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Article

#JeSuisCharlie: Towards a Multi-Method Study of Hybrid Media Events

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Abstract

This article suggests a new methodological model for the study of hybrid media events with global appeal. This model, developed in the project on the 2015 *Charlie Hebdo* attacks in Paris, was created specifically for researching digital media—and in particular, Twitter. The article is structured as follows. Firstly, the methodological scope is discussed against the theoretical context, e.g. the theory of media events. In the theoretical discussion, special emphasis is given to i) disruptive, upsetting, or disintegrative media events and hybrid media events and ii) the conditions of today's heterogeneous and globalised media communication landscape. Secondly, the article introduces a multi-method approach developed for the analysis of hybrid media events. In this model, computational social science—namely, automated content analysis (ACA) and social network analytics (SNA)—are combined with a qualitative approach—specifically, digital ethnography. The article outlines three key phases for research in which the interplay between quantitative and qualitative approaches is played out. In the first phase, preliminary digital ethnography is applied to provide the outline of the event. In the second phase, quantitative social network analytics are applied to construct the digital field for research. In this phase, it is necessary to map a) what is circulating on the websites and b) where this circulation takes place. The third and final phase applies a qualitative approach and digital ethnography to provide a more nuanced, in-depth interpretation of what (substance/content) is circulating and how this material connects with the 'where' in the digital landscape, hence constituting links and connections in the hybrid media landscape. In conclusion, the article reflects on how this multi-method approach contributes to understanding the workings of today's hybrid media events: how they create and maintain symbolic battles over certain imagined constructs of social imaginaries of solidarity, belonging, contestation, and exclusion, a topic of core value for the theory of media events.

Keywords

automated content analysis; *Charlie Hebdo*; digital ethnography; hybrid media event; social network analytics; Twitter

Issue

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1. Introduction: *Charlie Hebdo* 2015, a Hybrid Media Event

On Wednesday, 7 January 2015, at 11:30 a.m., French–Algerian brothers Saïd and Chérif Kouachi attacked the headquarters of *Charlie Hebdo*. Eleven people were killed in the rampage. After the attack, the Kouachi brothers returned to their car and exchanged fire with

the police officers blocking their escape route. A few minutes later, they executed an injured police officer named Ahmed Merabet at point-blank range. The perpetrators escaped from the building, and the shooting of the police officer was filmed from a nearby apartment. The event instantly exploded into a transnational media event, and the amateur video material that was filmed began to circulate rapidly. Newsrooms all over

the world followed the massive security operation as the Kouachi brothers hijacked another car and fled north out of Paris. In the evening, tens of thousands of people took to the streets around Europe to show their solidarity with those killed by the gunmen. The next day, 8 January 2015, the attackers continued their escape, and thousands of security personnel were deployed to comb the area approximately 90 kilometres from Paris, where the two men were last seen. Meanwhile, in Paris, reports emerged that a policewoman had been shot and killed; however, the link with the *Charlie Hebdo* attack was not immediately apparent. As night fell, the Eiffel Tower's lights were switched off in memory of the victims. On Friday, 9 January 2015, the police located the attackers in the Dammartin-en-Goële area. The brothers were chased to an industrial complex 35 kilometres from Paris, where they seized a printworks and took a hostage. In east Paris, at around 12:30 p.m., a third gunman named Amedy Coulibaly seized a Jewish supermarket, killed four people, and took hostages. It emerged that Coulibaly was responsible for the killing of the Parisian policewoman, Clarissa Jean-Philippe, the day before. In his phone call to the French TV station BFM-TV, Coulibaly stated that his attack was synchronised with the attacks of the Kouachi brothers, and that they belonged to the same group of terrorists. He also threatened to kill his hostages unless the Kouachi brothers were allowed to go free. After several hours of this hostage situation, police special forces stormed the market and killed Coulibaly. The Kouachi brothers were killed by the special forces on the same day.

Over the course of these three days, new updates constantly appeared on websites, on YouTube, and on news broadcasts. Social media websites were inundated with comments, links, and images connected to the event, and these were shared and commented on by both journalists and ordinary citizens. The course of the events, as presented by professional journalists and international and national media houses, was intermixed with memes and comments that citizens from different countries shared via social media. In addition, various strategic and spontaneous (both political and religious) interest groups made use of the situation and competed for attention, tailoring and recycling details about the events with content aimed at different audiences.

