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YOUTUBE, TWITTER AND THE OCCUPY MOVEMENT Connecting content and circulation practices

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YOUTUBE, TWITTER AND THE OCCUPY MOVEMENT

Connecting content and circulation practices

Videos stored on YouTube served as a valuable set of communicative resources for publics interested in the Occupy movement. This article explores this loosely bound media ecology, focusing on how and what types of video content are shared and circulated across both YouTube and Twitter. Developing a novel data-collection methodology, a population of videos posted to YouTube with Occupy-related metadata or circulated on Twitter alongside Occupy-related keywords during the month of November 2011 was assembled. In addition to harvesting metadata related to view count and video ratings on YouTube and the number of times a video was tweeted, a probability sample of 1100 videos was hand coded, with an emphasis on classifying video genre and type, borrowed sources of content, and production quality. The novelty of the data set and the techniques adapted for analyzing it allow one to take an important step beyond cataloging Occupy-related videos to examine whether and how videos are circulated on Twitter. A variety of practices were uncovered that link YouTube and Twitter together, including sharing cell phone footage as eyewitness accounts of protest (and police) activity, digging up news footage or movie clips posted months and sometimes years before the movement began; and the sharing of music videos and other entertainment content in the interest of promoting solidarity or sociability among publics created through shared hashtags. This study demonstrates both the need for, and challenge of, conducting social media research that accommodates data from multiple platforms.

Keywords social media; social movements; YouTube; Twitter; video; Occupy

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In early November 2011, video blogger Myles Dyer used YouTube's playlist feature to curate a list of 15 Occupy videos. His playlist included his own commentary on the videos as well as a 40 second introductory monologue. Dyer then tweeted a link to this first video, directly addressing the Twitter account of organizing group Occupy Together. Dyer's video reached more than 4400 views within six months of being posted.

Late at night on 25 November 2011, YouTube user yahshay uploaded a video titled 'Thanksgiving Night @ Zuccotti Park'. A few minutes later, a Twitter user with the same name, @yahshay, shared a link to the video in what appears to be a tweet automatically generated by YouTube: 'I uploaded a @YouTube video <http://t.co/QDwl4Cdk> OWS Video: Square Dance @ Zuccotti Park'. Yahshay's video, which has been viewed 109 times, was shared by at least one other user on Twitter, @highway39, who added 'Check this video out' and included the hashtag #ows. Yahshay's video was not widely retweeted, nor did it garner many views and comments on YouTube, but it too was part of the Occupy conversation.

Perhaps more surprising, the late rapper Tupac Shakur also became part of the conversations around Occupy in November 2011, when Twitter user @idgdisgd tweeted a link to the music video of Shakur's 1999 song 'Black Jesus' using the hashtag #occupyLA. Although this version of Shakur's video was soon taken down by YouTube due to copyright claims from the label that released the song, the tweet, with its broken link, remains online – we found it when we collected Tweets using Occupy-related hashtags – but we only know what the video was because it was captured by our automated crawl of YouTube before being removed.

Each of these videos entered the communication ecology of the Occupy movement in November 2011, and each reflects a different set of expectations and experiences regarding the production, use, and circulation of online video. The purpose of this article is to explore the diversity of media practices within contemporary social movements by opening a window into the specific case of videos linked to the Occupy movement.

Digital media challenge classic theories of collective action by enabling wide-scale, relatively unorganized contributions to repositories of resources for networks of activists and interested publics (Bimber *et al.* 2005; Baym & Shah 2011; Earl & Kimport 2011). Retweets of content on Twitter can lead to information cascades; viewers of YouTube videos leave comments and other traces that, in turn, alter the metrics of popularity and signal the value of content

both to future viewers and to algorithms that determine search results or recommend content; the cell phone videos of 10 Occupy Oakland protesters can be reassembled into a piece of investigative video journalism in the aftermath of a violent clash with police. We conceptualize the stock of videos available to a movement as a ‘second-order communal good’ (Bimber *et al.* 2005), a collection of resources created collectively, but without a bounded community, through video posting, tagging and circulation practices engaged in by individuals. In many cases, these practices are in turn enabled (and sometimes constrained) by the affordances of commercial online platforms such as YouTube and Twitter.

To explore videos related to the Occupy movement, we designed a data-collection methodology that gathered videos from independent searches of YouTube (for videos tagged with Occupy keywords, that is, videos *about* Occupy) and Twitter (by extracting links to videos from Twitter posts that carried the same set of keywords or related hashtags, that is, videos used to *talk about* or *to* Occupy) in November 2011. The sample of videos includes the expected on-the-ground protest footage shot by participants with cell phones and digital cameras – but also a startling diversity of content that includes clips from news media, self-produced music videos, street journalism by activists, and videos that cut across established genres by mixing and remixing borrowed and original footage, images, commentary, and music. Using an array of both human coding and computer-aided methods, we uncover a variety of video-sharing practices that link YouTube and Twitter together, including circulating cell phone footage as eyewitness accounts of protest (and police) activity, digging up news footage or movie clips posted months and sometimes years before the movement began, and the sharing of music videos and other entertainment content in the interest of promoting solidarity or sociability among publics created through shared hashtags.

Literature review

Digital media and protest ecologies

The explosion of protest movements in recent years has attracted attention from scholars of many disciplines. A central interest has been theorizing (and debating) the potentially transformative role of digital technology for protest and activism (Bennett 2003; Bimber *et al.* 2005; Earl & Kimport 2011). Digital media can reduce the cost of connecting and coordinating people, and may dissolve some of the obstacles once thought to only be surmountable through bureaucratic social movement organizations (Bimber 2003; Bimber *et al.* 2005). At the same time, sociological pressures on ‘late modern’ citizens have reduced tolerance for authorities and institutional engagement, encouraging many citizens to

seek more self-expressive forms of participation (Giddens 1991; Bennett 1998). The result is a landscape of contemporary protest movements that is unprecedented, not only in its ability to rapidly scale to attention-grabbing dimensions, but also in the diversity and degree of cross-national, cross-issue, and cross-ideological collaboration (Bennett 2003; Earl & Kimport 2011).

An essential question in the debate is what functions social media actually play in protest movements. One answer, given early on by Rheingold (2002), is that distributed and mobile communications media enable on-the-ground coordination of activists on an unprecedented scale. They may also do much more. Segerberg and Bennett (2011), for instance, argue that social media now play an important role in 'coconstitut[ing] and coconfigur[ing] the protest space' (p. 201). Any protest movement is a negotiation between a variety of entities, including individual activists and formal groups, who must work together to define issues from the movement's next actions to the movement's identity and meaning. Social media are increasingly one of the arenas where that negotiation may take place, particularly within movements with relatively weak or non-existent formal structures and diverse participant perspective such as Occupy.

Outside the domain of contentious politics, Baym and Shah (2011) found that networked content moving across digital platforms plays an important role in environmental activist networks. They tracked the circulation of 10 video clips about environmental policy as they were linked to and embedded across a series of news and activist websites, finding that sites linking to the original clips form 'networks of attention and affiliation, functioning both as *communal* goods by providing pathways to informational resources, and as *connective* goods by linking like-minded individuals and organizations' (p. 1029).

Understanding media products and the networks that carry them as resources that help protest movements accomplish their goals is echoed in recent theorizing on the changing nature of collective action in the digital era. The value of second-order communal goods rests 'on the ability of people to easily locate relevant information in order to reduce information overload and derive value' (Bimber *et al.* 2005, p. 372). The construction and continued availability of these communal goods are built on a combination of the practices of contributors (e.g. creating a video, tagging it with keywords so it can be found via search, or adding it to an ongoing conversation by using a shared Twitter hashtag) and the affordances of platforms¹ that store and 'make visible' collections of content (e.g. search APIs, algorithms for recommending content, monitoring for copyright violations, or display of promoted content) (Gillespie 2010).

Visible videos as repositories of movement resources

Media production provides both external and internal values to activists by creating media products which they can distribute to outside audiences and by

engaging supporters in the process of identity and message construction (Aufderheide 2003). Additionally, activist media provide a means of circumventing the mainstream news media, which has often ignored or offered distorted coverage of protest movements (McLeod & Hertog 1999). In the days before digital tools made media production accessible to amateurs, films were used by activist campaigns as part of a larger strategy to target key stakeholders with an intended message (Whiteman 2004; Gregory *et al.* 2005). Some NGOs, such as Invisible Children, invest heavily in video advocacy as their primary function and frame the participation of their members around video storytelling – a stark change from a time when video creation might be a small component of an organization’s overall advocacy campaign (Ekdale 2011).

