

# **Conflict Imagery in a Connective Environment: Audiovisual Content on Twitter**

## **Following the 2015/2016 Terror Attacks in Paris and Brussels**

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### **Abstract**

Acute crisis events ranging from natural disasters to terrorist incidents now tend to generate an almost immediate response from social media users. This is especially pronounced on Twitter, due to that platform's specific affordances as a particularly open and real-time medium. While analyses of such events have increased over recent years, we still understand relatively little about the way in which audiovisual materials relating to such crises are circulated and what they contribute to processes of witnessing. This is important, however, in an increasingly visual age when audiovisual material tends to be more widely viewed and shared than plain-text updates, and thus has a greater potential to influence viewers' interpretations of an event. To address this gap in our understanding, this article investigates the distribution dynamics of audiovisual content on Twitter in the immediate aftermath of terror attacks in Paris and Brussels. Results point to the importance of broadening conceptualisations of conflict-related visuals and the ongoing relevance of affective content in such material. Further, the article argues that contexts of time and space are crucial to consider, as is the role that individual actors – both human and non-human – play in disseminating such content.

### **Introduction**

Digital participatory technologies have played an important role in reshaping the public's understanding of news events that were traditionally framed through mass media, enabling discourses that at times counter mainstream media narratives. One particularly important arena

for this is the coverage of acute crisis events, such as terror attacks, disasters or war, also known as “conflictual media events” (Hepp & Couldry, 2010). Aided by the growing availability of smartphones and image, audio, and video hosting platforms, audiovisual materials have become particularly important during such events, supplementing text-based breaking news updates, rumours, and commentary. Bystanders and journalists can now share eyewitness footage directly from the scene of a disaster, enabling rapid circulation by others, geographically removed, of further audiovisual materials that express support, sympathy, disgust, or defiance. Such circulation may constitute a new kind of eyewitnessing (Vis et al., 2014; Mortensen, 2015b), but we still know relatively little about the role of audiovisual features in the formation of “*ad hoc* publics” around such events (Bruns and Burgess, 2015).

This article closely examines audiovisual content circulated on Twitter in the immediate aftermath of terrorist attacks in Paris and Brussels in 2015/2016. Paying attention especially to the most widely shared of these materials, we document and evaluate their ‘dissemination careers’, tracing their distribution over time, and distinguishing between different types of content; between briefly shared and consistently redistributed materials. Emerging from this are new insights that expand and reconceptualise existing work in the field of digital or connective witnessing (Chouliaraki, 2015; Mortensen, 2015b).

## **Background**

Media and communications research on the visual has gained considerable popularity in recent years as images serve an important ideological role as “expressions of a collective historical consciousness” (Tomanić Trivundža, 2004) that can define how publics interpret and remember particular events. The visual coverage of conflictual media events has thus become a fruitful field for scholarly research (see, for example, Chouliaraki, 2006; Cottle, 2006; Hanusch, 2010; Zelizer, 2010). Much of this work, however, has focussed on traditional media coverage and

newspapers' and television's construction of visual narratives of such events through conventional photography.

Participatory media technologies have challenged journalistic accounts of news events, leading to a far more complex ecosystem for news. Recent scholarship has examined the role of citizen reporting and the changing dynamics that participatory technologies introduce to how such events are witnessed (Allan, 2013; Chouliaraki, 2013a, 2015; Pantti, 2013). Mostly, however, such studies have continued to focus on how eyewitness reports are remediated in mass media, rather than on their own connectivity in social media (Mortensen, 2015a).

According to Peters (2001, p. 709), witnessing could in a narrow sense be seen as necessitating an observer's presence at an event that entailed both a passive ('seeing') and an active ('saying') component, where what one saw authorized what one said. The arrival of participatory technologies, in particular, has meant that the divide between active and passive witnessing is now much more blurred, as "there hardly appears to be a passive act of observing prior to the active, mediated act of bearing witness" (Mortensen, 2011, p. 9). The connectivity resulting from social media enables online publics to act as eyewitnesses whose accounts are not framed by mainstream media and who thus change the nature of conflictual media events (Mortensen, 2013).

Such processes can be understood as "connective witnessing": here, "participants contribute to the flow of information from man-made and natural catastrophe by producing and distributing images on a large scale" (Mortensen, 2015b, p. 1394). This view of witnessing as a "participatory, reflective act by individuals, who, by creating and circulating media content, contribute to current cultures of connectivity", allows us to more deeply enquire into overlaps between witnessing and political participation by everyday people (Mortensen, 2015b, p. 1403). Twitter is of particular relevance here, due to the platform's ability to respond quickly to developing events, allowing for the speedy establishment of such connective witnessing

practices in “*ad hoc* publics” (Bruns and Burgess, 2015) or “*impromptu* publics” (Mortensen, 2015b).

Thus, examining how such processes are enacted in social media in their own right is important, rather than how they are remediated in traditional media; after all, these platforms exhibit their own social media logic (van Dijck and Poell, 2013) that is separate from mass media logics. And while some research now exists on social media witnessing, this work has tended to focus on the potential of hashtags and other textual features in coordinating *ad hoc* publics, rather than on images.

The online sharing of images of atrocities has challenged dominant journalistic practices, wresting control over what images the public witness away from news organisations. This affects the variety of content available online, eroding established boundaries related to eyewitness images (Mortensen, 2015c); images that were previously censored in the media are now accessible from alternative sources (Cottle, 2006) and can serve important political purposes (Matheson and Allan, 2009).

The aesthetics of such amateur imagery can enhance emotional proximity for audiences, compared to the professional aesthetics of a desensitised and depoliticised photojournalism (Pantti, 2013). Images of distant crises can strongly engage audiences through authenticity and affectivity, while disengagement occurs when images are perceived to be unethical (Ahva and Hellman, 2015). However, affectivity or emotionality can also lead to 'ironic solidarity' Chouliaraki (2013a), which is more about recipients' self-image than concern for suffering others.