One of the prominent features of the *Charlie Hebdo* event was the use of the slogan *Je Suis Charlie* ("I Am Charlie"), which became a symbol of solidarity and freedom of expression. The volume of communication around the event is well illustrated by the fact that the hashtag *#JeSuisCharlie* was—at least at the time of the event—the most popular tweet in the history of Twitter. The tag was tweeted 6,500 times per minute at its height and was featured in 3.4 million tweets in one 24-hour period (Whitehead, 2015). In addition to *#JeSuisCharlie*, there were many other expressions articulated

and shared via Twitter. The slogan *Je ne suis pas Charlie* ("I am not Charlie") came to represent myriads of opinions opposed to or critical of the mass *Je Suis Charlie* declaration. Another perspective was highlighted by the slogan *Je Suis Ahmed* ("I am Ahmed"), which referred to the French police officer Ahmed Merabet, who was Muslim and who was shot on the street by terrorists shouting, "Allahu Akbar" and "We have avenged the prophet". The slogan *Je Suis Ahmed* brought forth the perspective of French Muslims, who opposed the association between Islam and terrorism, as victims of the terror attack. The slogans were used on social media, in the news, and in demonstrations, and they were also circulated in images and caricature drawings emblematic of the case of *Charlie Hebdo*.

This brief illustration of the media workings in the *Charlie Hebdo* attacks is given here to demonstrate the hybrid nature of communication around the events and how an event can be transformed into a hybrid media event (Vaccari, Chadwick, & O'Loughlin, 2015). The term hybrid refers to a complex intermedia dynamic between mainstream news media and social media, as well as the complex circulations between messages and actors and the recombination of media on a variety of media platforms (Chadwick, 2013; Kraidy, 2002). Vaccari, Chadwick and O'Loughlin (2015, p. 1044) describe hybrid media events as "media events whose significance for media professionals, politicians, and non-elites is being reconfigured by the growth of social media". When thinking about the *Charlie Hebdo* attacks as a hybrid media event, we may approach it as a constellation of fluid social intensifications that are most typically created in a complex network of Internet-based and mobile communication technologies. The *Charlie Hebdo* attacks comprise elements of ceremonial mass media communication, but these also converge with contemporary forms of vernacular mass self-communication (cf. Castells, 2009), occasionally also thought of as a form of citizen journalism (cf. Allan & Thorsen, 2009). The element of "liveness" in the *Charlie Hebdo* attacks as a hybrid media event is intensified in the real-time circulation of texts and images and the dispersion of the event in several locations simultaneously. The level of connectivity between the official and viral narratives of the event may vary greatly, depending on the nature of a message in circulation. Hence, the concept of the "whole world" watching Paris needs to be analysed as an experience that is scattered onto a multiplicity of screens. While people may be sharing *Charlie Hebdo* as a collective spectacle—to use Kellner's (2003) terminology—they are connected to it in different ways. That is, they use different communication media to follow the event, associate with different—and even conflicted—narratives circulating on the event, and feel connected with different groups and identities involved in the event. Consequently, a multiplicity of shared ex-

periences is created in this hybrid media event. Thus, the question of power embedded in social integration as underlined in the classic theory of media events by Dayan and Katz (1992) needs to be addressed on several levels, including a variety of hybrid constellations of sociality (cf. Sumiala & Korpiola, 2016).

In the following sections, we suggest a multi-method approach for the empirical study of hybrid media events, using the *Charlie Hebdo* attacks as a case study. To meet this goal, we first provide a brief outline for our theoretical framework—the theory of media event—which is necessary to contextualise the methodological model. Secondly, we introduce a multi-method approach developed for the analysis of hybrid media events. In this approach, computational social science—or more specifically, a combination of automated content analysis (ACA) (Boumans & Trilling, 2016) and computational social network analytics (SNA) (Huhtamäki, Russell, Rubens, & Still, 2015)—is used in concert with a qualitative approach—specifically, digital ethnography. The article outlines three key phases for research in which the interplay between quantitative and qualitative approaches is played out. In the first phase a preliminary digital ethnography is applied to provide an initial sketch of the event. In the second phase, quantitative social network analytics is applied to construct the digital field for research. In this phase, it is necessary to map a) what is circulating on the websites and b) where this circulation takes place. In the third and final phase, a combination of the qualitative approach and digital ethnography is applied to provide a more nuanced, in-depth interpretation of what (substance/content) is circulating and how this material connects with the ‘where’ in the digital landscape, hence constituting links and connections in the hybrid media landscape. In conclusion, the article reflects on how this multi-method approach contributes to the understanding of the workings of today’s hybrid media events—how they create and maintain symbolic battles over certain social imaginaries of solidarity, belonging, contestation, and exclusion. This is a topic of core value for the theory of media events.

