Using Twitter to Mobilise Protest Action: Transnational Online Mobilisation Patterns and Action Repertoires in the Occupy Wall Street, Indignados and Aganaktismenoi movements[1]

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Abstract

The extensive use of Social Network Sites (SNS) for protests purposes was a distinctive feature of the protest events in Spain, Greece and the US. Like the Occupy protesters, the Indignant activists of Spain and Greece protested different manifestations of unjust, unequal and corrupted political and economic institutions marked by the arrogance of those in power. But how did the networking capacities offered by the internet were utilised to diffuse cross-national solidarity and allow high-threshold, old-fashioned social movement tactics, such as occupations, to become a tactic that surpassed borders? A closer comparison of the content of the information exchange in SNS reveals not just similarities but also differences among the three movements, some clearly emerging due to the different national contexts. How common were the demands, practices, goals or political actions promoted by the three movements? We tackle these questions studying the communication patterns of people who tweeted about the movements. This paper presents the findings of a comparative content analysis that focuses on how Twitter was used by Spanish, Greek, and American citizens for exchanging information, organising protest events, mobilising participants and creating new, or supporting old, repertoires of engagement. Contrary to much of the recent theorising about the potential of social media, the results of our study indicate that although Twitter is used significantly for protest information diffusion, calls for participation are not predominant, while only a very small minority of tweets refer to protest organisation and coordination issues.

Introduction

In the last two years a continuous tide of popular uprisings and protests shook the Middle East and prompted pro-democratic mobilisations that led to emergent and often violent response from the governments of, among others, Bahrain, Saudi Arabia and Syria, and forced from power the autocratic rulers of Tunisia, Yemen, Libya and Egypt. Although these mobilisations, commonly referred to as the 'Arab Spring', monopolised much of media's attention and fostered animated debates about democratisation, citizens of Middle Eastern countries were not the only ones who stood up against their governments. Inspired by the Arab Spring mobilisations, citizens of many Western democracies organised and held a series of month-long protests, while protest action with pro-democratic aims erupted also in Russia and Turkey. The Spanish and Greek indignant citizens (called *indignados* and *aganaktismenoi* respectively), the Portuguese *Geração à Rasca* (desperate generation) and the *Occupy* movements in the US and the UK, were only some of the movements that acted as an inspiration for the organisation of demonstrations that took place in more than 80 countries between May and October 2011, demanding radical changes in national and global politics and the way justice systems work (Gabbatt, Townsend, & O'Carroll, 2011; Mason, 2012).

A common underlying pattern in these mobilisations was the use of digital media for the purposes of communication, organisation and coordination of protest activities among national and international decentralised individuals, groups and associations. The positive organisational outcome of using social media for protest purposes is allegedly so powerful, that both authoritarian regimes and democratic governments imposed, or contemplated imposing, extreme barriers in the use of internet (Glanz & Markoff, 2011). Democracy and media scholars have increasingly emphasised the role of information technologies for social change; on the one hand for facilitating democratisation and promoting transition in young and developing democracies, and on the other for consolidating and stabilising commitment, and strengthening participation in already established democracies (Barber, 1984; Dalton, 2008; Lynch, 2011; Mattes & Bratton, 2007; Shirky, 2010). At the same time, social movement scholarship has been increasingly interested in how digital media contribute to protest events and has argued that the internet can help activists diversify their engagement repertoires, move beyond previous spatial and temporal confines and organise and coordinate participation in protest events more effectively (van Aelst & Walgrave, 2004; Bennett, 2004; Castells & Rovira, 2011; Castells, 2012; van de Donk, Loader, Nixon, & Rucht, 2004)

The present article addresses the mobilization effects of social media use by exploring protest-related content communicated through Twitter during political mobilisations in Spain, Greece and the US. We document *how* exactly Twitter was used in the protests. Specifically, following the main focus of the internet and politics literature on new media's capacity for political engagement, protest organisation, and communication, the study is concerned with the extent to which content exchanged between Twitter users (Twitterers) during two weeks of mobilisations, constituted the basis for (a) calling for political participation, (b) political organisation and logistical coordination of offline protest action and (c) exchange of political information and discussion.

The comparative approach provides a cross-national and cross-cultural dimension for discerning common patterns and communication practices in mobilisations in different national contexts. Anecdotal evidence show the Spanish *indignados* engaging into door knocking, canvassing and organising local initiatives, while smaller groups were known to cover everything from stopping banks repossessing homes to setting up co-operatives – even long after the demonstrations (Tremlett, 2012). The Greek *aganaktismenoi* invited everyone to open debates and argued that they aimed towards direct democracy endeavours in an Ancient agora fashion in the

capital's central square. Activists participating in the *Occupy Wall Street* mobilisations employed mainly demonstrations and occupations of central squares and buildings of symbolic importance and engaged into political lobbying. Do tweeted messages reflect these different protest tactics? And do we observe different goals and issues?

Social movements, digital media and political mobilisation

Digital media appear to have a growing impact on political communication and political actions. As more research accumulates three major changes are attributed to the use of the internet: (1) changing repertoires of participation and mobilisation, (2) changes in political organisation and coordinating, and (3) changes in communication and the spread of information. For each of these areas, we start with a brief overview of the literature and conclude with specific research questions.

Political Participation: Changes in repertoires of participation and mobilisation

The point of departure for much theoretical and empirical work has been the different ways the internet has affected participation in protests events and the ways social movements and activist groups have tried to use it to strengthen and diversify their political action repertoires and organise protest (van Aelst & Walgrave, 2004; Bennett & Segerberg, 2012; Vegh, 2003). The internet has transformed political action and long-established mechanisms of social movement organisation, communication and mobilisation in various ways: Reduction of communication costs has allowed faster and easier distribution of movement information and has enabled individuals to stay in touch with more people, communities and diverse causes. It has facilitated the development of 'weak ties' allowing activists to extend and better manage their social networks and affiliate with distant groups (Bennett et al., 2008). This has allowed for more effective recruitment of participants for collective causes and the promotion of collective identity across communities with similar grievances, often leading to successful transnational protest activity (Arquilla & Ronfeldt, 2011; Bennett, 2004). In short, the internet 'has permitted people in general and activists in particular to maintain multiple contacts and to hold various engagements for different causes at the same time' (Walgrave, Bennett, van Laer, & Breunig, 2011, p.10).

The internet has radically transformed two elements of traditional protest mobilisation: participation costs and the need for co-presence. This is reflected by the online dimension to existing participation repertoires such as petition signing or letter-writing, and the addition of entirely new repertoires such as culture jamming and hacktivism.[1] Earl and Kimport (2011) have argued that the leverage of different online strategies depend on the ways groups design their internet-facilitated strategies (Earl & Kimport, 2011, p.92). In his work on digital network repertoires, Chadwick (2007, 2011) has argued that the convergence between local and global, offline and online, has resulted in a new type of networked repertoire whose amorphousness, fragmentation (or, to use a more mechanical term, *granularity*) and loose association with formal institutional structures might be their major strength. Shifting the balance of participation costs downwards has resulted in a new model of flash mobilisation in which collective action is *so* inexpensive that small time and content investments by participants allow many more individuals to participate quickly, leading to surplus of of (mainly online but also potentially offline) participation and a greater number of collective mobilisations than was previously possible (Bennett & Fielding,

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[1]van Laer and van Aelst (2010) introduced a typology that distinguishes political action repertoires into 'real' actions, which are supported and facilitated by the internet, and 'virtual' ones that are exclusively internet-based.