One intriguing difference between earlier activist uses of video and the practices we observe today is that not only have production costs plummeted, but low-cost hosting services such as YouTube enable a persistent accessibility for online video. Materials produced for a specific campaign may be later revived and re-circulated in new contexts, among changed networks, and for different strategic purposes. Scholars of participatory culture have noted that digital artists regularly scour and appropriate archival and contemporary videos to create digital remixes and mash-ups – producing new texts using components of recognizable cultural artefacts (Jenkins 2003; Burgess & Green 2009; Horwatt 2009). Appropriation can also occur when content is reposted or re-shared in its original form in a new context, resulting in an additional layer of meaning (Baym & Shah 2011). Baym and Shah argue that videos fulfil diverse movement needs, acting as informational resources, as affinity resources to aid in the development of collective identity, and, potentially, as deliberative resources that can expand the pool of arguments for and against a variety of issue positions.

In sum, the media-sharing that takes place over protest networks serves a number of important functions. It may enable the coordination of on-the-ground tactics, but activists also produce and distribute media artefacts to facilitate information sharing, develop collective identities, and negotiate the meanings of protest activities and the movement’s trajectory. Of course, these artefacts that we can trace through the analysis of content circulating through social network platforms are only the tip of the iceberg for understanding movement networks that moved fluidly between online and offline modes of communication. As Castells (2012) points out, the Occupy movement was characterized by a ‘hybrid form of space’ made up of both physical occupations and their networked mediation. However, online traces remain vitally important as they ‘allowed the experience to be communicated and amplified, bringing in the entire world into the movement, and creating a permanent forum of solidarity, debate and strategic planning’ (p. 177).

As yet we know little about the content of videos linked to protest movements that are created and posted to video storage sites such as YouTube.

Several of these videos, particularly ones depicting violence, rose to be the subject of prominent news stories, such as pepper-spraying incidents in New York City and Davis, California. Such video creation and circulation practices fit squarely under Mann's notion of *sousveillance* (Mann *et al.* 2003; Mann 2004), an 'inverse panopticon' that keeps watch on those in power in an effort to equalize the asymmetrical nature of the relationship. These videos were subsequently used as source material for fellow activists, to show evidence of police brutality, and re-circulated through mainstream news. On the other hand, most videos – including many that include footage of interactions with police – had much smaller audiences, and often could not be well characterized by the concept of *sousveillance*. A first step to gaining a broader understanding of the use of digital video in and around the movement, and a first step in the current study, is thus to move beyond attention to only the most-viewed videos to characterize the content of a wider repository of videos linked to Occupy by their searchable metadata.

Making sense of social movement content creation and flow

The second step in this study is to explore how videos were brought into conversations *about* Occupy through inclusion in Occupy-related posts on Twitter. It is worth noting the weight that has been given to Twitter in extant accounts of protest movements. Twitter provides researchers with an intriguing window into the public and semi-public communication networks of protest movement actors, offering opportunities to see behind the veil of difficult-to-study social movement processes. The list of empirical studies of activism using Twitter data is thus long (Lotan *et al.* 2010; Segerberg & Bennett 2011; Theocharis 2012). Yet, as Segerberg and Bennett note, this focus on a single communication platform can serve to 'abstract new social media out of more complex contexts' (p. 199), leading to the 'fetishization' of specific platforms such as Twitter and Facebook.

We argue that the moment at which content moves from one platform to another may be a useful point for examining the production of communal goods in a dispersed, networked protest context. Thus, taking up Segerberg and Bennett's (2011) call for more attention to be paid to the 'complex contexts' (p. 199) in which networked activism takes place, we not only offer an analysis of the content characteristics of Occupy Wall Street videos posted to YouTube, but also the circulation patterns that emerge when we consider references to those videos (and others, as we will see) through Twitter.

The study of tweets tagged with Occupy keywords and hashtags is the study of how people talked *about*, talked *within*, and talked *to* the Occupy movement. The analysis of videos shared within that context can help us to see how videos are used as communicative resources within 'ad hoc publics', widely distributed conversations, and information-sharing streams that emerge through usage

practices within Twitter (Bruns & Burgess 2011). Papacharissi and Oliveira (2012) found tweets with the #Egypt hashtag tended to blend traditional news values and Twitter-specific values to produce what they term 'affective news streams', connecting news, opinions, and the expression of emotions. Meanwhile, different protest ecologies can emerge out of a single event, as exemplified by the use of competing hashtags related to the 2009 United Nation Climate Summit (Seegerberg & Bennett 2011).

Research context: the Occupy Movement in November 2011

The Occupy movement is an international network of protests against social and economic inequality that began in 2011 in response to the downturn of 2008. It can be broken up into three phases. First, the *pre-occupation period* began on 13 July 2011, when *AdBusters*, a Canadian journal of cultural critique, called for a 'Tahrir moment' in the United States (AdBusters Blog 2011). From even this early stage, the messaging encouraged action both offline (the instruction, 'occupy Wall Street') and online (the hashtag #OCCUPYWALLSTREET). The *occupation period* began on 17 September with the first encampment in New York City. Although it is difficult to pinpoint an end date for this period, by 1 January 2012, most major full-time encampments had been permanently cleared. Finally, the Occupy movement remains ongoing in a *post-occupation* phase, with demonstrations, protest and online activity continuing well into the present, mid-2012. For an in-depth description and analysis of the Occupy context, see Castells (2012).

Our study focuses on November 2011, during the height and then decline of the *occupation phase*. Between 14 and 20 November, news coverage about the Occupy movement reached a peak, accounting for 13 per cent of the total news-hole (Holcombe 2011). Some of the key events include the General Strike called by Occupy Oakland (2 November), the University of California, Davis pepper-spray incident (19 November), and a wave of evictions of camps in cities across the country, including major Occupations remaining in New York, Los Angeles, and Oakland (Davies 2011; Whitcombe & Slauson 2011; Wolf 2011).

Method

We conducted a content analysis of videos related to the Occupy movement collected from YouTube and Twitter in November 2011. Our data collection includes (1) the results of a search for Occupy-related keywords on YouTube, and (2) YouTube videos extracted from tweets that matched the same set of Occupy-related keywords.² This approach to data collection allowed us to investigate the role of video in the Occupy movement from two perspectives, considering both videos posted to YouTube with Occupy-related terms in their titles,

tags, and descriptions, as well as videos from YouTube that were linked to from Occupy-related tweets over the same time period. Data collection and analysis proceeded in three steps: collection of YouTube video IDs from YouTube and Twitter, computer-assisted collection of metadata about each video, and a content analysis of a sample of videos from each source ($N = 1100$).

Video collection

Searching YouTube. We used the commercial social media monitoring tool Radian6 to identify YouTube videos posted between 1 November and 30 November that matched a set of keywords about the Occupy movement.³ Using Radian6 provided an advantage over publicly available tools for searching YouTube because it enabled us to conduct our search retroactively, use a complex search query, and avoid limits on search results imposed by YouTube's API. This search returned 43,378 unique YouTube URLs.

Searching Twitter for YouTube videos. We used the Gnip PowerTrack service to collect tweets in real-time during the same time period (November 2011). As a commercial reseller of Twitter data, Gnip is exempt from the content limitations that Twitter imposes on users of its public APIs and provided us with access to the full volume of Twitter activity, colloquially termed the 'firehose'. Using PowerTrack, we collected tweets using an evolving set of keyword-based rules to which we continually added new terms and phrases in response to emergent events within the Occupy movement. This set of keywords was designed to favour inclusivity and captured a large, but noisy collection of 4,869,264 tweets. We next parsed the text of each tweet in search of a valid URL. After expanding all shortened URLs⁴ and manually correcting URLs mangled by multiple rounds of retweeting, we identified 417,413 unique URLs, from which we extracted 22,768 unique YouTube video IDs.⁵

By the end of the month of November, our evolving rule set included 371 Occupy-related keywords and phrases using Gnip PowerTrack. To facilitate comparison with Radian6, we filtered the collection of Occupy tweets a second time using subsets of the keywords previously used with Radian6.⁶ We identified a subset of 10 terms and phrases that produced the largest overlap in results between Gnip and Radian6 without significantly reducing the overall total number of unique YouTube videos. This two-step filtering process was crucial as it enabled comparison across commercial search tools (Radian6 and Gnip PowerTrack), and produced a robust population of Occupy-related YouTube videos. After the second round of filtering, our collection included 4,233,925 tweets, of which 1,890,143 (44.6 per cent) contained any URL and 146,253 (3.5 per cent) of the tweets linked to a video stored on YouTube. From these links, we identified 21,531 unique YouTube video IDs.