Research engaging specifically with Twitter users' sharing practices of audiovisual material about crises is still emerging (see, for example, Murthy, 2011; Sarcevic et al., 2012; Bruns et al., 2012). Analyses of the 2011 UK riots noted that many images circulating on Twitter during the riots were produced through digital cameras, while others were appropriated from secondary sources, such as television screenshots, and circulated from afar (Vis et al., 2012). The latter

practices, understood as remote witnessing, “attest to the multifarious ways Twitter users create and mobilise images as means of communicating their experiences and thoughts” (Vis et al., 2012, p. 396).

Despite the relative scarcity of visual studies, textual analyses provide useful insights. Studies of the spread of crisis news on Twitter have found “shareworthiness” factors (Trilling et al., 2016) that are related to news values established in mainstream journalism, but may also be different, such as the expression of solidarity and the maintenance of ambient news flows through continuous updates, even when redundant. Importantly, such news streams about crises can also be understood as affective as they blend opinion, fact, and emotion (Papacharissi & de Fatima Oliveira, 2012; Papacharissi, 2014).

The combination of scholarship on social media with conceptual insights from studies on witnessing and distant suffering adds the former’s quantitative approach to the qualitative frameworks of the latter. Studies of witnessing have so far largely taken qualitative approaches, while ‘big data’ methodologies to study social media provide a more comprehensive understanding of how conflict visuals are distributed across global networks, which visuals are dominant, and what influence individual users have. A combination of both can examine who produces so-called “instant news icons” – defined as “selected images, which through rapid and wide dissemination across media platforms become frames of reference for a large, sometimes even global, public” (Mortensen, 2016). Their distribution careers also provide more information about the dynamics of the publics that form around such images.

The case studies presented here represent a type of conflictual event that has attracted intense contemporary mainstream and social media interest: major terrorist attacks in Paris in 2015 and in Brussels in 2016. We take a comparative approach as the specific dynamics of *ad hoc* communication on Twitter can diverge substantially across time, space, and topic (Bruns et al. 2016). The two key events both garnered vast mainstream media coverage as well as debate in social media; both caused a substantial number of civilian deaths; and both were perpetrated in

the name of the terrorist organisation “Islamic State”; but they happened at times and in locations sufficiently different to attract potentially diverging social media audiences.

The Paris attacks commenced in the late evening of Friday 13 November 2015, and targeted the iconic Bataclan theatre during a rock concert, the Stade de France football stadium during an international football match, and several street cafés. They aimed at entertainment and sporting venues, and therefore at Paris’s status as an international leisure destination; a substantial affective response from an international public could thus be expected. By contrast, the Brussels attacks took place in the morning of Tuesday 22 March 2016, and focussed on key transport infrastructure: the international airport at Zaventem, and a central metro station at Maalbeek. They targetted comparatively ordinary, everyday commuters and travellers, with added international significance provided by Brussels’s role as the European Union’s administrative centre. Here, a less strongly affective response could be expected. The timing of each attack also means that a different subset of the global Twitter userbase would have been active in the immediate aftermath of each event: these populations’ diverging experiential and affective proximity to each city, and differing cultural and communicative practices in responding to terrorism, are likely to influence their social media responses.

We are therefore interested, first, in identifying the basic parameters of social media activity around visuals related to these events: in other words, what forms of audiovisual material are most popular on Twitter following conflictual events? Secondly, in light of the literature on witnessing and distant suffering, what role do affect, emotion and solidarity play in the dissemination of audiovisual material related to conflictual events? Further, given the differing circumstances of the two attacks, what impact may the different timing and context have on the dissemination careers of visuals related to conflict? Finally, on a broader scale, what is the role of conflict visuals as forms of connective witnessing?

## **Methodology**

Studies of communicative activity on Twitter have had a pronounced emphasis on examining the role of hashtags (Burgess & Bruns, 2015), an approach that potentially ignores numerous tweets on the same topic that fail to include a specific hashtag. For the present study, we therefore captured tweets mentioning the key locations targeted in each attack. While still not encompassing all the tweets related to these attacks, it is likely that a substantial majority of the tweets sharing relevant audiovisual material also mentioned Paris, Brussels, and some of the more specific locations. We therefore captured tweets containing the terms ‘Paris’ and/or ‘Bataclan’ for the Paris attacks, while we used ‘Brussels’, ‘Brussel’, and ‘Bruxelles’ for the Brussels attack. Tweets were captured using the *Twitter Capture and Analysis Toolkit (TCAT)* (Borra & Rieder, 2014).

Still, these keywords would not have captured tweets using variations of these location names in other languages or in non-Latin scripts. Further, *TCAT* utilises the standard Twitter Application Programming Interface (API), and is subject to its limitations that restrict results to one per cent of the total global throughput of tweets at any given point in time, which was easily exceeded given the immense attention paid to the attacks. While our data therefore systematically underestimate the true *volume* of activity, the largely random process by which the Twitter API omits matching tweets exceeding the one per cent limit means that the overall *patterns* in our data still closely represent the dynamics of the full Twitter response.

For the present study, we focus on two periods in the immediate aftermath of each event: the fourth and seventh hour after the first attack (Table 1). These periods are close enough to the initial events to still contain considerable first- and second-hand eyewitness material, yet also far enough removed from the initial reporting of the events themselves to allow for the emergence of audiovisual content that responds to the attacks to express affective reactions.