2 Theoretical Framework: Re-Thinking Media Events

Since the birth of the modern mass media, many sociologists, cultural theorists, and communication scholars have examined the interplay between modern society and mass-media saturated gatherings (Bennet & Segerberg, 2012; Boorstin, 1973; Debord, 1967; Kellner, 2003; Rojek, 2013; Shils & Young, 1956). A key focal point in creating this tradition of thought in media studies is *Media events: The live broadcasting of history*, published by Daniel Dayan and Elihu Katz (1992). According to Dayan and Katz, a media event is a special genre that is powerful enough to interrupt everyday

media flow, bring the viewer into touch with society’s central values, and invite the audience to participate in the event (Dayan & Katz, 1992, pp. 5-9). In their lexicon, media events have their own grammar, their own meaning structure (story form or script), and their own practices, which are characterised by live broadcasting: the interruption of daily media rhythms and routines, the scripting and advance preparation of the event, a huge audience (the “whole world” is watching), social and normative expectations attached to viewing (“must see”), the ceremonial tone of media narration, and the intention to connect people.

As the story forms, media events can be divided into “conquests”, “contests”, and “coronations”. According to Dayan and Katz (1992), these scripts constitute (i) the main narrative possibilities within the genre, (ii) the distribution of roles, (iii) and the ways in which these roles are enacted. In many cases, the three story forms are closely intertwined, and historical events correspond to and resonate with each other at different levels. One event may have certain features of each form; the form of an event may also change, transforming into another story form as the event develops. It is also important to acknowledge that all these scripts are embedded in deeper meaning structures in any given culture (Dayan & Katz, 1992, pp. 28-29). The common denominator for Dayan and Katz’s (1992) original work is the ceremoniality associated with media performance. The authors indicate that the significance of media events is in their ability to reach a larger audience than any event that requires physical presence. The audience itself is well aware of this, as they follow the unfolding media event in different locations, which may be private, semi-public, or public.

Since its publication in the 1990s, the media events theory has stimulated vigorous scholarly debate, with its value believed to be in its theoretical and methodological innovation (Cottle, 2006; Couldry, 2003; Dayan, 2010; Fiske, 1994; Hepp & Couldry, 2010; Hepp & Krotz, 2008; Katz & Liebes, 2007; Kyriakidou, 2008; Liebes, 1998; Nossek, 2008; Roel, 2009; Rothenbuhler, 1998; Scannell, 1995, 2001; Sumiala, 2013). The main criticisms of Dayan and Katz’s approach have addressed (i) the assumed ceremonial and integrative functions of media events, (ii) the attempt to exclude any disruptive or traumatic events from the focus of their theory, and (iii) the strong focus on television and broadcasting, which may result in inadequate study of global web-based media events.

In other words, many argue that Dayan and Katz’s initial account of media events assumes too straightforward a relationship between media coverage and audience endorsement, thereby obscuring the ideological construction of social order, as well as the challenges and disruptive potential that are implicit in many media events (Cottle, 2006; Couldry, 2003; Fiske, 1994; Kellner, 2003; Kyriakidou, 2008; Rothenbuhler,

2010; Scanell, 1995, 2001). In addition, given the globalisation of communication through the Internet and social networking websites, critics have called for a re-contextualisation of the explicit focus on TV and broadcasting in the media events theory.

Hepp and Couldry (2010, p. 9) argue that in theorising media events today we should not perceive them as placed at a defined locality, but rather as disembedded, or even ubiquitous, communicative practices. Drawing from the work of Hepp and Couldry, we postulate that today's media events should be understood as multi-sited, multi-temporal, multi-actor and multi-voiced phenomena articulated by a simultaneous connectivity of a variety of communication processes. These media events may be simultaneously structured around relatively centralised power structures, such as national and global mainstream media—for example the BBC or CNN—and multi-centred power structures, such as social networking sites (Hepp & Couldry, 2010, p. 9). Hepp and Couldry (2010, p. 12) offer a new working definition for contemporary media events to better grasp their fluid nature:

“Media events are certain situated, thickened, centring performances of mediated communication that are focused on a specific thematic core, cross different media products and reach a wide and diverse multiplicity of audiences and participants.”

Dayan and Katz have responded to the criticism of their original theory of media events and have re-adjusted their ideas in different public forums. Katz and Liebes (2007, 2010) suggest that the focus of analysis should be shifted from conquests, contests, and coronations to disaster, terror, and war. According to Katz and Liebes (2007, p. 157):

“We believe that cynicism, disenchantment, and segregation are undermining attention to ceremonial events, while the mobility and ubiquity of television technology, together with the downgrading of scheduled programming, provide ready access to disruption. If ceremonial events may be characterized as ‘co-productions’ of broadcasters and establishments, then disruptive events may be characterized as ‘co-productions’ of broadcasters and anti-establishment agencies, i.e. the perpetrators of disruption.”