YouTube plus Twitter. We then merged the two data collections using the YouTube IDs. In the absence of previous research addressing the relationship between these services, we expected that the overlap between the two sets of YouTube videos would be quite large. In fact, only 5,770 videos appeared in both the search of YouTube *and* the collection of video IDs extracted from Twitter (the ‘overlap’ of the two populations). That is, in November 2011, only 13.3 per cent of videos posted to YouTube with Occupy-related terms in their titles, tags, and descriptions were also tweeted alongside an Occupy-related keyword or hashtag. Conversely, only 26.8 per cent of YouTube videos tweeted with Occupy-related hashtags or keywords were found in a comprehensive search of YouTube for Occupy videos posted during the same time period.

Our analysis (discussed in detail below) reveals three interrelated reasons for this finding: (1) many Twitter users tweeted videos that were posted months or even years before the time of the tweet, thereby including videos that did not fall within our November 2011 YouTube search parameters; (2) many tweeted videos were not explicitly about Occupy at all, but rather were music videos or news stories or clips from entertainment media that were made relevant to Occupy only in the context of a tweet; and (3) we identified cases in which Occupy hashtags were used in an attempt to garner audiences for unrelated content, such as a television show on UK’s Channel Four.

Metadata collection

We used multiple tools with complimentary affordances to gather metadata about the tweets and videos under observation. Each tweet streamed by Gnip Powertrack was accompanied by, at minimum, a timestamp recorded by Twitter, a list of hashtags and URLs, and profile information about the sending user – including screen name, description, number of followers, and total number of tweets. For each YouTube URL, Radian6 captured the date on which the video was posted, the name of the user who posted it, the YouTube category to which it belonged (e.g. ‘News & Politics’ or ‘Music’), any tags assigned by the user, the publication date, and the view count when the video was initially crawled (usually within the first one to three days of posting). We additionally used ContextMiner to fill in the metadata gaps left by Gnip and Radian6. Whereas Gnip yields a real-time stream of tweets and Radian6 provides a one-time search, ContextMiner repeatedly crawls the same videos over time. Subsequent crawls by ContextMiner in July 2012 retrieved the publication date, duration, view count, comment count and rating for each video in our collection.

Content analysis

In the final step of the analysis, we conducted a content analysis on a probability sample of videos collected in step one above. These sampled videos serve as the core data set for findings reported in this article.

Sampling. We used a stratified random sampling procedure to ensure the inclusion of a representative number of videos from the YouTube search and from the Twitter search. In addition, because of our particular interest in the circulation practices represented by videos that were tweeted, we oversampled from the population of videos found in *both* data collections (the ‘overlap’) in order to have a sufficient sample for analysis. We analysed 1100 videos: 375 videos from the Twitter sample, 365 from the YouTube search, and 360 from the overlap between the two data collections.

During the course of this project, 18 per cent of the videos we initially observed were removed from YouTube. YouTube provides a small amount of detail regarding these removed videos and human coders were able to identify a general cause for the removal of most of the missing videos. For the majority of videos, either the account hosting the video was closed by the user or by YouTube (16 per cent), or the video itself was marked private (1.9 per cent) by the account holder. YouTube videos found in the Radian6 search were more likely to be unavailable than those found in tweets via Gnip PowerTrack. The implications of these observations for future research are explored in the discussion. For the purposes of the present content analysis, each missing video was replaced by another video from the same population (Twitter, YouTube, or overlap), selected at random. This procedure was repeated until the quota for the video samples was reached.

Six coders were trained as a group using a series of sample videos. After training was complete, we selected 92 videos for reliability testing, following Riffe *et al.*'s (2005) recommendations for achieving a 95 per cent confidence level assuming 90 per cent agreement in the population. All six coders coded these 92 videos, which were selected using stratified random sampling to ensure reliability testing across videos from the YouTube search, videos extracted from Occupy tweets, and the ‘overlap’ population. A calculation of intercoder reliability showed that our measures were reliable: average percent agreement was 0.86, and Cohen's Kappa, averaged across multiple coders, was 0.76. (Scores for individual variables can be found in Table 1.) The Kappa is a common metric for inter-rater reliability reporting, allowing for comparisons across multiple coders. After coding the sample for reliability testing, the six coders separately coded the full sample of videos, with each coder analysing between 100 and 300 videos.

Coding procedure. Videos and their titles, tags, and descriptions were coded for a mix of content and production qualities (see Appendix 1 for complete coding instructions). Content coding emphasized an investigation of (1) appropriation

TABLE 1 Percent agreement and Cohen's Kappa coefficients.

<i>Items</i>	<i>Percent agreement</i>	<i>Cohen's Kappa</i>
Explicitly about Occupy	0.95	0.85
Form: borrowed vs. original	0.92	0.83
Original: scripted, filmed live event, monologue	0.89	0.78
Borrowed: source	0.72	0.65
User edited	0.93	0.81
Degree of editing	0.83	0.68
Genre	0.75	0.70
Police	0.89	0.78
Music video	0.94	0.79
Production quality	0.82	0.68

practices (e.g. 'borrowing' content from news media or other protesters) (Elmer *et al.* 2008; Thorson *et al.* 2010), (2) classification of videos into genres (adapted from Van Zoonen *et al.* 2010), such as 'cut and mix' and 'cut and paste', (3) assessing production quality, and (4) marking the presence or absence of content features associated with the Occupy movement, such imagery of police or use of The People's Mic.

Given the goal of our content analysis was to classify videos rather than characterize the content of each one in-depth, we chose to code the first four minutes of each video. The content analysis allowed us to annotate our data set with details about video production, content, and genre, the results of which are presented below. Cross-tabulation of the data also enabled us to select videos by specific practices, such as 'remixed videos of protest footage', for richer, textual analysis. In what follows, we use examples from this analysis to illustrate the diversity of videos that comprised Occupy's media ecology.

Table 2 presents descriptive statistics for view counts, counts of comments and ratings, and the content coding categories for the sample of videos extracted from Twitter and found via YouTube search (excluding the oversample of tweeted videos), as well as separately for videos found on YouTube and videos extracted from Twitter. The median video received 396 views, three comments, and was 'rated' by a viewer six times.

Findings

Protest footage is the most common genre of video overall

Protest/occupation footage is the largest subset of video genres, comprising nearly 30 per cent of all videos. Two-thirds of the videos (68.2 per cent) were

TABLE 2 Descriptives for sample of videos.

	<i>Full sample (excluding oversample, N = 740)</i>	<i>Found via Twitter (N = 374)</i>	<i>Found via YouTube search (N = 365)</i>
<i>Video metadata</i>			
Median view count	396	4837	99.5
Median rating count	6	42	1
Median comment count	3	19	0
<i>Video genre</i>			
Protest footage	27.7%	17.3%	38.4%
Cut and mix	18.1%	21.6%	14.5%
Cut and paste	15.1%	20.5%	9.6%
Original news footage	13.5%	14.7%	12.3%
Testimonial/vlog	9.2%	5.1%	13.4%
Other	5.8%	8.0%	3.6%
Tagging/jamming	5.3%	6.7%	3.8%
Public speech	5.3%	6.1%	4.4%
<i>Video type</i>			
Original	68.2%	57.6%	78.9%
Borrowed	31.8%	42.1%	21.1%
<i>Original type</i>			
Filmed live event	59.7%	51.9%	65.5%
Scripted	18.7%	26.9%	12.5%
Interview	11.9%	13.4%	10.8%
Monologue	9.7%	7.9%	11.1%
<i>Borrowed source</i>			
News TV	35.3%	25.3%	55.8%
Music video	22.1%	30.4%	5.2%
Rally	14%	8.9%	24.7%
Entertainment TV	12.8%	15.8%	6.5%
Other	8.1%	9.5%	5.2%
Speech	6%	8.2%	1.3%
Advertisement	1.7%	1.9%	1.3%
<i>Production quality</i>			
Amateur	51.4%	34.7%	63.9%
Pro-Am	31.3%	36.6%	27.4%
Professional	17.3%	28.7%	8.7%

classified as ‘original’ content – containing little or no content appropriated from another source. Of these original videos, few (18.7 per cent) are scripted content (e.g. advertisements), in contrast to populations of videos associated with professionally funded campaigns like California’s Prop 8 ballot initiative (Thorson *et al.* 2010). Rather, 60 per cent of original videos portray live event footage and just over half (51.4 per cent) were coded as ‘amateur’ videos.