	<b>Paris</b>		<b>Brussels</b>
<i>First attack</i>	13 Nov. 2015, 21:16 CET: Stade de France bombing	<i>First attack</i>	22 Mar. 2016, 07:58 CET: Brussels airport bombing

<i>Analysis period 1</i>	14 Nov. 2015, 00:16-01:15 CET	<i>Analysis period 1</i>	22 Mar. 2016, 10:58-11:57 CET
<i>Analysis period 2</i>	14 Nov. 2015, 03:16-04:15 CET	<i>Analysis period 2</i>	22 Mar. 2016, 13:58-14:57 CET

*Table 1: periods chosen for analysis*

During each of the periods chosen, access to the Twitter API was rate-limited, resulting in 154,000 to 161,000 tweets for each time period. We identified any URLs included in the tweets, and resolved these to their final destinations. In each case, the vast majority of URLs pointed to *twitter.com*, indicating the dominance of Twitter’s own audiovisual embedding functions, prompting us to focus exclusively on *twitter.com* URLs for further analysis. We selected the 50 most-circulated images during each period, and submitted them to qualitative review and coding. The aim was to reconstruct the likely experiences of Twitter users following the attacks, and to examine their on-sharing choices. Our analysis therefore draws predominantly on a close reading of the audiovisual content shared, an examination of its origins, and an analysis of its visibility over time. While sensitised by the literature on witnessing in a digital age, our initial coding process remained open so as to encompass all potential forms of visual content. Over time, we thematically arranged the content, arriving at a number of categories.

## **Analysis and Discussion**

### *Intent*

When examining the apparent intent of the audiovisual content being shared most prominently on Twitter, two major categories emerged: affective audiovisual materials, expressing sympathy and support for the victims of the attack as well as defiance and anger towards the perpetrators; and news content, consisting of first- and second-hand images of the attacks and their aftermath (Table 2). Here, we draw on Papacharissi’s discussion of “affective contagion” (2014: 19) as a key point of distinction: where news content merely disseminates information about the fact that an event has happened, affective content also seeks, implicitly or explicitly,

to impart a certain emotional response to the recipient; affect thus suggests “the potential for *emergence*” (2014: 13) of shared sentiment towards the event amongst the online community of viewers. This is not to claim that news is always entirely free of affect, of course; the lines are increasingly blurred. In coding, we thus focussed only on the features of the immediate audiovisual content (including subject matter, image selection, visual style, and production quality) as they would have been perceived by a Twitter user at the time.

Other, considerably less prominent categories included information (such as contact information for support services); discursive content (often in the form of screenshots of other users’ statements from Twitter and Facebook); political statements; and offers of help for victims. After the Brussels attacks, we also identified a number of news reports on the affective audiovisual content shared by social media users, which we discuss separately below. In each case, several of the top 50 Twitter URLs could no longer be viewed (because the tweets had been deleted, or because the sender’s account had been deleted or set to private); additionally, five of the most widely shared Twitter URLs relating to the Brussels attacks linked to tweets rather than audiovisual content, and were therefore excluded from further analysis.

<b>Paris analysis period 1</b>				<b>Paris analysis period 2</b>			
<i>Intent</i>	<i>URLs</i>	<i>Tweets</i>	<i>Tweets /URL</i>	<i>Intent</i>	<i>URLs</i>	<i>Tweets</i>	<i>Tweets /URL</i>
Affective	25	6,405	256	Affective	38	14,443	380
News	16	2,152	135	Information	5	1,481	296
unresolvable	5	604	121	unresolvable	5	1,675	335
Discursive	1	177	177	News	1	276	276
Information	1	160	160				
Placeholder	1	132	132				

<b>Brussels analysis period 1*</b>				<b>Brussels analysis period 2*</b>			
<i>Intent</i>	<i>URLs</i>	<i>Tweets</i>	<i>Tweets /URL</i>	<i>Intent</i>	<i>URLs</i>	<i>Tweets</i>	<i>Tweets /URL</i>
News	23	5,748	250	News	18	7,157	398
Affective	14	4,076	291	Affective	16	4,265	267
unresolvable	5	667	133	News report on affective responses	4	698	175
Information	3	583	194	unresolvable	4	741	185

Discursive	1	141	141	Discursive	2	465	233
News report on affective responses	1	103	103	Statement	1	110	110
				Offer of help	1	118	118

*Table 2: Intent of audiovisual materials being shared during the analysis periods (\* Brussels: 2 non-audiovisual Twitter URLs removed from AP1; 3 from AP2)*

Confirming past studies of digital or connective witnessing (Chouliaraki, 2015; Mortensen, 2015b), affect plays an extremely important role, along with news media images recirculated through social media. On average, such material also attracts the greatest number of tweets per item. However, we also see notable differences between the two events: following the Paris attacks, affective content dominates, while news content disappears almost completely during the second period. After the Brussels attacks, news content remains dominant over both analysis periods.

This divergence may be related to the fact the Paris attacks occurred in the evening, and the periods of analysis represent times after midnight in the Central European timezone. Other than those staying up to follow the events as they unfolded, few European Twitter users would have been awake to engage; it is more likely that Twitter users in American timezones would have participated in sharing these audiovisual materials. Conversely, the Brussels attacks commenced in the morning, and our timeframes lie before and after noon; here, European and African Twitter users would likely have been especially prominent.

Such differences in the active populations of Twitter users for each event, and in these populations' affinity to the scene of the attacks, may account for these results. American users following the Paris attacks may not have been interested as closely in the details of the news emerging from Paris, and/or may have followed traditional media rather than Twitter for more information. For them, Twitter would have been predominantly a vehicle to express solidarity, by retweeting and thus endorsing affective audiovisual content. European users following the Brussels attacks, by contrast, may have focussed more on understanding the nature of the

attacks (and sharing their understanding by retweeting news-related audiovisual materials); this interest in the attacks as a breaking news event does not preclude a simultaneous affective response (and affective audiovisual content is still prominent for Brussels), but it does shift the balance. This points to the importance of geographic distance, timing, and audience in the analysis of connective witnessing.

### *Country References and Connective Memory*

This geopolitical reading is also supported by an analysis of the most prominent countries featured in the audiovisual content. Most of the material with a news intent foregrounds the attack locations, but the affective content also prominently references other countries in expressing solidarity. After the Paris attacks, five of 25 affective audiovisual items during AP1, and 19 of 38 during AP2 reference American countries (the USA, Brazil, and Canada, with the USA most prominent); for Brussels, ten of 14 affective items during AP1, and six of 16 items during AP2 reference other European nations (here especially France, drawing an affective connection between the two attacks).