Furthermore, Katz and Liebes suggest that marathons of terror, natural disaster, and war—media disasters—should be distinguished from media events as a separate genre. These mediatized disasters of different kinds have become far removed from the ceremonial roots of the original media events (Cottle, 2006; Liebes, 1997; Liebes & Blonheim, 2005). Daniel Dayan (2010) has written extensively about the changing na-

ture of media events. For him, the “macabre accoutrements to televised ordeals, punishments, and tortures” and the emphasis on “stigmatization and shaming” in today's mediatized public events have caused media events to lose their potential to reduce conflict; instead, they ‘foster divides, and install and perpetuate schisms’ (Dayan, 2010, pp. 26-27). As a result, media events tend to lose their distinct character and instead migrate towards other genres: new media events are no longer clearly differentiated entities, but exist on a continuum. Dayan (2010, p. 27) suggests this ‘banalization of the format’ produces what he calls “almost” media events. Dayan reminds us that the pragmatics of media events have changed as messages have become multiple, audiences selective, and social networks ubiquitous. Dayan (2010, p. 27) summarises the difference between original and current media events in the following manner:

“Interpersonal networks and diffusion processes are active before and after the event, mobilizing attention to the event and fostering intensive hermeneutic attempts to identify its meaning. But during the liminal moments we described in 1992, totality and simultaneity were unbound; organizers and broadcasters resonated together; competing channels merged into one; viewers gathered at the same time and in every place. All eyes were fixed on the ceremonial centre, through which each nuclear cell was connected to all the rest.”

Dayan leaves the reader in a state of scepticism. For him, in today's “contested territory of media events”, disenchantment and the loss of the “we”—the most critical functions of media events—are the most likely consequences. Although it is reasonable to ask whether this “we” ever existed, it is nevertheless inevitable that the dimensions of media events have changed with the changing media environment and the contemporary multiplicity of the media.

The concept of hybrid media events is one attempt to respond to the criticism offered by Hepp and Couldry (2010) and the response offered by Dayan (2010) and Katz and Liebes (2010). The idea of hybrid media events acknowledges the situated nature of transnationally or even globally mediated communication of a certain thematic core (here, the killings and related public reactions), while underscoring the fluidity of the movement in the circulation of the related posts, memes, images, news, and reports. The concept of the hybrid media event highlights the complex intermedia dynamics between the different media platforms (namely, mainstream news media and social media) in communicating those solidarities, belongings, and controversies associated with the event.

One of the key challenges for the study of contemporary media events is a methodological one. As the

media landscape changes and media events become more transnational and global, the right methodological tools need to be developed to better grasp these changing conditions. During the 1980s and 1990s in the empirical study of media events, the methodological focus was mainly on qualitative research. The empirical analysis focused on the study of national broadcast media, such as the BBC, or the national press, and the focus was on observation, textual analysis, and interviews related to the production, representation, and reception of media events (cf. Couldry, 2003; Couldry, Hepp, & Krotz, 2010; Eide, Kunelius, & Phillips, 2008).

While dividing the empirical focus between the production, representation, and reception of media events has proven a useful strategy for understanding national media events, this approach lacks the tools to analyse those communicative processes that go beyond the national frame and take place between and *betwixt* production, representation, and reception of media events. In these new conditions, messages, tweets, posts, memes, images, and symbols circulate and travel from one context to another. The categories between production, representation, and reception become blurred. It takes only one click to transform the person receiving a message into the one who produces it. As a result, new methodological approaches and tools need to be developed to capture these processes of communication that are crucial for today's hybrid media events. This suggests a new type of methodological dialogue between qualitative and quantitative approaches.

Here, the quantitative methods that make it possible to deal with a large amount of data circulating on a variety of media platforms are combined with more in-depth qualitative methods, such as digital ethnography, that enable researchers to go deeper into the data and trace pieces of meaning associated with symbolic battles carried out in the process of communicating about the events. In the following section, we introduce our methodological model for the study of hybrid media events with global appeal. This model, developed in the project on the 2015 *Charlie Hebdo* attacks in Paris, was created primarily for researching digital media—specifically Twitter.

