalization in the media dialogue.

Our case study: Charlie Hebdo's shooting

To properly assess the aforementioned behavioural changes we have carefully analysed the SM reaction triggered by the Shooting in the Charlie Hebdo headquarters, that took place on January 7th in Paris³. In total 12 people were killed in this terrible incident. Gunmen attacked the offices of French magazine Charlie Hebdo in Paris, killing 12 people including the editor and celebrated cartoonists. After that, three suspects were hunted. It has been the deadliest terror attack in France since 1961 during the Algerian war. According to President Hollande, it was an act of "extreme barbarity", with many foreign leaders also condemning the attack.

The day after the incidents in the Charlie Hebdo took place, we set up a Twitter monitor using the Search API⁴ based on the hashtag *#jesuischarlie* for 5 different languages: German, Spanish, English, Italian and of course French. We let the monitor run for a couple of hours until we had a minimum of 10K tweets per language related to the tragic. Our analysis based on the usage of hashtags in the SM messages that were collected in relation to the event for the different languages.

Finding out the driving hashtags

After the gathering of tweets, we proceed with the analysis of significant hashtags for each language. For that, we extracted the whole set of hashtags and sorted then by frequency of occurrences within each language data set. Intentionally, we didn't aggregate up misspellings, versions binding characters, etc, to respect the different intentionality and meaning richness the users wanted to convey.

ES	#	DE	#	EN	#	FR	#	IT	#
jesuischarlie	10K	jesuischarlie	10K	jesuischarlie	9630	jesuischarlie	10014	jesuischarlie	9558
charliehebdo	2468	charliehebdo	3913	charliehebdo	2611	charliehebdo	2056	charliehebdo	2793
respect	189	charliehebdo	381	iamcharlie	257	noussommescharlie	291	francia	325
yosoycharlie	167	paris	131	jesuisahmed	206	thankstheworldfromfrance	206	notinmyname	147
libertaddeexpresion	113	pegida	101	raiseyourpencilforfreedom	188	ensemble	145	parigi	144
francia	84	weiter	77	paris	146	chaliehebdo	86	noussommescharlie	86
franceattack	83	charliehebdo	72	iran	127	minutedesilence	84	roma	85
yoconfacu	81	nopegida	72	respectformuslims	123	sharethelove	69	jesuisahmed	70
prayersforparis	66	reims	69	eiffeltower	122	eiffeltower	67	chaliehebdo	68

For each language, we selected the top 200 hashtags, data set that proved significant to reflect each and every behavioural item described in the previous section. In Table 1 we can see the top 10 hashtags per language. Figure 3 provides a tag cloud of the top 70 hashtags per language, to allow for further exploration.

Emergence of flagging hashtags

In our analysis, we created a category called “slogan” to group all event flags per language. Having a look at the top slogan-like hashtag, we identify the leading ones that are heading the ranking in all languages (*#jesuischarlie* and *#charliehebdo*). Surprisingly, we observe for each language, hashtags in a foreign language very high in the ranking (mainly in English –the most universal language, to get the maximum spread- or in French –the language from the incident place, so show solidarity to those suffering there-). For example in Italian, we see the third hashtag beign *#notinmyname* and almost in all 5 languages, the French *#noussommescharlie* also in the highest positions.

IT	#	FR	#	ES	#	EN	#	DE	#
jesuischarlie	9558	jesuischarlie	10014	jesuischarlie	10011	jesuischarlie	9630	jesuischarlie	10008
charliehebdo	2793	charliehebdo	2056	charliehebdo	2468	charliehebdo	2611	charliehebdo	3913
notinmyname	147	noussommescharlie	291	prayersforparis	66	iamcharlie	257	charliehebdo	381
noussommescharlie	86	chaliehebdo	86	chaliehebdo	41	jesuisahmed	206	charliehebdo	72
chaliehebdo	68	charlie	61	dibujo	40	noussommescharlie	88	chaliehebdo	55
charlieebdo	43	noussommestouscharlie	52	noussommescharli	33	charliehebdo	60	charlie_hebdo	27
iosonocharlie	33	jesuispolicier	47	iamcharliehebdo	25	chaliehebdo	23	noussommeschar	24
prayersforparis	30	cabu	21	jesuisahmed	20	charlie	8	charb	15
nonabbiamopaura	25	chariehebdo	13	jesuisfacu	16	chariehebdo	7	charliehebdo	15
charlie_hebdo	22	parisestcharlie	12	iamcharlie	15	charliehebdu	7	hebdo	10
hebdocharlie	18	noussommestousdescharli	9	charlie	13	yosoycharlie	7	iamcharlie	9
chariehebdo	17	soutiencharliehebdo	8	parishooting	10	charb	6	noussommestous	9
charliehebdo	17	charb	7	charliehebdo	8	charlieshebdo	6	wirsindcharlie	6

Figure 1: Frequency chart of the top event flagging hashtags

Searching for own identity in the global context

Apart from the official #jesuischarlie hashtags to identify the event in the SM, we can also appreciate in the Figure 1 the presence of “translated” hashtags, such as “#iosonocharlie”, “#iamcharlie”, etc. Apart from that, we also observe the emergence of hashtags created in local languages mirroring the “official” tags.