Prominent in this context are two cross-national images that demonstrate connective memory in action (Hoskins, 2011). After the Paris attacks, users share a photo of the U.S. flag draped in front of the Eiffel tower, shot on the tenth anniversary of the 9/11 attacks; this photo appears several times (in apparently unrelated tweets) in our lists of the 50 most shared audiovisual items in each period (AP1: 735 tweets; AP2: 1,699). But the utilisation of participatory technologies for the contestation of connective memory (Mortensen, 2016) is demonstrated in some of the responses to these posts, expressing criticism over the placement of the flag on the ground: some U.S. users regard this as an affront to their national pride. Conversely, after the Brussels attacks a drawing by French newspaper cartoonist Plantu, expressing shared grief and sympathy, similarly appears in multiple image URLs (AP1: 2,987

tweets; AP2: 2,033; fig. 1). Contestation here occurs in critical comments highlighting the apparent lack of similar solidarity with the victims of terrorist attacks in the Middle East.



*Fig. 1: Prominent cross-national image content with affective intent (times in all screenshots are in Australian Eastern Standard Time – UTC+10)*

### *Subject Matter*

The subject matter of the audiovisual content is generally closely linked with each item's intent: the first analysis period after the Paris attacks prominently features drawings and photos of Paris landmarks, as well as images containing text such as "Pray for Paris" or statements from political leaders condemning the attacks; the second is dominated by photos of (mostly North American) landmarks lit up in the French national colours. News-related items include screenshots of live television news coverage (the "remote eyewitnessing" described by Vis et al., 2014), as well as news and eyewitness photos and videos. Again, the focus on American imagery may be a function of the differing timings of the events and the analysis periods.

After the Brussels attacks, affective audiovisual items consist almost entirely of drawings and other artwork expressing sympathy for the victims. News-related items focus strongly on first-hand footage: during AP1, nine of 23 items are sourced from eyewitnesses, and another 8 appear to be from professional photographers; during AP2, eight of 18 news items represent professional footage, while four others originate from eyewitnesses. During AP2, however,

some audiovisual items that had originally been posted with affective intent are now also being remediated in news contexts (Chouliaraki, 2013b), as news organisations begin to report the affective social media response. Notably, such repurposed affective content is less widely disseminated by Twitter audiences than the original material: while the twelve affective artwork items identified during AP2 receive an average of 291 tweets each, the three originally affective artwork items reposted in the context of news stories gain only 158 tweets on average.

### *Account Types*

We further explored the types of accounts that specific audiovisual items had been posted from, and observed the average number of tweets that these accounts' content appeared in during our analysis periods. Perhaps unsurprisingly, news accounts represented a plurality of content originators for the top 50 audiovisual items in three of the four analysis periods (they are less prominent in AP2 following the Paris attacks). This demonstrates the continued prominence of leading journalism brands on social network sites (Newman et al., 2016, p. 9). Their leadership is especially pronounced in the case of Brussels, where almost half of the most shared audiovisual content was posted from news accounts; in Paris, 15 of 50 items during AP1 and eight during AP2 were posted by news accounts.

Unexpectedly, across each of the four analysis periods a range of Twitter bots also played prominent roles. Such sources accounted for eight and ten of the top 50 items during the two analysis periods following the Paris attacks, representing a plurality of originator accounts in AP2; following Brussels, they were less visible and accounted for only four and five items, respectively, yet still represented the next most prominent minority of account types after the news accounts. Ordinarily, these accounts post a steady, probably automated stream of ready-made amusing, engaging, arousing, or inspiring tweets to their followers; the content they posted in the immediate aftermath of the attacks suggests that such scheduled activity was temporarily suspended to post custom-made responses (overwhelmingly with affective intent)

to the attacks. This may indicate genuine sympathy with the victims; a more cynical reading – that the bot operators exploited an opportunity to post affective content which would be widely shared and thereby attract more followers – is also possible, however.

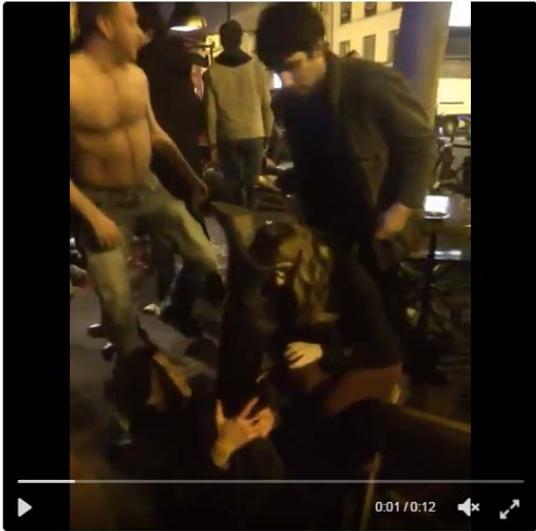
Bots add further complexity to the notion of connective witnessing, and their role will need to be addressed in future research. Witnessing appears inherently related to human agency, and while this may at first glance exclude technological actors such as bots, we recognise bots as increasingly important nodes in the complex networks established around online witnessing, due to their capabilities for amplifying the visibility of posts. Further, it would be overly simplistic to regard bots as simply non-human: our observations in the present case point strongly to human agency in their operation. As Bucher (2014) has shown, bots can at least serve a “para-social” role – and that role may well include connective witnessing practices as well.

Finally, ordinary users are present as content originators, but for the most part do not feature prominently. Given our focus on the top 50 URLs in each period, such ordinary accounts may be inherently structurally disadvantaged, of course: reaching comparatively low numbers of followers, it is unlikely that content posted by these users would be as widely shared as material featured on major news and bot accounts. Where ordinary users do appear prominently, they are either sources of immediate eyewitness footage, or posting especially poignant affective responses that manage to go viral at least to a limited extent (fig. 2). In AP1 following Paris, for instance, three separate eyewitness videos shared by such users gain some visibility; in AP2 an audience member’s video of singer Justin Bieber interrupting his concert to pray for the victims appears in several hundred subsequent tweets. For Brussels, content from ordinary users is even more scarce; here, an eyewitness photo of the destruction at Maalbeek metro station is shared over 600 times during AP1, and a screenshot of a Twitter conversation that critiques some commentators’ linking of the attacks with EU migration policy is most prominent during AP2. These user items again demonstrate the different affective responses: after Paris, a

majority of user-originated items in the top 50 are posted with affective intent, showing iconic Paris or world landmarks or related artwork to express sympathy; after Brussels, top user content almost exclusively contains eyewitness footage or material that thematises migration policy and Islamist terror. We suggest again that this indicates the different global Twitter audiences active during these timeframes.