1999; Bimber, Flanagin, & Stohl, 2009; Earl & Kimport, 2011; Shirky, 2008).[2]

To investigate the internet's contribution to the diversification of political acts, we searched tweeted content for mentions of acts of political participation. Twitter allows us to see what people actually thought and said about certain issues. Most importantly, it can capture modes of participation equivalent to those analysed in classic political science literature such as trying to persuade someone to participate in a certain action (Verba & Nie, 1972), signing a petition, or attending a political meeting or rally (Barnes et al., 1979). We attempted to detect tweets with content that would be classified as one such form of participation online by categorising content that includes an *explicit encouragement to engage with some sort of political action*. These data can be used to answer the first set of research questions:

RQ1a To what extent was Twitter used to call for participation in protest events? Were there any differences between the three countries?

RQ1b Did organisations, bloggers or regular citizens make heavier use of Twitter for political participation?

Political organisation: Changes in political organisation and coordination

Changes in organisation dynamics have prompted extensive debate about the internet's impact on participation and coordination. These fundamental requirements for successful collective action have traditionally been managed through mechanisms of formal and hierarchical institutional leadership (Bennett & Segerberg, 2012; Bimber et al., 2009; Lupia & Sin, 2003). This debate uses Mancur Olson's 'free-rider problem' and the classic social movement Resource Mobilisation Theory (RMT) (McCarthy & Zald, 1977) as a point of departure. From these perspectives organisations are seen as a remedy for free-riding and as a way to facilitate collection and strategic deployment of resources which to attract participants for collective actions (McCarthy & Zald, 1977).

The internet allegedly alters this dynamic and challenging the logic of collective action for three interrelated reasons. First, the cost of participation in political action has been radically reduced. Second, the structure of traditional organisations have changed from strictly hierarchical institutional forms to more flexible, horizontal or hybrid types (Chadwick, 2007; Shirky, 2008). Finally, these processes facilitated by the ease of individual or collective content production, its decentralised nature, and the ease of sharing through social media (Benkler, 2006; Chadwick, 2011; Shirky, 2008). These platforms make it easier to contribute collective (informational) goods, despite their sporadic and ephemeral nature, and allow a much larger percentage of ideologically sympathetic individuals to participate (Earl & Kimport, 2011, p.73).

These developments have raised questions about the actual commitment and use of such actions by armies of 'clicktivists' or 'slactivists', whose low-cost action has been considered much less effective for achieving social change when compared to the physical engagement in demonstrations and other high-cost activism that predominated in the 1960s and 1970s (Gladwell, 2010; Morozov, 2009). Protest mobilisation in the past has relied on the development of collective identity and the 'collective effervescence' that sparks when people come together for a cause (Blumer, 1986). Yet scholars have argued that the new type of 'connective action', with digital media as organising agents at its core, may lead to effective action 'without the requirement of collective identity framing or the levels of organisational resources required to respond

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[2]The capacity of articulating specific, nuanced demands in the negotiation process which follows success through internet platforms has been questioned (Lynch, 2011); some have even gone as far as to suggest that 'social media politics' are even incompatible with representative democracy (Milner, in press).

effectively to opportunities' (Bennett & Segerberg, 2012, p.12). The premise that all individuals are trying to do through organisation is overcome free riding and shape identities in common, might be an outdated way of thinking about the organisation of collective action. 'Efforts to push these kinds of organisation into recognisable social movement categories', Bennett and Segerberg argue, 'diminish our capacity to understand one of the most interesting developments of our times: how fragmented, individualised populations that are hard to reach and even harder to induce to share personally transforming collective identities somehow find ways to mobilise protest networks from Wall Street to Madrid to Cairo'.

The changing nature of political organisation and the turn towards more flexible and well-coordinated protest actions is a major object of our study. We searched Twitter content for posts *explicitly promoting and facilitating of coordination*, to understand what could promote logistical organisation and coordination of protest activity, for example information related to protest strategies, explicit requests for resources and instructions. We formulate these interests in a second set of research questions:

RQ2a To what extent was Twitter used for logistical coordination of political action? Were there any differences in the three countries?

RQ2b Did formal organisations or regular citizens make heavier use of Twitter for organisation?

Political conversation and distribution of information: Networked individuals and the role of social media

People use social networking sites (SNS) as a way of keeping in touch with existing groups of friends and relatives and to get to know individuals they meet offline better. SNS use increases bonding and bridging social capital has a small but positive effects on civic engagement and participation (Boyd & N. Ellison, 2007; N. Ellison, Steinfield, & Lampe, 2007; N. B. Ellison, Steinfield, & Lampe, 2011; Valenzuela, Park, & Kee, 2009; Utz, 2009). Although these studies allow for some optimism regarding SNS's political potential, not all research has reported positive effects (c.f. Dimitrova, Shehata, Strömbäck, & Nord, 2011; Zhang, Johnson, Seltzer, & Bichard, 2010; Gil de Zuniga, Puig-i-Abril, & Rojas, 2009).

Yet, social media may contribute more to other forms of engagement with politics. The 2008 US presidential campaign made extensive use of SNS (Smith & Rainie, 2008). Almost every major party candidates used social media (Hayes, 2008). Turning to more general political conversation Yardi and Boyd (2010) find both homophily and heterogeneity in pro-life and pro-choice conversations about abortions; discussion between like-minded individuals strengthened group identity whereas replies between different-minded individuals reinforced in-group and out-group affiliation.

Social media, especially Facebook and Twitter, were used extensively during mobilisations against autocratic regimes in Tunisia and Egypt and Iran (Lotan et al., 2011; Papacharissi & de Fatima Oliveira, 2011; Tufekci & Wilson, 2012), but also in large protests in Europe (Mercea, 2012; Maireder & Schwarzenegger, 2012; Theocharis, 2012), and in North and South America (Bennett & Segerberg, 2012; Valenzuela, Arriagada, & Scherman, 2012). Papacharissi and de Fatima Oliveira (2011, p.14) found that the Twitter stream in Egypt 2011 combined ordinary news, opinion from journalists, interested parties and individuals, and emotion, blurring the boundaries between all three and thus shifting the balance of power in news production. Finally, DeLuca, Lawson, and Sun (2012) have documented how social media became a significant platform for expression and communication for the *Occupy Wall Street* movement.

From this work we can conclude that the use of Twitter by journalists, news organisations, and individual users creates a complex, networked system of social awareness which can popularise protest causes. At the same time, it allows decentralised groups with common aims to connect, exchange informational collective goods in a horizontal and efficient way, and organise and coordinate protest action more effectively. Empirical evidence from specific case studies that show how the online narrative communicated through Twitter contributes to this process is scarce.[3] If anything, therefore, existing evidence should raise suspicions about how online microblogging platforms functioning under a model of asymmetric followers (such as Twitter).

Movements' use of social media led us to explore whether political statements, conversation among twitterers about the issues each movement was fighting for, and distribution of links leading to positive and negative contributions about the protest events to mainstream and alternative media would be extensively communicated through Twitter. However, we also expected different issues to matter in each country. Inequality, for example, was a much more dominant demand for *Occupy Wall Street* protesters than it was for the Greeks who were mainly concerned with corruption. We formulated these issues as a third set of research questions:

RQ3a To what extent was Twitter used for political conversation and information distribution? Were there differences in the three countries and in the issues communicated?

RQ3b Did bloggers and formal organisations make heavier use of Twitter for information distribution and political discussion than regular citizens?