These protest footage videos match the popular imagery of protesters and observers using cell phones to capture events at Occupation sites, rallies, and marches. For example, one video coded as amateur live event footage is titled ‘OCCUPY WALL STREET PROTESTERS VIOLENTLY ATTACKED BY POLICE (AGAIN!) – PEPPER SPRAY’, and was filmed by a protester on the front lines of an altercation with police (weprez 2011). It depicts the arrest of several other protesters as the crowd chants, ‘Peace’ and ‘Shame on You!’ repeatedly. Though the title indicates the use of pepper spray, this is not discernable in the video itself, but police are seen using force against protesters with batons. Around the 1:30 mark, the cameraman zooms in on a police officer, offering the interpretation, ‘You’re not happy about this, I can see it’. The police officer turns his face away and does not respond to the provocation.

Not all protest footage was shot by protestors themselves or offered a sympathetic view of the movement. In a video called, ‘Occupy DC: Keeping it Classy’, an attendee of the Defending the American Dream Summit, a conference organized by the conservative Americans for Prosperity, films Occupy protestors outside the hotel where the conference is being held (katyabram 2011). The video highlights protester behaviour deemed inappropriate by the camerawoman. When a protestor shouts profanity, she responds, ‘Nice language. Your mom would be proud’. She continues to film the protestors for another few minutes, eventually entering into a heated debate on the merits of capitalism with a small group of protestors.

About one-third (31.8 per cent) of videos contained substantial amounts of footage, images or music borrowed from another source. The most popular source of borrowed content overall is the news media (35.3 per cent) followed by songs/music videos (22.1 per cent), other people’s protest footage (14 per cent), and entertainment media (12.8 per cent). These videos were often appropriated directly, with no modification – a practice Van Zoonen *et al.* (2010) refer to as ‘cut and paste’. For example, footage from the Russian English language news site *RT.com* appeared frequently in the sample, likely both because this alternative news source (tagline: ‘Question More’) provided sympathetic coverage of the Occupiers and also because their online-only format makes it easy to borrow and spread their content (OccupyTV99 2011).

The diversity of video creation and circulation practices becomes more visible as we turn from exploring the full sample of videos to look at the way tweeted videos differ from those that were not circulated in conversations about Occupy.

The role of video in Twitter conversations about Occupy

Including our oversample of tweeted videos enables us to do in-depth comparisons of videos that were tweeted in the context of Occupy ($N = 777$) with those that were not ($N = 323$). Tweeted videos differ in several meaningful ways from those that are only uploaded to YouTube. Videos shared on Twitter have significantly more views, ratings, and comments than those that are not tweeted (Table 3). There is a possible causal relationship here, as we would expect that sharing a video on Twitter using Occupy-related keywords or hashtags should increase chances of the video reaching an interested audience. On the other hand, our data suggest an additional explanation for this finding: Many videos tweeted as part of the conversation about Occupy are not explicitly 'about' the Occupy movement at all but rather have had a long life on YouTube (and many previous viewers) before the movement even began. Of the 1100 videos we coded, fully a quarter (24 per cent) were not about Occupy. They were instead music videos, clips from entertainment television or movies, or news footage about previous protest movements or tangentially related current events that were brought into the Occupy conversation when they were tweeted.

There are also substantial genre differences between tweeted and non-tweeted videos (Table 3). Non-tweeted videos are more likely to be protest footage (38.7 per cent) than are tweeted videos (27.8 per cent). Tweeted videos are less likely to be original videos and more likely to contain borrowed footage, and are more likely to be professional content than footage from amateur videographers. Among the videos that contain borrowed content, differences arise as to its source: tweeted videos are less dominated by news footage (36 per cent compared with 55 per cent), but are more likely to be music videos (21 per cent compared with 4 per cent).

Compare, for example, the non-tweeted video 'Occupy Miami 10-15-2011 at Bayfront Park' (Figure 1) and the tweeted video 'I AM NOT MOVING – Short Film – Occupy Wall Street' (Figure 2) (Bigsteelguy4 2011). The former has a low view count (66 views) and consists of four minutes of extremely uneventful footage of Occupy Miami (puppydogg9 2011). Using what appears to be a cell phone or other low-quality handheld camera, the videographer pans a quiet crowd of protestors with faint drumming and chanting in the background. The user's description of the video, 'Just another video ... i have one that is 21+ mins long but i cant upload that i guess ...' indicates that this user is principally concerned with those technological affordances that enable storage and circulation – How much space does she or he have? How much can be quickly uploaded? – rather than a concern for editing and optimizing to gain viewers. It is, in the poster's words, 'just another video'.

In contrast, the tweeted video 'I AM NOT MOVING – Short Film – Occupy Wall Street' is clearly optimized for circulation. It is a 7:12 minute long, high-quality montage of political speeches, news footage and protest footage, a clearly

TABLE 3 Comparisons between tweeted vs. non-tweeted videos.

	<i>Tweeted</i> videos (N = 777)	<i>Non-tweeted</i> videos (N = 323)	<i>Test of difference</i>
<i>Video metadata</i>			
Median view count	1384	83.5	$U = 43,790, p < 0.001$
Median rating count	16	1	$U = 49,002, p < 0.001$
Median comment count	10	0	$U = 54,413.5, p < 0.001$
<i>Video genre</i>			
			$\chi^2 = 25.66, p < 0.01$
Testimonial/vlog	8.0%	12.7%	
Cut and mix	18.8%	14.9%	
Cut and paste	14.5%	9.6%	
Tagging/jamming	3.6%	4.0%	
Public speech	5.1%	4.6%	
Original news footage	17.0%	11.8%	
Protest footage	27.8%	38.7%	
Other	5.1%	3.7%	
<i>Video origin</i>			
			$\chi^2 = 11.83, p < 0.01$
Original	78%	67.6%	
Borrowed	22%	32.3%	
<i>Original from</i>			
			$\chi^2 = 6.61, p < 0.10$
Scripted	15.6%	13.5%	
Filmed live event	62.0%	65.1%	
Monologue	7.6%	11.5%	
Interview	14.7%	9.9%	
<i>Borrowed from</i>			
			$\chi^2 = 23.62, p < 0.01$
Rally	13.5%	25.4%	
Speech	6.0%	2.8%	
News TV	35.9%	54.9%	
Entertainment TV	11.2%	7.0%	
Advertisement	1.2%	1.4%	
Music video	21.1%	4.2%	
Other	11.2%	4.2%	
<i>Production quality</i>			
			$\chi^2 = 34.20, p < 0.001$
Amateur	45.3%	64.7%	
Pro-Am	32.0%	27.4%	
Professional	22.7%	7.9%	

effortful synthesis of diverse, collected materials into a powerful video narrative, requiring time and technological know-how to produce. The description indicates the video is a teaser for ‘OCCUPY THE MOVIE’ and asks viewers, ‘Please SHARE



FIGURE 1 Screenshot, Occupy Miami at Bayfront Park (photograph by author).

this campaign'. The video link was tweeted 260 times in our sample and has more than 1.1 million views. Videos such as 'Occupy Miami 10-15-2011 at Bayfront Park', containing little or no editing on their own, often live a second life as they provide the raw footage used in videos like 'I AM NOT MOVING'.