3. Studying Hybrid Media Events on Twitter

Twitter is a micro-blogging website created in 2006 that enables users to send up to 140 character messages, commonly called “tweets”. According to Twitter’s own statistics from December 2015, the service has 320 million monthly active users (Twitter, 2016). Although the user growth has stalled in 2016—as Twitter is having its tenth birthday—it is still among the most popular social networking sites, along with Facebook and Instagram (Statista, 2016). On Twitter, messages are public by default, although the service also offers a feature called direct message (DM), which is

private. On Twitter, the model of social relationships is directed and non-reciprocal, meaning that users can subscribe to other users’ tweets in order to follow them. However, those they follow don’t have to follow them back. When a user follows other users, the tweets of those followed will be visible on the user’s main Twitter homepage, constituting a “tweet timeline” that appears in reverse chronological order. The characteristic practices for Twitter communication allow individual tweets to be liked and retweeted, which can increase the visibility and popularity of a single tweet. The retweet practice can also push a single tweet into a circulation that crosses the borders of different media platforms. Users can make a reference to other user with the @ symbol. With the prefix @ followed by a username, users can mention or reply to other users. An important feature is the hashtag—a word or phrase prefixed with the # symbol. Hashtags provide means for labelling tweets under certain topics, which gives structure to the communication on Twitter and enables users to find the information that interests them. Additionally, Twitter allows users to post images, videos, and hyperlinks.

As Twitter communication is limited to short messages that can be enriched with other communicative elements, such as images, videos, and hyperlinks, it is suitable for fast information sharing. Due to its public nature, it is popular among journalists, authorities, and organisations, as well as ordinary people. It is a prominent platform in the context and construction of different types of media events, varying from sports and politics to crises and disasters. A recent report on Twitter states that typical content on Twitter is twofold: either conversational, with thousands of people engaging with a particular topic for an extended period of time, or breaking news stories that drive large spikes in traffic over shorter periods of time (Parse.ly, 2016). Studies focusing on Twitter during political elections and sport events such as the Olympics give emphasis to idea of the audiences as co-producers of a media event, in addition to the traditional mass media (cf. Girginova, 2015; Kreiss, Meadows, & Remensperger, 2014). In the field of crisis communications, Twitter has been at the centre of many discussions. From the Arab Spring to the 2011 London riots, Twitter has been identified as a prominent platform for citizen communication in several revolutions, protests, and movements, as it connects people and bypasses the gatekeepers, whether they be the authorities or journalists (cf. Bennet & Segerberg, 2012; Procter, Vis, & Voss, 2013). From the journalistic viewpoint of crisis reporting, the 2010 Haiti earthquake has been called the first “Twitter disaster”. This title underlines the fact that during the first 24 hours of the Haiti earthquake, news organisations were depending on social media, and especially the rapid and easily accessible flow of information provided by Twitter (Bruno, 2011). In times of crisis, ordi-

nary people can actively produce information, and they can also link and share published news stories from mainstream news media (Utz, Schultz, & Glocka, 2013; Parse.ly, 2016). In this context, Twitter has been perceived as a symbol of change in the media landscape:

“If we allow ourselves to paraphrase the CNN effect of the 1990s, this changeover in the media landscape could be called the Twitter effect. As was true for the CNN effect, which was caused by more than just the CNN organization, the Twitter effect must also be considered as a symbol of a much broader phenomenon, concerning several online tools oriented to the publication of user-generated, real-time content (Twitter, Facebook, YouTube, etc.)” (Bruno, 2011, p. 8)

For our research, Twitter offers a fruitful context for the study of a hybrid media event. First of all, in contrast to Facebook, Twitter provides an Application Programming Interface (API) that allows access to the majority of the data published through the service (cf. Vis, 2013). Secondly, although we fully acknowledge that Twitter is only one platform in the hybrid media system, we state that it played a key role as a prominent platform during the unfolding of the *Charlie Hebdo* attacks, through which information, images, videos, and links about the incident were circulated. Thirdly, Twitter has become a key platform for breaking news, and therefore events that draw attention tend to surface on the platform. Finally, Twitter offers rich data that also sheds light on other forms of media. Several media organisations, politicians, and authorities use Twitter, and the content and actors from other media platforms are also present through a hypermedia chain (cf. Kraidy & Mourad, 2010). To give an example, a tweet that contains an image taken of the TV screen showing the news is a common convention that constructs a chain of different media.

4. Towards a Multi-Method Model

4.1. Automated Content Analysis and Computational Social Network Analytics

In our multi-method model, we combine computational social science—more specifically, automated content analysis (ACA) (Boumans & Trilling, 2016) in concert with computational social network analytics (SNA)—with a qualitative approach—particularly, digital ethnography. The computational approach allows for analysing both what is being said and by whom. Moreover, the individual actors can be connected to each other through their interactions for richer context to content, and this allows, for example, the identification of densifications in interaction between actors. More specifically, methods of automated content analysis allow us

to identify the content that is circulating in the context of the hybrid media event under investigation. Social network analytics give us the means to investigate the overall structure between the actors that discuss and share content related to the event.