Finally, aiming to better understand the main purpose of using Twitter in political action we asked:

RQ4 Was Twitter used most extensively for spreading calls for political participation, logistical organisation and coordination, or political conversation and information distribution?

Data collection and coding

To answer our seven research question presented in the previous section tweets were collected for two weeks during the heydays of protest in Spain, Greece and the USA. In the first two countries, all tweets sent between 5 and 19 June 2011, and therefore during the peak of the *indignados* and *aganaktismenoi* protest activities, were collected. We captured the content of tweets along with the hashtags, usernames, dates, time-stamps and other miscellaneous platform information e.g., android device, iPhone, Tweetdeck, etc. Although we traced various hashtags that seemed to be prominent during the mobilisations (#acampadasol, #indignados, #spanishrevolution, #aganaktismenoi), we focused on the #15m hashtag for the Spanish and on the #greekrevolution hashtag for the Greek case as they were the most consistently and widely used across time. We also examined Tweets sent between 2 and 16 October 2011 focusing on the hashtag #OccupyWallStreet which was clearly the most prominent tag used during the period of the *Occupy Wall Street* mobilisations.

For the analysis presented here a sample of 2000 tweets was drawn from each of the #15m, #greekrevolution and #OccupyWallStreet datasets. Using 60 tweets from the Greek and Spanish databases (30 for each case), we then attempting induce distinct categories that linked the tweeted content to our general topics of interest: political action and use of digital media. We

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[3]Interestingly, in their study of Twitter, Yardi and Boyd (2010) found that although people were exposed to broad viewpoints, they were nevertheless limited in their ability to engage in meaningful discussion.

repeated this procedure three times, examining in total 90 tweets for each database. This led to the construction of five categories whose central focus was to identify the political attributes inscribed in the tweets. The categories were: purpose of tweet, topic of tweet, political issues mentioned (if any), political actions mentioned, and evaluation of the movement.[4]

Given the plethora of opinion articles written about the movements, the rich discourse that followed the events' media coverage, the significant media attention they attracted, and the constant stream of information produced on Twitter in cases of such intense social and political developments we wanted to know more about the content of messages, which types (if any) of discourse were communicated through them, and which hyperlinks were most predominant. To reach these goals, we created six further categories related to the content of tweets: where does the link lead to; if it is news media, is it mainstream or alternative; who sends the tweet; is it a retweet; in what language is the tweet written; is it directed to a specific user. A clear elaboration of the subcategories can be found in the codebook, which is available on request.

The three tweet collections were managed and coded in software specifically developed for the project[5]. We recruited Spanish-, Greek- and English-speaking student assistants to assign categories to each tweet. The coding process underwent the standard procedures of coders training and inter-coder reliability checks.[6]

Results

Twitterer statistics

Before stepping into the analyses we examine what types of twitterers can be discerned in the three countries. A first exploration led to seven user categories (citizen-blogger, individual-citizen, individual- journalist, news agency, organisational group of the movement, other organisation, and politician) and two categories that were inaccessible (account doesn't exist anymore, protected account). The distributions of these types are shown in Table 1.

Individual citizens appear to be by far the largest type of twitterers in each country: in Spain and the US about 75 percent of all tweets come from ordinary citizens, while in Greece the same volume is spread between citizen-bloggers, journalists, and news agencies. News agencies tweet in Greece, but hardly in the other countries. Aiming to simplify the analysis we constructed three major categories: organisations, commentators and ordinary citizens (see Table 2). As can be seen, Greece had significantly more commentators than any other country which is consistent with the intense growth and activity of the Greek political blogosphere (Tsaliki, 2010).

Given the existence of different organisations and considering that our commentators category consists of bloggers and journalists, and thus politically interested people who invest more time online than ordinary internet users and use personal blogs or websites on top of their

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[4]Similar methodologies have been followed by Thorson et al. (in press) and Segerberg and Bennett (2011).

[5]This is available from the authors upon request.

[6]Given that the dataset contains information in three languages the first training and reliability checks were carried out by comparing tweets coded by the coders and the authors using English content from the OccupyWallStreet dataset. The first stage involved coders training according to the codebook prepared by the authors and discussion of the categories. The second stage involved the individual coding of 30 tweets and common discussion of the categories selected by all the coders. This whole process was repeated again reaching an average agreement rate of more than 80% in all the categories. Once this stage was completed, the same procedure and reliability tests were performed between pairs (one author and one coder) for the Spanish and Greek datasets. In both cases, the percentage of agreement also reached at least 80% for all categories. Following Früh (2007) we consider the simplest test of reliability to be sufficient to for our analysis. Detailed information on the process and reliability tests is available from the authors.

Table 1: Types of Twitterers (sendertype variable) in each country in the sample. Columns sum to 100, rounded to whole percentage points. Samples contain 1999, 2000 and 1999 tweets respectively.

	ESP	GRE	USA
account doesn't exist anymore	11	11	9
citizen-blogger	1	19	1
individual citizen	75	50	82
individual journalist	3	8	1
news agency	1	7	0
organisational group of the movement	3	3	2
other organisation	4	1	5
politician	0	0	0
protected account	1	0	1

Table 2: Aggregation rule for turning old sendertype into new author.

author	sendertype
citizen	individual citizen
commentator	citizen blogger
	individual journalist
organization	organizational group of the movement
	other organization
news agency	news agency
ignore	account doesn't exist anymore
	protected account
	politician

Table 3: Author types in each country. Columns sum to 100, rounded to whole percentage points. Samples contain 1999, 2000 and 1999 tweets respectively.

	ESP	GRE	USA	Total
citizen	86	56	90	78
commentator	5	31	2	13
organisation	7	5	7	6
news agency	1	8	0	3

Table 4: Different authors' evaluation of the movement. Rows sum to 100, rounded to whole percentage points. N indicates number of tweets in each row.

evaluation		negative	neutral	positive	unclear	N
country	author					
ESP	commentator	5	34	52	9	93
	citizen	6	19	65	11	1500
	news agency	0	71	29	0	24
	organisation	3	18	68	11	128
GRE	commentator	3	41	46	11	548
	citizen	3	59	33	6	999
	news agency	0	68	30	2	142
	organisation	0	32	65	3	88
USA	commentator	13	32	42	13	38
	citizen	12	10	70	8	1637
	news agency	0	44	33	22	9
	organisation	7	8	74	11	127

Twitter accounts (see Hindman, 2009), we expected groups to be variably friendly towards the movements in their countries. As can be seen in Table 4, in Spain organisations are most positive towards the movement (68 percent), followed by citizens (65 percent) and then commentators (52 percent). News organisations are mostly neutral (70 percent), with 30 percent of coverage positive. In Greece, organisations are most positive (65 percent), commentators are split between positive (46 percent) and neutral (41 percent), and citizens are most neutral (59 percent) which is consistent with the public's scepticism about the composition, action and aims of *aganaktismenoi*. News agencies are mostly neutral (68 percent), the same balance as in Spain. In the US, organisations and citizens are most positive (74 and 70 percent respectively), commentators are mildly positive (42 percent), often neutral (32 percent) and more often negative than in the other countries (13 percent). This too is consistent with what has been reported by others. The US public was broadly sympathetic towards the aims of the protesters (Castells, 2012) yet public commentators seem to have been more sceptical about the protesters' methods and news media deliberately late in catching up with the movement's developments and often negative in their reporting (DeLuca et al., 2012).