Most videos make only a fleeting appearance on Twitter

Substantial differences also exist between videos that get a lot of attention on Twitter – whether that occurs through retweets or through multiple posts of the same video – and those that are tweeted only once. Most videos do not circulate broadly on Twitter. Half of tweeted YouTube videos are only tweeted once (52.3 per cent). The median number of tweets per video is one, and less than 10 per cent of tweeted videos received more than 10 tweets. The everyday practice of circulation is not best characterized by 'going viral'. Few videos seem to gain traction within the public's paying attention to the Occupy movement. As seen in studies of hashtag use on Twitter, it is clear that those following Occupy hashtags are actively curating content (Segerberg & Bennett 2011).



FIGURE 2 Screenshot, I am not moving (photograph by author).

Table 4 explores these curation processes by looking at the average number of tweets received by each genre of video. Original news footage, protest footage, speeches, and ‘cut and mix’ videos receive substantially more attention

TABLE 4 Number of tweets by video genre.

	<i>Mean number of tweets</i>	<i>Standard deviation in tweets</i>	<i>N</i>
<i>Video genre</i>			
Testimonial/vlog	4.48	12.70	62
Cut and mix	8.06	28.47	146
Cut and paste	3.17	6.98	113
Tagging/jamming	1.54	1.26	28
Public speech	8.10	12.80	40
Original news footage	9.58	35.30	132
Protest footage	8.93	37.77	216
Other	7.20	17.49	40

on Twitter, averaging between eight and 10 tweets. In contrast, tagging and jamming videos – videos tagged with Occupy labels for promotional purposes – appear in the Twitter data 1.5 times on average. It has become a common practice in public relations campaigns to attempt to insert content into ongoing conversations on Twitter. For example, promoters of a cartoon short on UK’s Channel 4 – ‘Evil Kweevil’ – tried to attract attention for the show by a tweet to @OccupyWallStNYC, ‘Yo dudes sick ass protesting by the way! Might come down ... <http://t.co/pKG9VfVh> ...and jump some protesters! cool? x’. The video did not spread within the Occupy conversation on Twitter (channel4 2011).

YouTube as a repository for communication resources

As noted above, many videos extracted from the Twitter sample were not explicitly about the Occupy movement. We were particularly intrigued by the practice of digging up ‘old’ videos on YouTube to share and recontextualize in the context of tweets about Occupy. For example, Twitter user ‘LilMissSocial’ tweeted a link to John Lennon’s song, Working Class Hero, from his 1970 solo album, *John Lennon/Plastic Ono Band* (Jigowatts 2006). The user tweeted, ‘A Working class hero is something to be: <http://t.co/1XjWxduo> #ows #p2 #tcot #occupymarines #occupypolice #occupyLA @#anonymous,’ referencing the song’s chorus. The YouTube video for the song was posted in 2006, 1849 days before the tweet, and has amassed more than 7 million views. This is just one of many attempts by Twitter users to create a soundtrack for the movement and, in some cases, to create intertextual meaning by putting songs into ‘conversation’ with Occupy and its participants. Other tweeted song examples include 1978 footage of The Talking Heads performing ‘Don’t Worry about the Government’ (bohemian500 2010) and a remix of early twentieth century photos set to Billy Bragg singing the International Socialist Anthem, *The Internationale* (Anarchynotchaos 2007).

To explore this practice of YouTube archeology quantitatively, we created a variable to indicate the time (in days) between when a video is uploaded to YouTube and when it was tweeted for the first time. Just over half of the tweeted videos (63 per cent) were shared on Twitter within two days of their YouTube upload, and 77 per cent of tweeted videos were posted to Twitter within one month of their upload. These findings suggest two different stories about Twitter, YouTube videos, and the Occupy movement. The first story involves ‘live’ resource sharing on Twitter. These practices are likely linked to the need for rapid mobilization around specific events, and are somewhat more common than the digging up of old videos.

The second story involves the one-third of videos that do not fall within this immediate timeframe. Table 5 provides comparisons between the ‘live’ sharing of video resources (the video was tweeted within two days of posting) and YouTube

TABLE 5 Comparisons between videos that were tweeted immediately vs. not.

	<i>Tweeted within two days (N = 496)</i>	<i>Tweets older than two days (N = 294)</i>	<i>Test of difference</i>
Median view count	624.50	9,528	$U = 39.490, p < 0.001$
<i>Genre</i>			$\chi^2: 133.37, p < 0.001$
Testimonial/vlog	8.3%	7.6%	
Cut and mix	13.7%	27.4%	
Cut and paste	9.1%	23.3%	
Tagging/jamming	1.4%	7.3%	
Public speech	5.2%	5.2%	
Original news footage	21.1%	9.7%	
Protest footage	38.1%	10.8%	
Other	3.1%	8.7%	
<i>Video origin</i>			$\chi^2: 75.74, p < 0.001$
Original	79.1%	48.8%	
Borrowed	20.9%	51.2%	
<i>Original from</i>			$\chi^2: 44.00, p < 0.001$
Scripted	9.2%	32.1%	
Filmed live event	68.5%	45.7%	
Monologue	7.3%	8.6%	
Interview	15.0%	13.6%	
<i>Borrowed from</i>			$\chi^2: 52.59, p < 0.001$
Rally	19.8%	9.5%	
Speech	4.0%	7.5%	
News TV	53.5%	23.8%	
Entertainment TV	4.0%	15.6%	
Advertising	1.0%	1.4%	
Other	13.9%	9.5%	
Music video	4.0%	32.7%	
<i>Production quality</i>			$\chi^2: 18.44, p < 0.001$
Amateur	51.0%	30.7%	
Pro-Am	27.5%	43.6%	
Professional	21.5%	25.7%	

archeological practices. Videos that were tweeted right away were overwhelmingly original content (79 per cent); ‘older’ tweeted videos are split more evenly between borrowed (51 per cent) and original (49 per cent) content. There are striking differences in terms of the source of the original content. ‘Live-tweeted’ videos are primarily filmed live events (69 per cent), whereas

tweets that required video archeology are a mix of filmed live event (46 per cent) and scripted content (32 per cent).

There are also differences in the source of appropriated content. More than half of live-tweeted videos include content borrowed from the news media, whereas only a quarter of 'old' videos borrow from the news. In general, videos that have been dug up for tweeting are much more likely to be borrowed music videos and entertainment content than are the 'live' videos. Table 5 displays the video genre breakdown between the two categories of videos, again highlighting that live tweeting practices focused on protest footage and the circulation of original news footage while YouTube archeology is primarily the re-circulation of remixed and 'cut and paste' videos already existing on the site.

Discussion

The diversity of practices found in our analysis of YouTube videos in the Occupy movement highlights the futility of regarding social media uses or users as singular, coherent categories. Occupiers posted videos that 'went viral', capturing spectacular instances of police brutality such as the pepper-spray incident at the University of California, Davis and making them visible to mass-scale audiences. These types of videos make sense through the lens of sousveillance, exemplifying the use of portable devices by activists to monitor the behaviour of those in power and strategically force transparency on the actions of police (Bakir 2010). But Occupiers and interested others also posted passionate, eloquent appeals for political reform, mash-ups of protest and occupation footage from around the world, self-produced videos for original songs about Occupy, and slide shows about Occupy narrated with protest songs from the 1960s. They asserted the relevance of videos having nothing obvious to do with Occupy by posting about them on Twitter or uploading them to YouTube alongside Occupy-related metadata. And they shared cell phone videos from occupations and demonstrations in London, Oakland, New York, Los Angeles, Toronto, and 112 other locations that tell no story at all but rather serve as artefacts of having witnessed an event (Kahn & Kellner 2004; Gregory *et al.* 2005). Whether Occupiers regarded YouTube as a platform for publicity, sociality, circulation, or simply as a personal archive, the materials they uploaded contributed to a stock of resources available to publics associated with the Occupy movement. The mere act of adding 'Occupy' to a YouTube video's title, tags, or description made it accessible via search and therefore part of a communal good – 'a class of public goods attained through communication . . . where members jointly hold a single body of information' (Fulk *et al.* 1996, p. 67).