**Gabigol .** @mushi93160 Follow

Wooooowww



RETWEETS 14,567 LIKES 4,088

7:48 am - 14 Nov 2015

**brit** @ALAYLMacoustic Follow

JUSTIN PRAYED FOR PARIS



RETWEETS 1,913 LIKES 1,368

12:28 pm - 14 Nov 2015

**alxdm** @alxdm Follow

Notre metro bien connu... Image choquante de #maelbeek ...



RETWEETS 2,882 LIKES 696

7:48 pm - 22 Mar 2016

**ChristianChristensen** @ChrChristensen Following

Best response to idiots like Katie Hopkins I've seen today...  
#Brussels #Bruxelles

**Katie Hopkins** @KTHopkins 35m  
Every one of you who said refugees are welcome, if you said 'let them in'. You are responsible for Brussels. And you still can't see.

448 retweets 793 likes

**Benjamin Bollen** @BenjaminBollen

@KTHopkins you do NOT get to speak for our city. Refugees are welcome, you are welcome to stay out #brussels

22/03/2016, 11:19

RETWEETS 2,532 LIKES 2,501

10:04 pm - 22 Mar 2016

Fig. 2: Prominent image content from ordinary users (top row: Paris, periods one and two; bottom row: Brussels, periods one and two)

### *Content Reposts*

This lack of prominence for ordinary user content should not be seen as an indication that Twitter's role in the direct eyewitnessing of breaking news events (Schiffers et al. 2014) is declining. Rather, the footage captured by eyewitnesses and posted to Twitter is likely to gain visibility only as it is republished by more influential accounts. Although the original image of the Maalbeek destruction posted by @alxdm (fig. 2, bottom left) was featured in only 662 tweets during AP1 of the Brussels attacks, for instance, through reposts it appeared at five additional top 50 URLs during the same period, and was almost certainly spread even further by other republishers. The identification of such potentially iconic images has been a concern for researchers of visual conflict news for some time (Hariman and Lucaites, 2007; Perlmutter, 1998), most recently also in the context of social media imagery (Mortensen, 2016).

Having so far treated each of the 50 most shared Twitter URLs for each of the four phases as representing a distinct content item, we now consolidate these images and videos into single items where they are identical or highly similar. This shows the shared genealogy of such items, to determine more clearly which audiovisual material was most visible. This consolidation requires a manual visual assessment of similarities and differences that is difficult to achieve with any accuracy using computational means. The content reposting we are concerned with here goes beyond the mere retweeting of existing audiovisual material. Rather, it results from an original image being downloaded from Twitter or a common external source, possibly modified, and reuploaded to Twitter to create a new post. It is usually impossible to reliably identify the original creator of the item from the tweet metadata alone; in our analysis we have drawn on tweeting timelines and @reply threads attached to tweets in order to infer the original source of each item.

The results indicate that following the Paris attacks, the most widely shared image is a sketch of the Eiffel Tower in the style of the famous anti-nuclear logo of the 1960s (fig. 3, top left).

This appears in a number of versions; most widely shared is a version by the account @therealbanksy (spelt with an uppercase I instead of the lowercase l), a fan account for graffiti artist Banksy; however, media coverage following the attacks suggests the image originated instead from @jean\_jullien (an account which has since been suspended, rendering the original image unavailable as well; Gonzalez, 2015). Perhaps due to the celebrity status borrowed from the actual Banksy, @therealbanksy's version of the image appeared in nearly 2,000 tweets during AP1 (the most-shared distinct URL during this period), while @jean\_jullien's image was shared only some 150 times. Other prominent images emerging from our consolidation process are: the photo of the U.S. flag draped in front of the Eiffel tower (fig. 1, left), and an aerial photo of Paris and the Eiffel tower at night posted especially by the photo bots @BiIlionaires and @SoReIatable (their use of an uppercase I, similar to @therealbanksy, may point to a common origin or operator for these three accounts).

During AP2, another affective photo is most prominent; it shows a night-time crowd on the streets of Paris, holding up illuminated letters spelling "Not Afraid" (fig. 3, top right). @replies to this image point out that it actually shows marchers protesting the January 2015 attack on the editorial offices of satirical magazine *Charlie Hebdo* (see Martinez, Orjoux and Jones, 2015). It is shared some 1,100 times in the form posted by ordinary user @stylinfunk (who claims the image is current), but also appears in posts by actor @RGerrardActor and religious bot @WhoToPrayFor. It remains unclear whether the five versions of this image are all inspired by the same post, or were independently sourced from news reports on the January marches.

In addition to this new image, two of the iconic images from AP1 reappear again: both the Jean Jullien sketch and the U.S. flag photo remain prominent. Indeed, while attention during AP1 was concentrated strongly on the sketch (2,900 tweets), with other images failing to attract more than 700 tweets, during AP2 the 2,300 tweets received by the "Not Afraid" photo are nearly matched by the Jean Jullien sketch (1,800 tweets) and the U.S. flag photo (1,700 tweets).

These patterns show the growing diversity of and attention to this affective content as Twitter activity shifts from breaking news coverage to reaction and evaluation.