Here, the computational approach is used primarily to support digital ethnographic investigations. In terms of content analysis, the computational approach allows us to identify the key topics that are discussed in the data collected on the event. Four main approaches exist for automated content analysis: counting and dictionary, unsupervised learning, semi-supervised learning, and supervised learning (Boumans & Trilling, 2016; Laaksonen, Nelimarkka, Tuokko, Marttila, & Kekkonen, 2015). In its simplest form, automated content analysis is implemented by counting the number of times individual keywords or, in Twitter’s case, hashtags and usernames, are included in the data. Unsupervised learning allows, for example, the creation of content-based clusters from the data to identify topics and their combinations or, in other words, to “identify potentially significant fragments” (Procter et al., 2013). In supervised learning, part of the data is categorised manually, and this learning data is used to teach an algorithm to categorise the rest of the material according to its category. Examples of approaches for automated content analysis include keyword extraction, topic modelling, natural language processing (NLP), and entity recognition (Boumans & Trilling, 2016; Finkel, Grenager, & Manning, 2005).

Compared to the situation that Procter et al. (2013) faced when they started mining tweets and found that there was very little existing infrastructure to support them, the availability of tools supporting analysis has improved over the last few years. Online services and social media analysis platforms, including Pulsar and others, provide investigators with dashboards that are able to manage millions of tweets. Using such environments for research is, however, far from trivial. Transparency of data and analysis routines remains a key issue. For ethnographic research, this limitation is not as major, as the investigation is done first and foremost on a qualitative basis, and therefore representative sampling is not a major issue. It is, however, important for the ethnographic research to understand what, in fact, is “the field” where the research takes place. This can be a problem when using commercial analytics services, as, due to technical and business restrictions, it is not always possible to gain the necessary information on how the data has been obtained.

The key approach into the analysis of structure that emerges from the interaction between individual actors in the data is social network analysis (SNA). Here we follow the insight of Yang and Leskovec (2014, p. 1892) as they maintain that, “networks provide a powerful way to study complex systems of interacting objects”. SNA supports investigators in observing latent

structures and patterns in source data and in sharing their findings with others (Freeman, 2000). When analysing communication networks, actors are represented as network nodes and connected to each other through interactions. Network analysis allows us to quantify both structural properties of networks, as well as the structural positions of individual actors. Moreover, cluster identification can be used to identify groups of nodes that are interconnected to each other.

Network-level metrics come into play when individual network representations are compared to each other. Moreover, network metrics support the temporal analysis of network structure. Size, connection count, density, diameter, and average path length are examples of metrics that can be used as indicators as to which way a network under investigation is evolving. In investigating hybrid media events, one can, for example, create network representations of interactions that are related to a particular topic (identified using automated content analysis) and use network-level metrics to compare the properties of these topic networks.

Cluster identification is a particularly useful method for supporting early exploration of communication data. Clusters emerge from the topology of the network and challenge the investigators to make sense of why a particular cluster emerges. To support the sense-making process, the investigators can use the cluster membership to volumes of hashtags and other topic identifiers and therefore name or label the clusters according to their content signature.

Node-level metrics can be used for a number of purposes. Nodes with a high “betweenness” value, for example, are likely to act as bridges or boundary spanners (Hansen, Shneiderman, & Smith, 2011, “bridge scores for boundary spanners”) connecting the different clusters of the overall network. Nodes with a high “in-degree”, receive attention from the other actors. Nodes with a high “out-degree” are active in producing new content. Closeness centrality allows us to make a distinction between nodes with peripheral position and those close to the core of the network.

4.2. Digital Ethnography

Concepts such as digital ethnography, virtual ethnography, web ethnography, netnography, mobile ethnography, ICT ethnography, and virtual ethnography have emerged to describe fieldwork conducted in digital environments and landscapes (Boellstorff, 2008; Hine, 2015; Kozinets, 2015; Wittel, 2000). Online access to vast amounts of archived social interactions, along with live access to the human beings posting, changes the practice of ethnography. Researchers of the media are not dealing merely with words, but with images, drawings, photography, sound files, edited audiovisual presentations, website creations, and other digital artifacts (Kozinets, 2015, p. 4).

A characteristic of this qualitative methodological approach is that the researcher conducts fieldwork in the digital environment and applies participatory observation as a means to analyse human–technology interactions in the media and the social and cultural implications this interaction has for the present day digitalized life. In more practical terms, a digital ethnographer constructs his/her field by following or tracing the event, phenomenon, or activity in question. The fieldworker makes notes, keeps field diary, takes screen shots, downloads material, and he or she may also interview informants by meeting them face-to-face or via digital communication media. It is not unusual that digital or online ethnography is combined with offline ethnography (cf. Postill & Pink, 2012).