Using Twitter to stimulate political participation

The first set of research questions is concerned with the extent to which Twitter was used by activists to call for political participation and thus potentially provide a stimulus on further engaging with the offline campaign. Studies have so far stressed the potential of social media for political mobilisation and particularly the reduction of costs and the diversification of political acts as consequences of online engagement. Notwithstanding these claims, we expected that all three movements used Twitter to promote a diverse repertory of low- and high- cost actions. We thus used two avenues for understanding the role of Twitter as a stimulus for political participation. The first and more direct way was to examine how many tweets were literally 'calling for action'. Table 5 shows the percentages for using Twitter for a diverse battery of purposes including 'call for action' across the three countries. As is clearly visible very few tweets (3-5

percent) are explicit calls for participation.

Because tables of this size are difficult to interpret Figure 1 shows a graphical representation of tweeting purposes by country using correspondence analysis. In this type of plot different purposes and different countries are represented as points in a coordinate system shown by the dotted lines. Purposes that are used equally by tweets in each country appear near in the centre whereas purposes that are relatively more prevalent in one country than another are further from the centre. Purposes plotted near to one another have a similar profile of usage across countries. Because countries are also plotted, purposes in the same direction from the centre as a country marker are more widely used in that country. Purpose markers are sized according to relative marginal frequency of each purpose. The representation takes into account the fact that some purposes are more common than others and presents only relative data. Greenacre (1993) provides further information on the construction and interpretation of correspondence analysis plots[7].

As can be seen, the purpose 'call for action' is almost at the centre of the triangle formed by the three countries, indicating that this purpose in about equally by tweets in each country.

The results in Table 5 and Figure 1 do not support theories that social media turn (even political) citizens into emitters of action calls during protest events. Even if we neglect the fact that 'calls for action' is one of the least used purposes for sending a tweet, the results show that even when such calls are communicated it is organisations rather than individuals – in all three countries – that send out these calls for action. Predictably, with the minor exception of Spain, when it comes to encouraging participation in demonstrations news agencies have no role to play.

A second avenue is based on a different operationalisation for examining the promotion of political actions by social media. Studying social media-powered political protests in Norway, Enjolras, Steen-Johnsen, and Wollebaek (2012) found that social media constitute an addition to conventional organisations as a mobilising structure. We were interested in better understanding how Twitter was used for mobilising engagement to political actions. We thus used a different operationalisation to examine whether each message included references to specific political action repertoires.[8] According to this approach, broadly understood, 'call for participation' is measured by mentions of particular protest actions in the variable action. Table 6 shows the tweets that include mention of some action (i.e. not 'none') by country and author. Coded in this way, we see that a considerable amount of tweets refer to some action – a rather trivial finding with respect to the fact that we collected our tweets during the heydays of political protest in each country.

A closer look at all the actions mentioned shows that street protests are by far the most frequently mentioned (data not shown). This category includes types of activities that cannot always be easily distinguished in some of the tweets: demonstrations, rallies, and occupations. Interestingly and rather consistently with the higher number of online commentators observed previously, mention of virtual actions is particularly high in Greece and higher than any other action except street protest in Spain. Other types of actions identified included participating in assemblies, voting (or calls for abstention), the organization of groups to prevent evictions (mainly in Spain), signing petitions, contacting politicians, or donating money. In comparative

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[7]Here we plot 'symmetric' or French-style plots for clarity. This means that the figures are not biplots and, while distances between purposes are meaningful, only angles (not distances) between country points and purposes should be interpreted.

[8]Granted that recent political science literature has argued about the expanding repertoire of citizens' participation (see e.g. Micheletti & McFarland, 2010), we also wanted to identify 'new' or 'creative' forms of action. To capture the entire repertoire of political actions, coders were trained to openly identify and, if needs be, add 'new' forms of participation they would come across.

Table 5: Purpose of sending a tweet. Columns within each country sum to 100, rounded to whole percentage points.

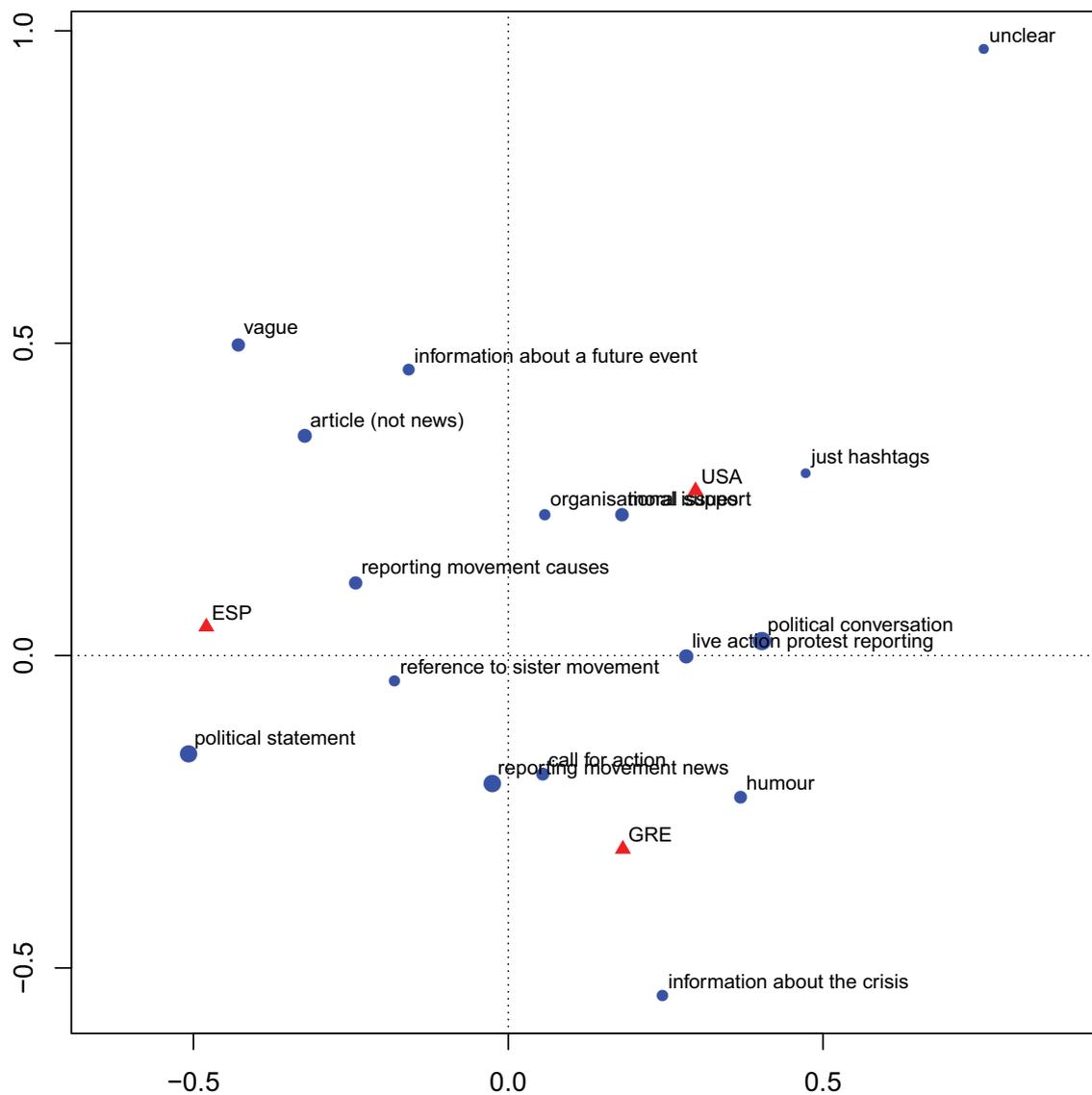| author		commentator	citizen	news agency	organisation
country	purpose				
ESP	vague	5	7	0	14
	article (not news)	15	10	8	9
	call for action	2	4	0	8
	humour	1	1	4	0
	unclear	0	0	0	0
	information about a future event	4	3	0	8
	information about the crisis	1	1	4	2
	live action protest reporting	6	4	12	4
	moral support	2	4	4	3
	just hashtags	0	0	0	0
	organisational issues	1	2	4	2
	political conversation	9	8	0	9
	political statement	22	30	0	15
	reference to sister movement	3	2	4	2
	reporting movement news	20	17	50	21
	reporting movement causes	8	6	8	4
GRE	vague	0	1	1	0
	article (not news)	3	2	3	3
	call for action	6	4	4	7
	humour	7	4	3	6
	unclear	0	0	1	0
	information about a future event	1	0	1	1
	information about the crisis	4	3	4	3
	live action protest reporting	8	6	23	5
	moral support	2	5	8	1
	just hashtags	0	0	0	3
	organisational issues	2	1	2	1
	political conversation	35	22	8	15
	political statement	1	29	15	2
	reference to sister movement	1	1	2	1
	reporting movement news	26	19	22	47
	reporting movement causes	4	2	5	5
USA	vague	3	5	11	8
	article (not news)	16	6	11	8
	call for action	0	3	0	5
	humour	0	4	11	1
	unclear	3	2	0	3
	information about a future event	5	3	0	5
	information about the crisis	0	1	0	2
	live action protest reporting	5	8	11	12
	moral support	3	7	0	9
	just hashtags	0	1	0	1
	organisational issues	0	2	0	0
	political conversation	26	32	0	17
	political statement	5	6	0	7
	reference to sister movement	5	1	0	2
	reporting movement news	24	13	44	11
	reporting movement causes	5	4	11	9