**banksy**  
@therealbanksy

Peace for Paris



RETWEETS: 74,330 LIKES: 54,994

9:13 am - 14 Nov 2015

**jo**  
@stylinfunk

Paris right now... Truly remarkable #NotAfraid



RETWEETS: 32,639 LIKES: 44,728

10:43 am - 14 Nov 2015

**PLANTU**  
@plantu

LES ATTENTATS CE MARDI 22 MARS À BRUXELLES.  
(Le dessin du Monde)

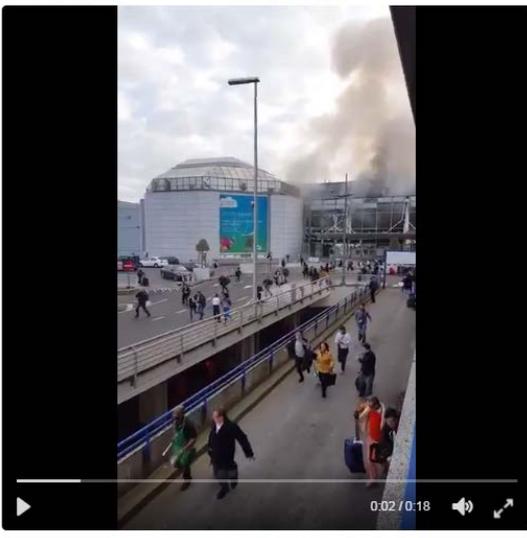


RETWEETS: 13,100 LIKES: 11,548

8:46 pm - 22 Mar 2016

**Anna Ahronheim**  
@AAhronheim

#BREAKING: Two loud explosions at #Zaventem airport in #Brussels



RETWEETS: 25,924 LIKES: 9,250

5:23 pm - 22 Mar 2016

Fig. 3: Most shared image content after consolidation (top row: Paris, periods one and two; bottom row: Brussels, periods one and two)

For Brussels, the most shared image during AP1 is the affective drawing by French newspaper cartoonist Plantu; however, with only 190 tweets it is not the original post by @plantu himself (fig. 3, bottom left) that is shared most widely, but a *Le Monde* (@lemondefr) post of the same image (fig. 1, right), featured in 1,400 tweets. Along with several other versions that appear in our top 50 for AP1, the image is featured in some 3,100 tweets; of these, most are posted by French news organisations and journalists. The other prominent audiovisual items during AP1 are eyewitness images and videos, however. @alxdm's photo of the Maalbeek carnage (fig. 2, bottom left) is reposted widely, and appears in some 1,600 tweets, while an eyewitness video of people fleeing Zaventem airport posted by journalist Anna Ahronheim (@AAhronheim) receives some 1,000 tweets.

Ahronheim's video (fig. 3, bottom right) – which in subsequent @replies she points out was sent to her via WhatsApp – rises to further prominence as the most shared audiovisual item in AP2; here, it receives a further 3,200 tweets itself, and is also featured in less widely shared posts by @CNN (as a still image excerpt) and bot @relatablelife (yet another account using the I/l spelling variation; since renamed as @femalepalns). It thereby replaces the Plantu drawing, which also received endorsement from French PM @manuelvalls and was increasingly featured in news reports about the affective social media response to the attacks. In total this results in 2,000 additional tweets sharing the image in its various versions. Finally, an eyewitness image from Zaventem airport, featured only in a @cnnbrk tweet, becomes the third most widely shared audiovisual item during AP2, with 1,200 tweets. These patterns, too, demonstrate the differences between Twitter's considerably more affective response to the Paris attacks, compared to the more news-related focus of the Brussels coverage.

Viewing these images as “instant news icons” (Mortensen, 2016), we are able to expand existing theoretical approaches to the circulation of such imagery. Importantly, our broader conceptualisation of audiovisual material in a connective environment allows us to go beyond the traditional focus on photographs. Clearly, the popularity of drawings and videos needs to

be taken into account in a re-conceptualisation of the concept. Especially relevant is the reappropriation of existing imagery, such as the redrawing of a culturally resonant peace icon developed some 50 years ago. Similarly, photographs of past events (the *Charlie Hebdo* marches) are re-used and presented as current, blurring affective, symbolic responses and observable, factual reality. Thus, while traditionally studies of news icons have focused on photographs, a broader conceptualisation of icons as audiovisual material that includes photographs, but also videos, drawings, graphics, and perhaps even images of text may expand research in this field.

The circulation of such iconic content in the immediate aftermath of both attacks demonstrates, in the first place, long-standing metonymic relations in which a select group of landmarks and cultural stereotypes stand in for the affected cities and countries as a whole. A similar metonymic relationship exists for the news images, in fact: depicting the scenes at key sites, these too rapidly become iconic representations for the attacks as a whole. Such processes of iconicisation are not new; arguably, however, the increasingly wide and rapid dissemination of news images (at first through satellite and cable TV, and now through social media) has further sped up the transition from ‘mere’ news image to iconic representation. On social media, in particular, the logic of metonymy blends with the logic of memes, enabling new and emerging metonymic images to be virally circulated to a potentially very large audience.