But this serves to highlight the risk of relying on the stewardship of commercial services to store such resources. In this case, the communal good of videos about Occupy is made possible only through the search and storage affordances of

YouTube, a precarious home for communications within a protest movement. Even more precarious are those communal goods whose meanings depend on two or more different platforms – such as when non-Occupy videos were used in Occupy tweets. If the non-Occupy video is removed by the original uploader or taken down because of a copyright claim, the tweet will linger on with a dead link. Conversely, the relevance of the video to the Occupy movement is inaccessible without the meaning-making power of the tweet. As artefacts and discourses cross the boundaries among different platforms, they reveal an interdependence among sites and services that exceeds the relationship of any one corporation to another. Disruptions on one platform will have unpredictable effects – social as well as technical – to all interrelated platforms.

The evolving body of Occupy keywords and hashtags on Twitter produces not only *ad hoc* publics (Bruns & Burgess 2011), but is also a connective good, linking members of a public together and giving them at least the possibility of communication. Videos found in this context indicate a wider diversity of video making and sharing practices than is suggested by YouTube searches alone.

At a basic level, we documented what appeared to be a sort of quality control filtering via video sharing on Twitter. Videos with higher production values than the average Occupy-tagged video on YouTube were more likely to be tweeted (although not more likely to *spread* in Twitter). Content also mattered when it came to tweeting, and genre differences were related to how often videos were tweeted in the context of Occupy. This initial look at the curation of videos via Twitter hashtag opens a ripe subject for future research. As Segerberg and Bennett (2011) showed in their study of two hashtags that were used in climate change protests, hashtags themselves may have their own distinct ecologies and their own patterns for sharing resources pulled from across platforms – video, news stories, blog posts, and so on.

We also recognize an important secondary role for YouTube as an archive of video resources related to the Occupy movement. Many people uploaded minimally edited content to YouTube with scant metadata to make it findable via search and, as expected, such videos were seldom mentioned on Twitter. The lack of metadata and minimal effort at circulation make these videos difficult to capture with our keyword-based collection methodology. This suggests that the use of YouTube for archival purposes is likely even more widespread than is represented in our data.

Thinking about YouTube as an archival medium in addition to a social network or video-sharing service offers new ways to read videos with very small view counts and limited circulation on Twitter. For archival uploads, view count may be a poor indicator of meaning, impact, or significance. Rather than failed attempts to attract broad viewership, archival videos may represent artefacts of intensely local (even individual) meaning. Videos that do not circulate are not necessarily examples of people shouting into a void, trying and failing to make their voices heard to others. They may also represent the use of

protest video in service of personal identity expression and maintenance (Pingree 2007). Archival uses of YouTube also suggest a number of pragmatic reasons for uploading videos that do not engage with the social features of the service, such as backing-up video recorded while mobile, replicating politically sensitive videos to guard against censorship, and temporarily storing raw video to be edited later.

The pragmatic affordances of YouTube as an archival storage medium also enabled Twitter users to interject a diverse set of 'historical' video clips into the ongoing discussion of Occupy. A substantial proportion – more than one-third – of tweeted videos link to content posted more than two days before the first tweet is recorded. These videos differ in meaningful ways from the more immediate content. They are less likely to be live original footage of protests, and instead are more likely to borrow from other sources – particularly music videos and entertainment footage – to produce meaning. The old videos they draw out of YouTube's archive are revived in the context of ongoing symbolic play, provocation, and debate on Twitter.

Twitter users engaging in such archaeological practices may regard YouTube as a storehouse of video, common fodder for re-appropriation. But it would be a mistake to define the relationship between YouTube and Twitter strictly in terms of the relative permanence and ephemerality of content contained or circulated through each platform. Indeed, our own data show that many YouTube videos were removed from the site within a few months after November 2011 – some by users themselves, some because of copyright violations – and we expect that as time passes, videos will continue to disappear. Twitter offers even fewer affordances for archiving. Its capacity for historical search is severely limited and URL shortening services such as bit.ly or Twitter's own t.co represent significant potential points of failure that promise to fracture the archive over time. Not only can a video at the end of a long chain of shortened links be removed from YouTube, but the shortening services themselves will one day cease to operate, breaking a link in the chain itself. Simply put, neither Twitter nor YouTube are particularly mindful long-term stewards of the materials they store. To some extent, the persistence of certain ideas or media artefacts is due to the efforts of specific individuals within the community to vigilantly maintain their own redundant archives.

Discussions of participatory culture that emphasize users' ability to remix existing media content often overlook the routine practices of uploading or referencing existing video content without any effort to edit these works – what we, following Van Zoonen *et al.* (2010), have coded 'cut-and-paste' videos. Our data show that these practices are just as common as 'remixed' videos. In addition, the movement of cultural artefacts across platforms represents a distinct form of appropriation in which intact video segments are recontextualized, though Twitter commentary or YouTube descriptors, to give the videos new life. Videos that juxtapose occupation footage with images and music of John Lennon offer clear examples of meaningful appropriation (videoactivistnetwork

2011), but so does an unedited video clip of Howard Beale's infamous speech from *Network* uploaded to YouTube with the headline 'Mad as hell – We are the 99 per cent' (Johnfnord 2011) and the tweet 'I want to hold your hand #ows' with a link to The Beatles' music video on YouTube. The Beatles never intended to sing about Occupy Wall Street, but @dogdavebb made the group a part of the Occupy ecology through his YouTube archeology and Twitter recirculation. Notably, these appropriation practices are only made visible to scholars using data that can see *across* platforms.

In that vein, this study demonstrates both the need for, and challenge of, conducting social media research that can accommodate data from multiple platforms. As it becomes increasingly routine for users to load multiple tabs in their web browsers and applications on their smartphones, it is crucial to observe social media use across many different sites and services in simultaneity. While wrangling data from highly centralized private services such as Twitter and YouTube can be a frustrating – and expensive – endeavour, identifying the gaps in imperfect platform-specific data can produce a more robust, holistic picture of a social phenomenon as it is actually experienced by participants. Furthermore, the many unexpected uses afforded by open-ended social software present an opportunity for productive collaboration among researchers from different perspectives. Narrowly-focused, grounded observation helps to identify new and emerging artefacts and practices that can, in turn, inform the production of well-tuned heuristic rules for data collection and coding schema for the content analysis.

The challenges of multi-platform (or trans-platform) methodologies are as often ethical as practical. As we completed the content analysis portion of this study, for example, it became clear that, in many cases, users did not expect the contexts of their tweets and videos to be reconstructed in such detail. The removed videos noted previously provide an example. While, according to YouTube API error messages, most of these videos were removed because of copyright claims or terms of service violations, 82 appear to have been taken down voluntarily by their authors. These videos represent intriguing absences amid a very large data set. Were they intended to be temporary and did uploaders remove them in the course of curating their own video collections? Did they depict civil disobedience or otherwise put activists in danger? Did their authors regret the content of the videos? Future iterations of this methodology might anticipate this instability in the data-collection procedures and provide new avenues for interpreting such dynamic data.

Navigating the many challenges in this research provided a richer, more nuanced representation of Occupy-related video would have been possible with less-ambitious approaches. The movement depicted in the videos we collected and coded from November 2011 is more diverse in terms of geography, tactics, participation, and areas of concern than was represented in either the journalistic coverage at the time or as yet in scholarly discourse that has unfolded

in the months since. Likewise, the coded sample of videos produced in the course of this study uncovered new avenues of future research regarding the Occupy movement that would otherwise have remained obscure. Not only do holistic, multi-platform approaches to social media benefit researchers, but they more closely attend to the complexity of participants' lived experience.

Notes

- 1 Following Gillespie (2010), although we recognize 'platform' as a complicated and ambiguous term, we use it here to describe online services, such as Twitter and YouTube, that operate according to particular terms of service, commercial interests, technological affordances and constraints, and social and cultural norms.
- 2 A common set of keywords was adapted for the peculiar characteristics of each service. For example, while the use of #hashtag syntax is native to Twitter, it is less commonly found in YouTube descriptions, titles, or tags.
- 3 Keywords were: #occupy, #ows, move your money, ows, occupy, occupy movement, occupy together, occupy wall street, we are the 99, zucotti. False positives for the search term 'occupy' were nearly eliminated by use of proximity word functionality in Radian6.
- 4 All URLs shared on Twitter are shortened at least once. For example, the short URL <http://t.co/jxXSNAsr> redirects to <http://www.youtube.com/watch?v=u7OPv3y216Q&feature=youtu.be>. However, third-party software, such as Echofon or Tweetdeck, may introduce additional rounds of shortening and, over time, links that are highly circulated among Twitter users may be shortened dozens of times.
- 5 Each video on YouTube is identified by a unique, case-sensitive, eleven-character ID, for example, 70QzGFWumZQ.
- 6 The exact search terms differed slightly between Gnip PowerTrack and Radian6 to account for differences in each tools and in the particular data being parsed. For example, hashtag syntax (e.g. #occupy) is native to Twitter and appears less frequently on YouTube.