Figure 1: Correspondence analysis ('symmetric' scaling) of tweeting purposes by country. Blue points represent purposes and are sized proportional to the number of tweets. Red triangles indicate countries. Points closer together indicate purposes with a more similar profile across countries. Points in the same direction as a country, considered from the origin marked by the dotted lines, indicate purposes more likely to be used by Twitterers in that country. See Greenacre (1993) for more detail.

Table 6: Mention of political action or non-action by country and author. Rows sum to 100, rounded to whole percentage points.

country	author	call for action	other
ESP	commentator	2	98
	citizen	4	96
	news agency	0	100
	organisation	8	92
GRE	commentator	6	94
	citizen	4	96
	news agency	4	96
	organisation	7	93
USA	commentator	0	100
	citizen	3	97
	news agency	0	100
	organisation	5	95

perspective, as can be seen in Table 7, focusing on street protest versus other actions, it is evident that tweets about action are essentially tweets about street protest. However, Greek citizens were significantly more likely to tweet about street protests than other groups and other countries.

The results presented in this subsection allow us to answer our first two research questions. Calling for participation in the protest events was hardly explicitly mentioned in the tweets and this conclusion applies equally to each of the three countries. Obviously, the actions are mentioned frequently, but attempts to mobilise people are relatively scarce. Generally speaking, organisations and bloggers do not make more use of Twitter for political participation than regular citizens.

Using Twitter to organise and coordinate political action

Our second set of questions is concerned with the extent to which Twitter was used as a facilitator of organisation and logistical coordination of protest action. As can be observed in Table 5, the use of Twitter for organisation and coordination of protest activity, was surprisingly low – at least in comparison with other uses of Twitter. Table 8 presents the use of tweets for organisational matters by country and author.

Just 1.4 percent of the pooled sample used Twitter for organisational purposes. This was unanticipated given the extant literature's attention on how informational goods communicated through social media platforms could improve organisation and coordination of protest activity (Bimber et al., 2009; Shirky, 2010; Theocharis, 2012).[9] As it is highly unlikely that news agencies used Twitter for organisational purposes (although they might have used it to report the protesters' strategies), tweets relating Twitter use for logistical organisation with news agencies are analytically useless. Overall, these findings show that Twitter functioned much less as a

[9]It should be mentioned, however, that 10 percent in Greece and 7 percent in the US and Spain made used of Twitter for the purpose of live action protest reporting which, even if it doesn't involve internal movement logistical organisation, may perhaps be considered as having an organisational component due to the possibility that some activists get an impression of what is happening now and alter their actions accordingly.

Table 7: Mention of street protest by country and author. Rows sum to 100, rounded to whole percentage points.

country	author	other	street protest
ESP	commentator	58	42
	citizen	65	35
	news agency	46	54
	organisation	65	35
GRE	commentator	76	24
	citizen	51	49
	news agency	56	44
	organisation	80	20
USA	commentator	58	42
	citizen	58	42
	news agency	67	33
	organisation	56	44

Table 8: Use of Twitter for logistical organisation by country and author. Rows sum to 100, rounded to whole percentage points.

country	author	organisation	other
ESP	commentator	1	99
	citizen	2	98
	news agency	4	96
	organisation	2	98
GRE	commentator	2	98
	citizen	1	99
	news agency	2	98
	organisation	1	99
USA	commentator	0	100
	citizen	2	98
	news agency	0	100
	organisation	0	100

networking *agent,* that is, an organising mechanism within the protest, and more of a *window* into the protest space (although we shall not forget that Twitter was only one of the social media tools used in the mobilisations), revealing certain contextual features in which the protests were embedded (Segerberg & Bennett, 2011).

These findings allow us to answer our second set of questions. Based on our sample, Twitter was hardly used for logistical coordination of political actions in any of the three countries considered. The use of the Twitter by organisation, however, varies between the countries: especially US organisations (including organisations associated with or attached to the movement e.g. *Occupy Seattle, Occupy Boston* and so on) do not use social media for logistic purposes.

Using Twitter to distribute various types of information and engage in conversation

The influence of social media as one of the main channels of contemporary protesters for the diffusion of information about the protest events has been documented so extensively that it is almost beyond dispute (see e.g. Velasquez, 2012; Papacharissi & de Fatima Oliveira, 2011; Lotan et al., 2011). Our third set of questions is concerned with the extent to which Twitter was used to diffuse information and to support online discussion, and whether the type of information spread differed among the movements.

Two kinds of information transmission can be discerned: immediately relevant 'episodic' content, and general 'semantic' material. Information distribution can be measured narrowly by the 'information about a future event' value of the purpose variable (see Table 5). Another way is to look in more detail at live event reporting, since that is also information about events (current ones) as Table 9 shows. No great differences can be observed within countries and users but interestingly news agencies in Greece seem to be fonder of this kind of live event information spreading.