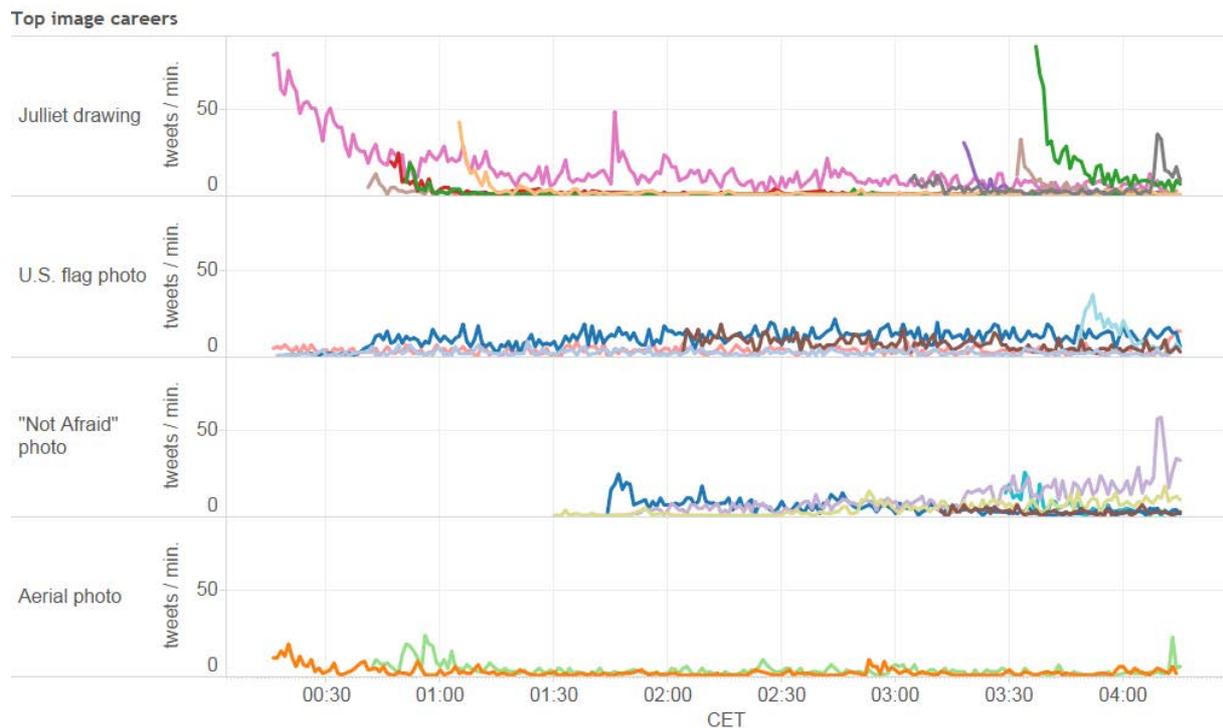
### *Dissemination Careers*

Finally, we focus on the leading audiovisual items identified here. Given the overlaps between the top three consolidated items during each analysis period, we are left with four distinct items – or news icons – for the attacks in Paris (the Jean Julliet drawing, the U.S. flag photo, the aerial photo of Paris, and the “Not Afraid” photo) and Brussels (the Plantu drawing, the Maalbeek eyewitness photo, the Ahronheim video, and the Zaventem photo). We now trace the volume per minute of tweets containing links to these eight audiovisual items, both during the two

analysis periods *and* during the hours in between. This provides us with an indication of their dissemination dynamics, showing just how transient they are, and of the roles that particular participants play in enabling impromptu publics around such images (Mortensen, 2016). Finally, we also distinguish the volume of tweets per minute that link to each specific version of a given audiovisual item; this points to the impact of new versions of these items being posted from specific accounts.

In the aftermath of the Paris attacks, the Julliet drawing is already shared widely by the time AP1 begins three hours after the first attack (fig. 4). This occurs predominantly in the form of @therealbanksy's tweet (but note that due to the subsequent suspension of @jean\_julliet's Twitter account, we have no reliable data on the volume of tweets sharing any versions of the image that were posted from that account). Other accounts join in sharing the image from time to time, but for the most part @therealbanksy's version is the most shared, even if its overall volume declines over time. This changes only towards the end of the period we have examined here, when rock band @falloutboy's repost of the image generates substantial new interest after 03:37 CET.

The U.S. flag photo, on the other hand, is shared fairly steadily throughout the entire timeframe. The version posted by politician @matluzon is most prominent, while another post by actor @AustinNichols also attracts attention after 02:04 CET. Meanwhile, the "Not Afraid" photo appears in our dataset only from 01:30 CET, in the version posted by @RGerrardActor; however, it is only once photo bot @Uber\_Pix at 01:44 and @stylinfunk at 01:46 post other versions of the photo that the volume of tweets sharing the image increases. Indeed, in this case we see a very gradual increase of attention to the version posted by @stylinfunk towards the end of the period observed here; the dynamics of image sharing in this case are almost the reverse of those observed for the Julliet drawing. Finally, the aerial photo of Paris, published by photo bots @Billionaires and @SoRelatable, generates only limited but relatively steady activity.



*Fig. 4: Dissemination careers of leading audiovisual items after the Paris attacks (colours indicate different versions of the same item)*

Following the Brussels attacks (fig. 5), the Plantu drawing is shared fairly steadily at first in the version posted by @lemondefr, with a number of other news and celebrity accounts also gradually joining in by sharing their own copies. @Plantu's version of the image appears only at 11:47 CET, and from then also receives significant attention (though rarely more than @lemondefr's earlier post). It is only towards the end of the period examined here that it becomes the most shared version of the drawing in each minute; this renewed attention may be due to its being retweeted by another more prominent account, most likely that of U.S. actress Anna Kendrick.

Meanwhile, the @Ahronheim video's visibility is driven almost exclusively by posts sharing Anna Ahronheim's original video. Notably, here too the limited initial visibility is boosted considerably at two distinct points on the timeline (13:11 and 14:00); this is again most certainly due to retweets of the original post by prominent other Twitter users. Other versions of the video eventually also appear – at first, @relatablelife's repost of the video itself, and later also

@CNN’s post of a still image from the video. Further, the Maalbeek eyewitness photo is already circulating in a number of variants at the commencement of our timeframe; @alxdm’s original post is being shared alongside another version by @News\_Executive, and news account @BelRTL’s post is beginning to attract attention as time passes. Each of these versions declines in visibility relatively quickly over time, however. This may indicate that the content had been in circulation for some time already, and that attention had begun to move on; however, the very graphic nature of the image – which appeared to show bodies and body parts amidst the debris – may also have limited the willingness of Twitter users to disseminate it further. Finally, as we have seen already, the Zaventem photo appears only in a single post by @cnnbrk; it therefore receives considerable attention once it is first posted by the news channel, but that attention also declines rapidly soon afterwards.