Ethnographic understanding of the digital environment and its related interactions aims at in-depth, holistic, and situational understanding and knowledge of the studied event, phenomenon, activity and people (Hine, 2015, pp. 2-3). Considering the global, fluid, and continuously changing nature of the digital landscape, the issue of proximity and situational knowledge also needs re-framing. As Hine (2015, pp. 3-4) argues:

“When we watch a fight break out on Twitter we cannot be sure whether any of the followers of those involved are seeing the same fight, at the same time, and understanding it in the same way that we do...The very notion of singular ‘situation’ as a pre-existing object breaks down when we look closely...An ethnographer in such circumstances must get used to a perpetual feeling of uncertainty, of wondering what has been missed, and attempting to build interpretations of events based on sketchy evidence.”

In digital ethnography, the researcher has to deal with his/her limited human capacity to encompass the whole of the situation. For this challenge, computational social science offers valuable tools to map the digital landscape and provide a broader frame for the communicative and social processes taking place in that landscape. The value of ethnographic thick description and situational understanding lies in the depth, detail and the ability to grasp more profound layers of meaning in those actions and activities taking place in Twitter and elsewhere in digital media. To follow Hine (2015, p. 5):

“Ethnography is highly necessary for understanding the Internet in all its depth and detail, and yet it can be challenging to develop way of conducting ethnographic studies which both embrace all that mediated communication offers and still provide us with robust, reliable insights into something in particular.”

5. Three Phases

In the following, we will explain in more detail how the computational social science methods, automated content analysis (ACA) and social network analytics (SNA), can be combined with digital ethnography, and how this methodological interplay contributes to developing a new multi-method model for the study of such media events. This method has three phases:

- 1) Digital ethnography provides the first outline of the event;
- 2) Automated content analysis and social network analytics construct the digital field for research;
- 3) Digital ethnography provides an in-depth interpretation of what (substance/content) is circulating and how this material connects with the 'where' in the digital landscape, hence constituting links and connections in the hybrid media landscape necessary for the social meaning making of the event.

5.1. Digital Ethnography Sketches the Event

Like traditional media events, hybrid global media events interrupt the daily routines of the media and of the everyday. In the case of disruptive events, not only the mainstream news media, but also the social media environment turns to a disaster mode and begins to broadcast and circulate news, comments, tweets, posts, and images on the events as they unfold. This moment of massive media saturation and circulation of information produces the first methodological challenge for the study of hybrid media events. This first phase of chaotic information flow demands a digital ethnographic scope—a perspective in which the events are followed and structured into a timeline. In the case of *Charlie Hebdo* attacks, we started our pilot study immediately as the events unfolded. As digital ethnographers, we traced the news in the mainstream media, such as the *BBC*, the *New York Times*, the *Guardian* and *Le Monde*, as well as on Twitter, YouTube, and Facebook. Our personal media streams also included national news outlets, as well as friends and family members located in our native Finland and in different parts of the world, reporting and commenting on the events from different local perspectives. We identified certain prominent messages, hashtags, posts, memes, and images circulating in those media environments. To give one example, the hashtag #JeSuisCharlie was soon announced as the most-tweeted message in the history of Twitter, offering a simple and interesting lead to be followed in the course of the events. This first ethnographic phase of the analysis is best described as suggestive, and its findings may well be challenged in the later process of quantitative and qualitative analysis. Yet, it is a necessary stage for the

process to follow, as it is this first stage of the project in which the chaotic information flow around the events is given its first suggestive sketch. This phase provided insight to what might be interesting, relevant, and peculiar in the events as they evolve and, thus, direct the analysis in the next phase. As a concrete way of gathering data, this phase results in many field notes, screenshots, memes, images, videos, and links, as well as a timeline of the events.

5.2. Using Automated Content Analysis and Social Network Analytics to Map the Field

In the next phase, social network analytics are applied to draw a more general overview of communication around the events with more data. In the case of the *Charlie Hebdo* attacks, the media platform analysed was Twitter. In this so-called "helicopter stage" of the analysis, social network analytics are used to construct the research field and give an overview of the data as well as map certain elements considered relevant based on the first phase of the pilot study. Prior to the analysis, the data needed to be collected. In this case, it was acquired through the social media analytics platform Pulsar using several search words¹. The number of hits for #JeSuisCharlie totalled 2.3 million.