Table 9: Use of Twitter for live action protest reporting and informing about future events, by country and author. Rows sum to 100, rounded to whole percentage points.

country	author	information	other
ESP	commentator	11	89
	citizen	7	93
	news agency	12	88
	organisation	12	88
GRE	commentator	9	91
	citizen	6	94
	news agency	24	76
	organisation	6	94
USA	commentator	11	89
	citizen	11	89
	news agency	11	89
	organisation	17	83

Yet Twitter data offer more ways of observing the dissemination of protest information. We placed particular emphasis on the links included in the tweets which could help gather contextual information such as in cases where the title of a newspaper or an online news article

was mentioned without any further elaboration. Tweeted links were clicked and followed with the aim of figuring out what the tweet referred to. As noted by Segerberg and Bennett (2011) this information can be crucial for understanding the protest's wider composition and the specific protest theme that the information is embedded in. Indeed such links often revealed the organisations involved and diverse information channels allowing us to better comprehend the narrative (or part of it) behind an 'unrecognisable' tweet. Almost half of all the tweets in our sample included a link, therefore, most of the information is not necessarily included in the body of the message; the tweet is used as a carrier and separate distributor of richer information. Figure 2 summarises the results as a plot, with the specific type of link placed in the space defined by the three countries. According to the figure, links leading to videos, pictures and social media were common in all three countries which can perhaps be related to the intense reporting by amateur protesters-social media users and professional journalists regarding outbreaks of police violence and its intensive visual mediation, especially in Spain and the US (see Castells, 2012). However, while in Spain the larger percentage of links directed users to mainstream news media (for example newspapers or main TV stations) and maps (perhaps as an indication of areas where evictions were taking place), we found that in Greece the mainstream media were taken over by a clear preference for alternative news media. This chimes well with recent findings from the Eurobarometer (2011) which shows that Greek citizens are the most distrustful among Europeans when it comes to mainstream media, including TV, radio and to a lesser extent the internet. Links including online petitions were most frequently sent by *Occupy Wall Street* protesters. These findings suggest that although tweeting visual material remains a common reason for tweeting content across all movements, linking may also be used differently across mobilisations, even when these are under the same umbrella of grievances, indignation and demands.

The conversational aspect of tweeting also provided valuable information. As the three movements engaged in mobilisations for common but also for different reasons, political statements and topics of conversation usually referred to issues that were most predominant in each movement. 'Political conversation' was here measured narrowly by the 'political conversation' value of the purpose variable (see Table 6). Table 12 shows conversations and political statements as they were carried out by types of users.

If one looks only at citizens (data not shown here), Occupy Wall Street twitterers have been those who engaged in conversation the most, the Greek following and the Spanish least of all. However, measuring political conversation a bit more widely as the 'political conversation' or the 'political statement' values of the purpose variable, thus widening the idea of conversation, the Spanish – as Table 10 shows – look more lively. Conversations and political statements are a little more evenly distributed with Spanish and Americans citizens spending about 40 percent of their tweets on political conversation or statements and the Greeks about 50 percent.

Figure 3 summarises the topics included in political statements and political discussion in every country. The figure shows a relatively broad dispersion over the area with only the very general category 'protest acts and movement' near the centre. Apparently, government inefficiency and resentment of political elites are especially salient in Greece which clearly reflect the condition of public opinion at the time. Getting into what the conversations are actually about, according to Figure 3, in Spain political conversation was mostly (80 percent –percentages not shown in Figure) about protest action, with little coverage of other topics. Political statements had the same balance except for a portion (17 percent) of elite criticism. In Greece most (80 percent) political statements were about protest action or elite criticism (11 percent) while conversations also ranged over the crisis of capitalism (19 percent), government inefficiency (10 percent) – something other countries did not say much about – and elite resentment (25 percent). Finally, in the US both conversation and political statements were mostly about protest
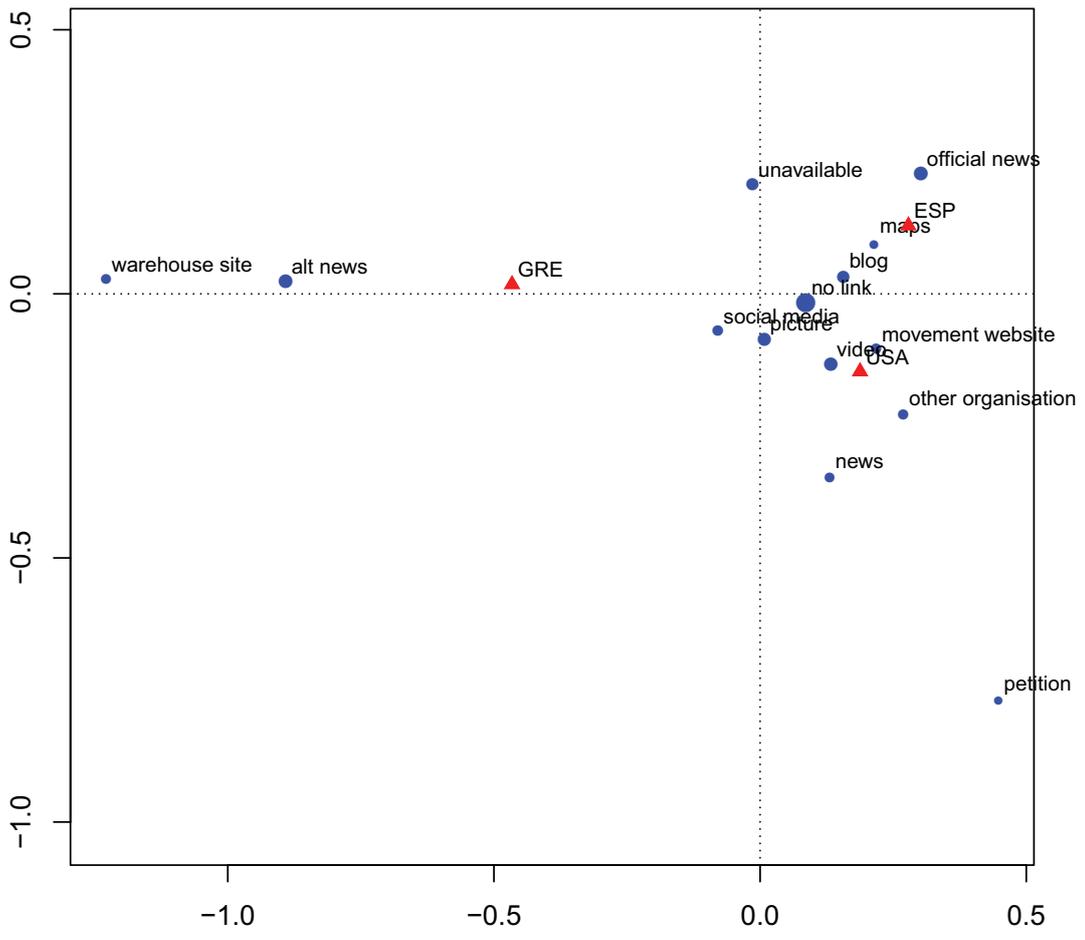
Figure 2: Correspondence analysis ('symmetric' scaling) of Tweeted links by country.

Table 10: Political conversations and statements by country and author. Rows sum to 100, rounded to whole percentage points.

country	author	conversation/statement	other
ESP	commentator	30	70
	citizen	38	62
	news agency	0	100
	organisation	23	77
GRE	commentator	36	64
	citizen	51	49
	news agency	23	77
	organisation	17	83
USA	commentator	32	68
	citizen	38	62
	news agency	0	100
	organisation	24	76

acts (70 percent and 65 percent respectively), but conversation covered more criticism of the media (12 percent) (which conforms to the broad perception of the protesters that the media misrepresented both them and their cause) and statements covered more elite resentment (8 per cent) and capitalism in crisis (15 percent).