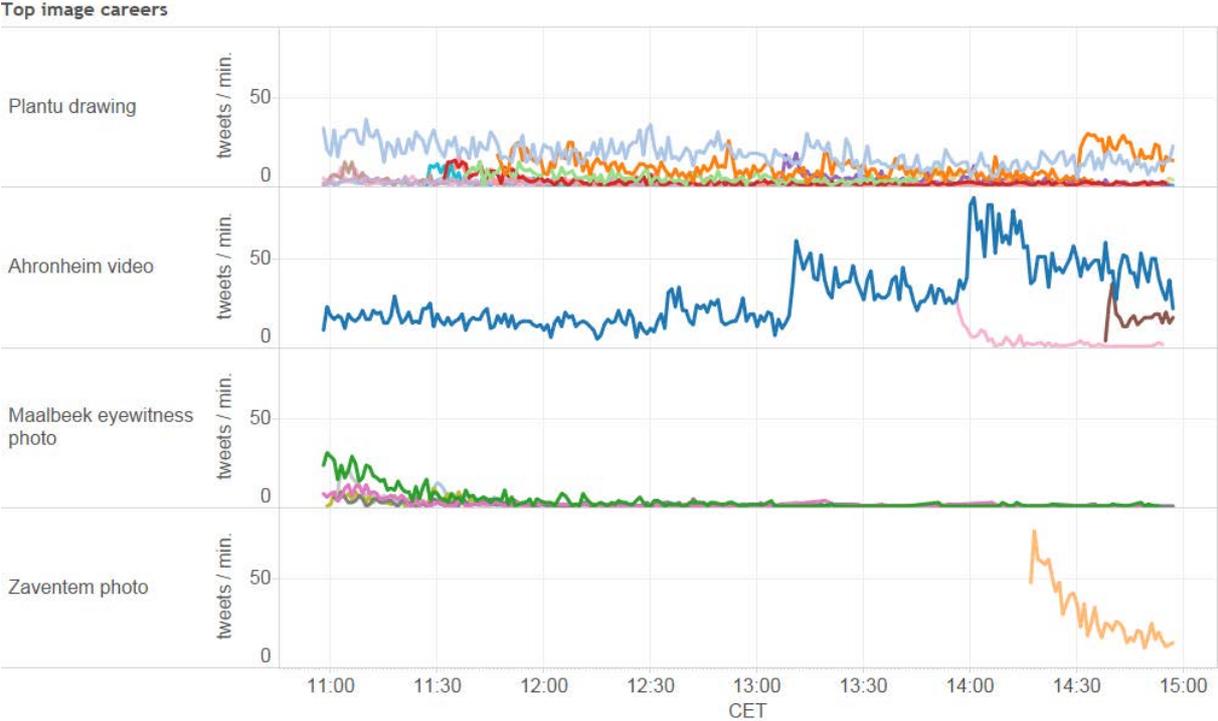


Fig. 5: Dissemination careers of leading audiovisual items after the Brussels attacks (colours indicate different versions of the same item)

**Conclusion**

Social media offer unprecedented opportunities for users to reshape public understandings of crisis events, contesting or reinforcing mainstream media frames. Our analysis of the dissemination of audiovisual material on Twitter contributes to ongoing conceptualisations of the role of such material in what Mortensen (2016) terms connective witnessing. Our results provide important insights not only for such conceptualisations, but also practical advice for future studies in this field.

First, and most importantly, it appears crucial to expand definitions of “news icons” in social media beyond photographs, to include all kinds of audiovisual material. As our analysis demonstrates, if we can understand the audiovisual content shared in social media after the Paris and Brussels attacks as news icons, then drawings are crucial components. Historically, it was more difficult for such content to achieve icon status, as newspapers would tend not to include it. Similarly, in today’s technological environment video materials may also achieve the status of icons – an aspect noted by Mortensen (2011). Past studies of icons have not ignored such considerations, but there has been an implicit focus on photography due to its traditional dominance as a source of icons in news media.

Second, our study confirms the importance of affective intent in the audiovisual content addressing conflict events (see, for example, Papacharissi, 2014; Chouliaraki, 2013a; 2015; Pantti, 2013; Papacharissi & de Fatima Oliveira, 2012). Displays of emotion and solidarity represent important audiovisual news values on Twitter in crisis contexts. Further, items posted with affective intent may eventually come to be republished in news contexts, and thus remediated (Chouliaraki, 2013b), with news media reporting on Twitter phenomena as part of their crisis coverage. Whether in the form of photos or drawings, the sharing of such affective content arguably extends the concept of connective witnessing beyond the circulation of purely factual footage: this material instead bears witness to individual and collective affective responses to the attacks, and its circulation and further development at times extends to a point where that affective response becomes newsworthy in its own right.

Third, in any analysis of visual conflictual content one needs to consider factors of time and place that affect the make-up of the participant community. The timing of an event determines where in the world Twitter audiences are most active: depending on the relative affinity of active users to current events, affective or factual items may receive greater attention. Cultural factors, for example audience sensitivities around graphic imagery (Hanusch, 2012), may also play a role in what content is shared. There may also be differences in attitudes towards expressing overtly emotive responses in public. A longer-term analysis of sharing practices following the Paris and Brussels attacks, beyond the initial hours that we have examined here, would likely detect further diurnal patterns as user activity shifts between Europe and other continents over time.

Fourth, it is important to consider the dominant actors who share audiovisual conflict and crisis content. Our analysis demonstrates the ongoing relevance of established news media in dissemination, but we also document the importance of other actors, especially celebrities. Perhaps even more importantly, relating to the particularities of social media logics (van Dijck and Poell, 2013), non-human actors, and especially bots, can also play crucial parts in dissemination patterns. While the latter's role has been little explored to date, future studies will need to pay careful attention to them.

Research into audiovisual sharing practices on social media during crises is still at an early stage, not least because the analysis is usually manual and therefore highly labour-intensive. Our study has therefore necessarily remained explorative, but points to a number of key features for further investigation. These include differences in affective and factual intent; between more or less immediately affected social media audiences; between different types of prominent accounts; as well as the complex dynamics of reposting identical or more or less strongly modified versions of the same content over time. Our analysis contributes to future studies by highlighting some key areas of concern in conceptualising processes of connective witnessing.

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