References

- AdBusters Blog* (2011) '#OCCUPYWALLSTREET: A shift in revolutionary tactics', 11 July, [Online] Available at: <http://www.adbusters.org/blogs/adbusters-blog/occupywallstreet.html> (17 December 2012).

- Anarchynotchaos (2007) 'The Internationale' (videorecording), 9 May, [Online] Available at: <http://www.youtube.com/watch?v=Zk69e1Vcmvg> (17 December 2012).
- Aufderheide, P. (2003) *In the Battle for Reality: Social Documentaries in the U.S. Media*, Washington, DC, p. 93, [Online] Available at: http://www.centerforsocialmedia.org/sites/default/files/Battle_for_Reality3.pdf (17 December 2012).
- Bakir, V. (2010) *Sousveillance, Media and Strategic Political Communication: Iraq, USA, UK*, Continuum, London.
- Baym, G. & Shah, C. (2011) 'Circulating struggle', *Information, Communication & Society*, vol. 14, no. 7, pp. 1017–1038.
- Bennett, W. L. (1998) 'The uncivic culture: Communication, identity, and the rise of lifestyle politics', *PS: Political Science & Politics*, vol. 31, no. 4, pp. 741–761.
- Bennett, W. L. (2003) 'Communicating global activism: Strengths and vulnerabilities of networked politics', *Information Communication and Society*, vol. 6, no. 2, pp. 143–168.
- Bigsteelguy4 (2011) 'I AM NOT MOVING – Short film – Occupy Wall Street' (videorecording), 11 October, [Online] Available at: <http://www.youtube.com/watch?v=RGRXCgMdz9A> (17 December 2012).
- Bimber, B. (2003) *Information and American Democracy: Technology in the Evolution of Political Power*, Cambridge University Press, Cambridge.
- Bimber, B., Flanagan, A. J. & Stohl, C. (2005) 'Reconceptualizing collective action in the contemporary media environment', *Communication Theory*, vol. 15, no. 4, pp. 365–388.
- bohemia500 (2010) 'Talking Heads – Don't Worry About the Government' (videorecording), 27 May, [Online] Available at: <http://www.youtube.com/watch?v=0ZYHP6IBoac> (17 December 2012).
- Bruns, A. & Burgess, J. (2011) 'The use of Twitter hashtags in the formation of ad hoc publics', paper presented at the European Consortium of Political Research Conference, Reykjavík, 26 August 2011.
- Burgess, J. & Green, J. B. (2009) *YouTube: Online Video and Participatory Culture*, Polity Press, Cambridge.
- Castells, M. (2012) *Networks of Outrage and Hope: Social Movements in the Internet Age*, Polity Press, London.
- channel4 (2011) 'Evil Kweevil | Ep1: Evil | Comedy Blaps' (videorecording), 11 November, [Online] Available at: <http://www.youtube.com/watch?v=U3Od2n1fGwE> (17 December 2012).
- Davies, L. (2011) 'Occupy movement: city by city crackdowns so far', *Guardian*, 15 November, [Online] Available at: <http://www.guardian.co.uk/world/blog/2011/nov/15/occupy-movement-police-crackdowns> (17 December 2012).
- Earl, J. & Kimport, K. (2011) *Digitally Enabled Social Change: Activism in the Internet Age*, MIT Press, Cambridge, MA.
- Ekdale, B. (2011) 'Media activism, youth culture and human rights campaigns for the MTV generation', in *Communication, Culture, and Human Rights in Africa*,

- eds B. Musa & J. Domatob, University Press of America, Lanham, MD, pp. 133–152.
- Elmer, G., Curlew, A. & McKelvey, F. (2008) ‘Video politics: Typologies of user-generated content’, paper presented at the annual convention of the International Communication Association, Montreal, Canada, May.
- Fulk, J., Flanagin, A. J., Kalman, M., Monge, P. R. & Ryan, T. (1996) ‘Connective and communal public goods in interactive communication systems’, *Communication Theory*, vol. 6, pp. 60–87.
- Giddens, A. (1991) *Modernity and Self-identity: Self and Society in the Late Modern Age*, Stanford University Press, Stanford, CA.
- Gillespie, T. (2010) ‘The politics of ‘platforms’’, *New Media & Society*, vol. 12, no. 3, pp. 347–364.
- Gregory, S., Caldwell, G., Avni, R. & Harding, T. (2005) *Video for Change: A Guide for Advocacy and Activism*, Pluto Press, Ann Arbor, MI.
- Holcombe, J. (2011) ‘PEJ News Cover Index: Nov 14–20, 2011. Biggest week yet for Occupy Wall Street Coverage’, Pew Research Center’s Project for Excellence in Journalism, [Online] Available at: http://www.journalism.org/index_report/pej_news_coverage_index_november_1420_2011 (17 December 2012).
- Horwatt, E. (2009) ‘A taxonomy of digital video remixing: Contemporary found footage practice on the Internet’, in *Cultural Borrowings: Appropriation, Reworking, Transformation*, ed. I. R. Smith, University Park, Nottingham, UK, Scope, An Online Journal of Film and Television Studies, pp. 76–91.
- Jenkins, H. (2003) ‘Quentin Tarantino’s Star Wars? Digital cinema, media convergence, and participatory culture’, in *Rethinking Media Change: The Aesthetics of Transition*, eds D. Thorburn & H. Jenkins, The MIT Press, Cambridge, MA, pp. 281–313.
- Jigowatts (2006) ‘Working Class Hero – John Lennon’ (videorecording), 9 October, [Online] Available at: <http://www.youtube.com/watch?v=njG7p6CSbCU> (17 December 2012).
- Johnfnord (2011) ‘Mad as hell – We are the 99%’ (videorecording), 5 October, [Online] Available at: <http://www.youtube.com/watch?v=Cb918cLPq7k> (17 December 2012).
- Kahn, R. & Kellner, D. (2004) ‘New media and Internet activism: From the ‘Battle of Seattle’ to blogging’, *New Media & Society*, vol. 6, no. 1, pp. 87–95.
- katyabram (2011) ‘Occupy DC: Keeping it classy’ (videorecording), 6 November, [Online] Available at: <http://www.youtube.com/watch?v=Lv5HW-gvn-4> (17 December 2012).
- Lotan, G., Graeff, E., Ananny, M., Garrney, D., Pearce, I. & Boyd, D. (2010) ‘The revolutions were tweeted: information flows during the 2011 Tunisian and Egyptian revolutions’, *International Journal of Communication*, vol. 5, pp. 1375–1405.
- Mann, S. (2004) “Sousveillance”: inverse surveillance in multimedia imaging. *Proceedings of the 12th annual ACM international conference on Multimedia*, ACM, New York, NY, pp. 620–627.