Finally, turning to the issues mentioned by the twitterers as summarised in Figure 4, there is a high concentration of points near the centre, indicating that most issues are equally prevalent in each of the three countries. With regards to the issues mentioned in each country, In Greece, unsurprisingly given the nature of the protests, there was a considerable number of references to austerity measures and to lack of representation, an issue however prevalent in all three movements. Negative comments about the media and tweets about corruption were seen in all three cases while complains about police violence were most prevalent in Spain (for a contextual analysis, see Castells, 2012). Economic mismanagement was, naturally due to the anger about the financial crisis, most visible in the US along with educational and pension issues. A considerable percentage of tweets discussed or mentioned several political issues that were not identified due to the format of our coding scheme but were given entrance to our analysis through a separate 'notes' section where each coder could list. This is particularly the case in the Spanish movement where more than 16 percent of the tweets referred to other political issues not included in the list, such as immigrants' rights, mortgages and house evictions. Out of the issues identified in *Occupy Wall Street*, economic issues (including inequality and economic or government mismanagement) were the most predominant.

The information presented on the topics and issues mentioned in the tweets allow us to answer the third set of research questions on the use of the internet for political conversation and information distribution. With the obvious exception of news agencies, a substantial number of tweets is used for political communication in each country. Furthermore, the content of these tweets (topics and issues) differ between countries in very plausible ways. The last finding is especially notable: individual citizens appear to use Twitter for information distribution and political discussion more frequently than bloggers and formal organisations.
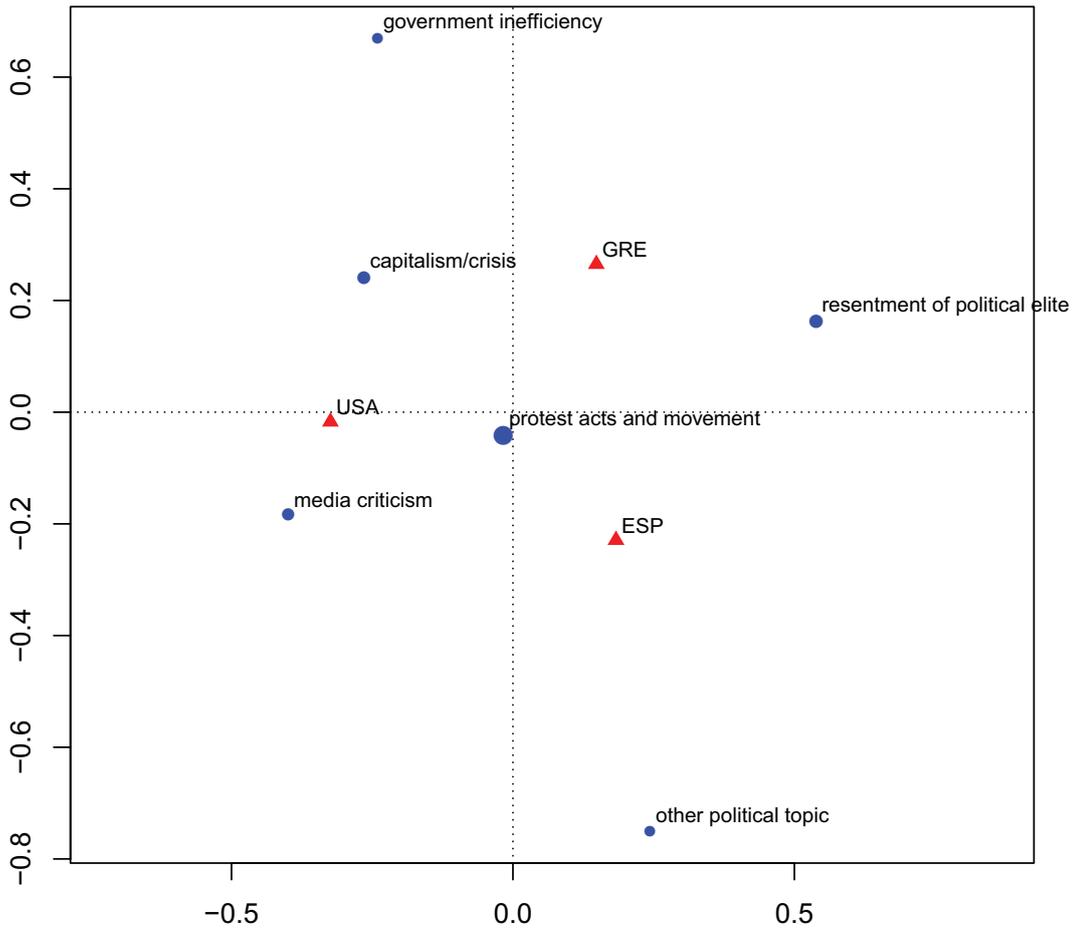
Figure 3: Correspondence analysis ('symmetric' scaling) of the topics of political statements and conversations by country.
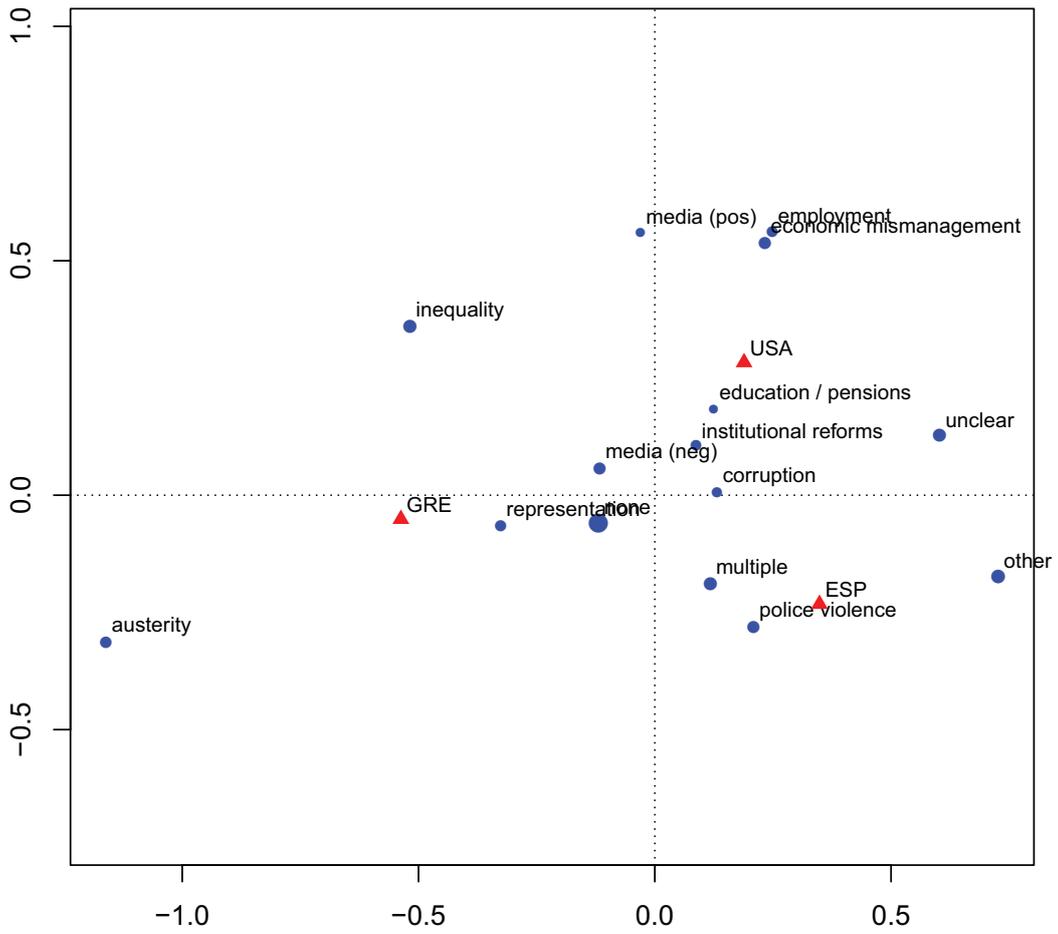
Figure 4: Correspondence analysis ('symmetric' scaling) of issues by country.