As the usage of hashtags in different languages strongly manifests when such events awakens the solidarity of the whole SM community, we created an interactive application to explore how a hashtag is employed in different languages. Figure 6 shows a snapshot of this application, which is hosted under following URL: <http://bigdata-doctor.com/labs/jesuischarlie.html>

On the other hand, the adoption of cities or places to express solidarity from, and as an indicator of community, can also be massively observed (see Figure 2). Apart from in-country cities, in all languages there’s a special mention for Paris. It’s noticeable how in France, the presence of city names is much higher than in any other languages, possibly because the perception of locality is stronger in the place where the incidents take place. In Figure 4 in the chart corresponding to *foreign language* we see how often users adopt a foreign language tag in favour of the globality. In the same Figure, but in the chart *slogan local*, we observe per language the frequency in which per language the slogan is translated into the own language.

ES	DE	EN	FR (I)	FR (II)	IT
sevilla	paris	paris	strasbourg	chartres	parigi
aragón	reims	moscow	nantes	lemans	roma
madrid	berlin	newyork	rennes	québec	torino
bonn	dresden	rotterdam	paris	metz	firenze
paris	frankfurt	london	caen	nancy	uderzo
	köln	utrecht	lyon	poitiers	bologna
	münchen	birmingham	toulouse	montreal	genova
		sheffield	dijon	amiens	bari
		sydney	périgueux	brest	milano
		amsterdam	picardie	limoges	palermo
		belfast	grenoble	athenes	parma
		cyprus	marseille	bretagne	fiorenza
		istanbul	reims		udine
		portsmouth	bordeaux		

Figure 2: Top cities per language



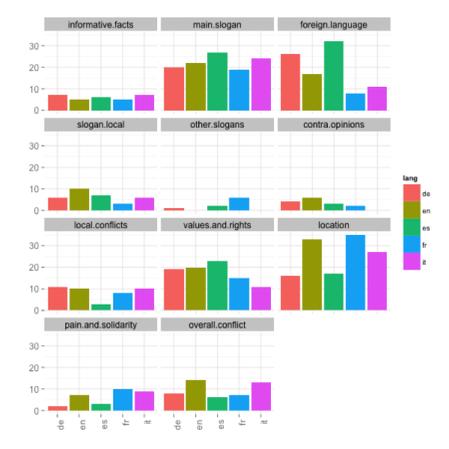


Figure 4: Hashtags category analysis in frequency groups by language

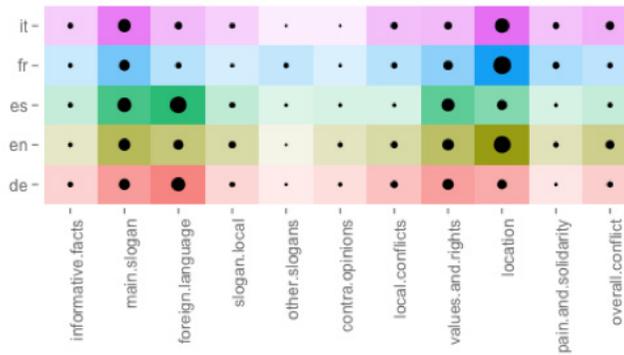


Figure 5: Hashtags categories frequency per language



Figure 6: Hashtags co-occurrence explorer

Concluding remarks

In this paper, we have diagnosed the changes in the SM users' behaviour when a high-impact heart-breaking event –terrorist attack, natural disaster, etc- occurs.

In our analysis we demonstrate how usual communication patterns break because of the need for speaking up and how the posting style also might be impacted. In addition to that, we analysed the emergence of event-related hashtags starting with a chaotic phase with a lot of versions and misspellings to then consolidate into a short list of official ones.

We also discussed how users tend to search for their own identity yet adhering to the global movement, in a global context (e.g.: adopting foreign hashtags while highlighting the local community differentiators).

Lastly, we pointed out to the manifestations of the seek for answers after such a touching event, for example trying to understand the drivers, questioning the root causes and sometimes even making the groups in favour of the reasons that motivated the incident rise.

To discuss our findings, we analyse the Twitter feed created around the *Charlie Hebdo* shootings that took place in Paris in January 2015 for 5 different European countries/languages, where we demonstrated how each and every point mentioned in our diagnosis manifested.

As future research lines, we suggest analysing the impact of the event from the trending topics perspective in different places, to contrast our findings.

Notes

- [1] https://en.wikipedia.org/wiki/Charlie_Hebdo_shooting
- [2] <https://support.twitter.com/articles/49309-using-hashtags-on-twitter>
- [3] <http://www.bbc.com/news/world-europe-30708237>
- [4] <https://dev.twitter.com/docs/api/1/get/search>
- [5] <https://en.wikipedia.org/wiki/Pegida>

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