- Mann, S., Nolan, J. & Wellman, B. (2003) 'Sousveillance: Inventing and using wearable computing devices for data collection in surveillance environments', *Surveillance & Society*, vol. 1, no. 3, pp. 331–355.
- McLeod, D. M. & Hertog, J. K. (1999) 'Social control and the mass media's role in the regulation of protest groups: The Communicative Acts Perspective', in *Mass Media, Social Control and Social Change*, eds D. Demers & K. Viswanath, Iowa State University Press, Ames, IA, pp. 305–330.
- OCCUPYTV99 (2011) 'Occupy Berkeley 'Cops hit us with batons in stomachs' YouTube' (videorecording), 10 November, [Online] Available at: <http://www.youtube.com/watch?v=EhWYQtE1L1M> (17 December 2012).
- Papacharissi, Z. & Oliveira, M. F. (2012) 'Affective news and networked publics: the rhythms of news storytelling on #Egypt', *Journal of Communication*, vol. 62, pp. 266–282.
- Pingree, R. J. (2007) 'How messages affect their senders: A more general model of message effects and implications for deliberation', *Communication Theory*, vol. 17, pp. 439–461.
- puppydogg9 (2011) 'Occupy Miami 10-15-2011 at Bayfront Park' (videorecording), 4 November, [Online] Available at: http://www.youtube.com/watch?v=yy_RHRBb3ng (17 December 2012).
- Rheingold, H. (2002) *Smart Mobs: The Next Social Revolution*, Basic Books, New York.
- Riffe, D., Lacy, S. & Fico, F. G. (2005) *Analyzing Media Messages: Using Quantitative Content Analysis in Research*, Routledge, New York.
- Seegerberg, A. & Bennett, W. L. (2011) 'Social media and the organization of collective action: using Twitter to explore the ecologies of two climate change protests', *The Communication Review*, vol. 14, pp. 197–215.
- Theocharis, Y. (2012) 'The wealth of (Occupation) networks? Communication patterns and information distribution in a twitter protest network', *Journal of Information Technology and Politics*, DOI 10.1080/19331681.2012.701106.
- Thorson, K., Ekdale, B., Borah, P. & Namkoong, K. (2010) 'YouTube and Proposition 8: A case study in video activism. Information', *Communication & Society*, vol. 13, no. 3, p. 325.
- Van Zoonen, L., Vis, F. & Mihelj, S. (2010) 'Performing citizenship on YouTube: activism, satire and online debate around the anti-Islam video Fitna', *Critical Discourse Studies*, vol. 7, no. 4, pp. 249–262.
- videoactivistnetwork (2011) 'Occupy Wall Street over John Lennon's Power to the People' (videorecording), 8 October, [Online] Available at: <http://www.youtube.com/watch?v=ngROsh24UdQ> (17 December 2012).
- weprez (2011) 'OCCUPY WALL STREET PROTESTERS VIOLENTLY ATTACKED BY POLICE (AGAIN!) – PEPPER' (videorecording), 15 November, [Online] Available at: <http://www.youtube.com/watch?v=70QzGFWumZQ> (17 December 2012).
- Whitcombe, D. & Slauson, M. (2011) 'Police take down Occupy LA camp; arrest nearly 300', *Reuters*, 20 November, [Online] Available at: <http://www>.

reuters.com/article/2011/11/30/us-usa-protests-idUSTRE7AT0FO20111130 (17 December 2012).

Whiteman, D. (2004) 'Out of the theaters and into the streets: A coalition model of the political impact of documentary film and video', *Political Communication*, vol. 21, no. 1, pp. 51–69.

Wolf, N. (2011) 'The shocking truth about the crackdown on Occupy', *Guardian*, 25 November, [Online] Available at: <http://www.guardian.co.uk/commentisfree/cifamerica/2011/nov/25/shocking-truth-about-crackdown-occupy> (17 December 2012).

yahshay (2011) 'OWS video: Thanksgiving night @ Zuccotti Park' (videorecording), 25 November, [Online] Available at: http://www.youtube.com/watch?v=2_iHT-tsOxs (17 December 2012).

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Appendix 1. Coding instructions

- (1) *Video removal.* Is the video available for coding? (Yes/ No, it has been removed/ No, it is marked private/No, other reason).
- (2) *Identifying Occupy videos.* Is this a video explicitly about the Occupy movement? (Yes/No) If there is any mention of Occupy in the content of the video or in the metadata, choose YES. If the video does not mention Occupy, but you could see how it might be relevant to a conversation about Occupy, you should still choose NO.
- (3) *Identifying Occupy locations.* Is this video linked to a specific occupation or in some other way to a specific location? (Yes/No) Look for: protest footage; signs; video headline, description or metadata related to a specific location; visuals of someone at an occupation. NOTE: Use of the OWS hashtag is not sufficient reason to believe the video is linked to the NYC occupation. Videos of protests should ALWAYS be coded yes.
 - (a) If yes, what location(s)?
- (4) *Occupy-related features.*
 - (a) Does the video take place at an occupation General Assembly? (Yes/ No)
 - (b) Does the video include use of The People's Mic? (Yes/No)
 - (c) Do police appear in the video? (Yes/No) Can be visual presence or an audio mention.
 - (d) Is this primarily a music video? (Yes/No)
- (5) *Content origin.* Does the video contain primarily original content or is some of the audio/video borrowed? Borrowed: At least some of the content is CLEARLY

identifiable as belonging to another source (i.e. a news logo is present or the video includes footage from a movie or TV show or pictures are identified with a source). In general, if this is a video you think would be classified as a mash-up or remix, choose borrowed. Original: Anything else. This category is reserved for videos that you estimate to contain at least 90 per cent original footage. Be sure to check the user name to see if it matches the content (CBS content posted by CBS News is original, not borrowed).

(a) For *borrowed* content:

(i) Is the borrowed content user-edited? (Yes/No) If yes, what degree of user editing is there? Low level: Adding a branded intro, watermark on the screen, 'check out this video' screen. Introducing or ending in a way that maintains the flow and integrity of the clip itself. High level: Change to the structure of the clip, editing together disparate pieces, adding music or other audio content.

(ii) Where did the borrowed content come from? Choose the option that best characterizes the largest amount of borrowed content.

(1) Rally: Video of a rally or protest

(2) Speech: Footage of a speech WITHOUT a rally – press conferences, politician speaking to legislative body

(3) Church: Footage of a church service – takes place in a religious building, presence of a religious figure (pastor, priest, etc.), bibles, crosses, worship music, etc.

(4) News video: Video content is dominated by clips from a news organization or multiple news organizations. Look for identification of a network, news set, correspondent commentary

(5) Entertainment content: Video content is dominated by clips or stills from the entertainment world, such as a talk show (Oprah, Daily Show, Letterman), concert performances, or dramatic television (West Wing, Seinfeld)

(6) Advertisement: Video content is an ad that clearly was borrowed – you can tell it aired on television. (NOTE: If you cannot determine that the ad was borrowed, then code advertisement as original – scripted.)

(7) Music video or song: Primarily borrowed from a music video or song

(8) Other

(b) For *original* content:

(i) Where did the original content come from?

(1) Scripted: Produced by its creator (not necessarily the poster, though it could be). May include actors, planned or scripted address to the camera.

(2) Filmed live event: May include footage from press conferences, speeches, rallies (NOTE: There may be editing or voiceovers, but if footage is of a live event (press conference, hearing, protest, etc.) it belongs in this category.) HOWEVER, if the person filming the live event has a substantial amount of face

time, code as monologue. Original news footage will most often fall into this category.

(3) Monologue: Webcam speech, extemporaneous, can include more than one person. Lacks a script.

(4) Interview only: Can be amateur or professional, casual, journalistic or academic. NOTE: mark this category only if the video is at least 75 per cent interview content.

(5) *Production quality*. Please assess the production quality. Amateur: No editing or choppy cuts. Pro-Am: Steady camera work, some editing Professional: Multiple camera angles, studio production, clean editing

(6) *Use of cell phone*. Does the video appear to be shot with a cell phone or other handheld camera? (Yes/No) Look for shaky video, no use of a tripod.

(6) *Video genre*. Please classify this video into one of the following genres. This is a holistic judgment. Choose the category that BEST fits the majority of video content. (Adapted from Van Zoonen *et al.* 2010)

(a) Testimonial or vlog: Individual speaking about his or her reaction to Occupy or topics related to the Occupy movement

(b) Cut and mix: Self-produced video consisting of self-made, or existing footage, pictures, images, words and sound, combined into a new 'text'

(c) Cut and paste: Straightforward copy of existing footage from news, current affairs, documentary, comedy, drama and other professionally produced audiovisual material

(d) Tagging and jamming: Videos carrying 'Occupy' related tags that are intending to either (a) disrupt searches for Occupy-related content or (b) capitalize on the popularity of Occupy searches

(e) Public speech or sermon

(f) Original news footage or opinionated news footage: Includes mainstream journalistic content as well as Internet-only outlets (e.g. Pajamas Media) and citizen journalism

(g) Protest or occupation footage

(h) Other. Briefly describe