Discussion and conclusions

The arrival of social media has provided social movement and political behaviour researchers, an opportunity to explore long-standing questions and theories in a new light. With their capacity to bring people of an increasingly interconnected world even closer to each other, by allowing them to connect and exchange information rapidly and across national borders, social media are believed to be able to, slowly but steadily, revolutionise forms of engagement with public life, and challenge the ways social scientists have understood collective action. In a mix of enthusiasm, scepticism and hype, media commentators and gurus have generated ideas and spelled out utopian scenarios of mass participation and mobilisation in protest events, or low-risk, stay-at-home clicktivism. Social media are acknowledged as tools that could stir people's interests in political issues, by allowing sharing of information at an unprecedented scale, which could subsequently bring them to the political arena. People can use these media in times of unrest to create groups, invite unknown like-minded others, and contribute small bits of information (or of their online time) to help organise and coordinate political action more effectively. Some have even argued that collective action problems, a long-standing issue in participation research, would be reduced as organisational forms become horizontal and key information can be obtained at extremely low cost. The recent protest mobilisations, from the Arab Spring to *Occupy Wall Street*, have provided a fertile ground for examining the validity of these claims.

With a few notable exceptions (Valenzuela, Arriagada, & Scherman, 2012; Enjolras et al., 2012), scholars have focused on the formation, (re)routing and nature of tweeted information and, more explicitly, their role in creation of Twitter streams and informational cascades (Papacharissi & de Fatima Oliveira, 2011; Lotan et al., 2011). These studies are crucial in understanding how local protest information transcends international borders, creates an explosive mix of amateur and professional reporting, sensationalism, revolutionary optimism (or pessimism) and transnational solidarity. As a consequence, movements are empowered by obtaining unprecedented media attention and building international support. Yet this all reveals very little about how political protest on the streets benefits from these media. Aiming to fill this gap, this study provides a comparative examination of the diffusion of protest information through Twitter not only act as a transnational informational cascade, but also as a stimulus for participation and as an agent for protest organisation and mobilisation.

Has Twitter been used extensively for political participation, logistical organisation and coordination, or political conversation and information distribution? We studied this by assembling and exhaustively examining the tweeted content sent during the *indignados*, *aganaktismenoi* and *Occupy Wall Street* mobilisations in 2011. Starting with participation (questions RQ1a and b), our findings are mostly disappointing. A constant feature of Twitter use in all three countries is that a very small number of tweets refer to explicit calls for participation in protest action; references to a diverse repertoire of online and offline actions is not all that impressive given that tweets were captured under protest event hashtags. Moreover, even when calls for action were there, it was not protest-inspired, ordinary citizens or motivated online denizens who led these calls but rather movement organisations. Although social media have naturally helped popularising the cause and broaden the call for publics to engage (with the exception of Greek citizens who were significantly more likely to tweet about street protests than other groups and other countries) the effort and transmission of these calls for action remains a property of a few committed activists and organisations coalitions concerned with organising protest action. A counter-argument, however, may call us to see the findings in light of the particular composition of the protest event. All three movements became notorious for rejecting hierarchical structures and leaders (Linsky, 2011), although according to some accounts leaders *did* eventually emerge. Therefore it cannot be ruled out that, especially for organisations affiliated with the

movement, transmitted calls for action were not the result of formal organisations but represent the 'collective will' of the leaderless individuals behind the Twitter account.

Our findings regarding the use of Twitter for logistical organisation and coordination of protest action are by no means more encouraging (questions RQ2a and b). Tweets diffusing content with instructions for organising (such as requests for protest material like banners or food supplies for the occupiers) and coordinating (such as calls for changes in the pre-scheduled format of the protest march or rescheduling of a general assembly) protest action was spectacularly low, regardless of the country or the type of twitterer. One may object arguing that this kind of organisation and coordination perhaps took mainly part through 'protected' Twitter accounts that were not visibly to the public (or the authorities!) and thus inaccessible to our crawlers. This would be sensible as these individuals may have been careful about revealing publicly who they are and what their organisational plans were. But if this is the case, then the persuasiveness of the argument that social media allows many of decentralised and leaderless individuals to contribute with personal updates to the better coordination of collective action, is much less impressive than initially thought.

More positive findings are obtained by exploring the use of Twitter as a facilitator of protest information diffusion (questions RQ3a and b). These results also provide a clear response to our fourth and overriding research question about the relative uses of Twitters for participation, organisation and communication. Citizens but also news agencies – especially in Greece – are increasingly using these media for live-updates and information spreading. This finding corroborates the results of a number of previous studies (see e.g. Chadwick, 2011; Anstead & O'Loughlin, 2011; Lotan et al., 2011). In addition, we found that in Greece social media offer a platform helping to bypass traditional news media by spreading links leading to alternative news sources. Moreover, contextual information shows that, across the three countries, people engaged in debates and made political statements reflecting the grievances and political problems of each country.

In general, our findings provide little information about the social media's causal influences on political mobilisation. Yet the results should provoke some healthy scepticism as to whether it is plausible to presume that such a causal relationship is at work in the first place. Although we should exercise some caution with our conclusions given that our 'slice' of data may not be entirely representative of the online narrative taking place during the events, the unavoidable question is: if only extremely few of the tweets sent (and mainly by organisations) are calling for offline participation or provide information for the organisation and coordination of collective action, then why would it be likely that ordinary people would use these tools for similar purposes in the future?

On the positive side, considering the findings of recent literature about the structure of informational cascades and given that no causal claims can be made based on these results, various unexplored avenues for social media's mobilising potential remain. Tufekci and Wilson (2012) found that the people who they interviewed in the streets of Cairo during the Arab Spring mobilisations had been moved by personal reports shared on Facebook and mediated content about the ongoing gatherings in Tahrir Square that kept appearing on their social media feeds. Although deliberate calls for action may not be broadly shared, sensational mediated content (such as the viral video of the UC Davis policeman pepper- spray a line of peaceful students) can have a mobilising function. Indeed, Thorson et al. (in press) found a variety of practices that linked platforms like YouTube and Twitter together, including sharing cell phone footage as eyewitness accounts of protest and police activity, news footage or movie clips, music videos and other entertainment content in the interest of promoting solidarity or sociability among social media users. These encouraging studies suggest that exhaustive investigation of the content and circulation practices may be an indicator for understanding whether information shared through

social media can activate available 'protest potential' (see Barnes et al., 1979) and should be treated as a substitute call for action. Most importantly, in order to understand the impact of these media on participation future studies should explore the extent to which those who read social media content (such as tweets or Facebook posts) about a certain protest event, decide to support the movement through some virtual action or by switching off their computers and taking to the streets – or both. Given that these potential activists are hard to detect, a reasonable starting point is to attempt to capture the attitudes of those already political interested; that is, the attitudes of those who we have seen tweeting about these protest events. Work on the impact of social media is only beginning.

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