At the second stage, it is important to make a distinction between *what* is circulating in Twitter and *where* this circulation is taking place. In the *Charlie Hebdo* attacks project, we began with the hashtag #JeSuisCharlie and identified certain key groups: actors including ordinary media users, professional media houses; sites such as connected media platforms, countries and connections associated with it - both communication and non-communication between the different virtual communities created around this particular hashtag. As a result, this mapping can be further expanded to identify hashtags and actors that are related to #JeSuisCharlie. This mapping helps us to empirically illustrate communicative networks created around the events—where and when they take place and how they exist in relation to each other.

Human-in-the-loop analysis is particularly important when ethnographic and computational methods and approaches are used together. Therefore, we point to the Ostinato Model (Huhtamäki et al., 2015) for a structured process for data-driven visual network analytics that allows for balancing between exploration and automation (i.e. reproducibility) of analysis. This way, a multidisciplinary group of investigators can develop the rich description of a hybrid media event in an iterative and incremental fashion through a process that resembles peeling an onion and, thus, to begin to quan-

¹ The list of search words applied is the following: je suis charlie, #jesuischarlie, je ne suis pas charlie, #jenesuispas charlie, je suis ahmed, #jesuisahmed

titatively identify what is circulating (which hashtags) and in which digital media landscapes this circulation takes place. Starting with Twitter helps us to follow the circulation of certain hashtags and actors tweeting and re-tweeting onto new networks of communication (for example, Facebook, Instagram, or online media sites such as Huffington Post have been identified).

However, it must be noted that while collecting data from Twitter is relatively straightforward, given that the investigative team has the required technological capabilities, hybrid media introduce a major issue into data collection. The two public APIs that Twitter offers for developers, response-request based REST API and real-time streaming API, only allow data collection at the time it is published on Twitter. REST API allows the collection of limited amounts of data dating back to a number of days, and the streaming API operates in real-time by definition. The only way to collect extensive data on *Charlie Hebdo*, for example, is to acquire (buy) the data either directly from Twitter or through a social media listening service such as Pulsar. The data ecosystem has transformed since Procter et al. (2013) conducted their research regarding the 2011 London riots. Importantly, Twitter acquired Gnip² in 2014 that is currently the only company through which Twitter data can be purchased.

5.3. Applying Digital Ethnography in Tracing the Social

In the final stage of the empirical analysis, networks mapped by using quantitative analysis and social network analytics and its visual illustrations are taken into an ethnographic reconsideration. The quantitative analysis draws a map of the field and helps to orientate the ethnographic immersion. After choosing an interesting incident within the larger event, this case is followed in and through different media platforms. This phase aims to develop a holistic understanding of the chosen research object. Thus, the fieldwork in a digital landscape integrally involves a dense description of the observations in the form of field notes as well as documentation and recording of data by any means available, such as screenshots and prints (cf. Sumiala & Tikka, 2013). In order to capture the research object in a highly complex and dynamic landscape, it is useful to go back to the timeline of the events and re-evaluate the first sketch of the events against the quantitative framework and, consequently, make necessary re-orientations. In this phase, the researcher needs to re-evaluate the incident's relationship with the larger event and the key nodal points in this process. This can be carried out by searching for facts connected to the events and identifying certain key elements such as time, place, and people. In the digital landscape, this

can be challenging as hybrid media events host and entice myriads of interpretations, misunderstandings, rumours as well as intentional misinformation. After re-locating the basic elements in the event, the researcher can begin to add layers of meanings to the event. This can be done in two overlapping ways; it is possible to conduct ethnographic fieldwork by following paths and trails of links, streams, and algorithmic suggestions offered by Twitter and other social media platforms, but it may also be useful to conduct digital ethnography by approaching the event simultaneously from different directions for example by making searches in search engines. In these overlapping processes digital ethnographer develops a more nuanced and in-depth understanding of the event and can begin to make interpretations of those more or less visible and hidden representations, discourses, actors and symbols and related communicative practices that contribute to creating and maintaining different types of social imaginaries of solidarities, belongings, and exclusions embedded with the events.

6. Conclusions

In this article, we suggest a new multi-model methodological approach to the study of hybrid media events developed for the study of the *Charlie Hebdo* attacks. In this new condition of hybrid media, events, messages, tweets, posts, memes, images, and symbols spread simultaneously and are constantly on the move. Old hierarchies between the centre and peripheries in the media event need to be reconsidered as hybrid media events appear more horizontal and multi-sited, multi-temporal, multi-actor, and multi-voiced social phenomena.

As a result, new methodological approaches and tools need to be developed to capture these processes of communication and better understand the workings of today's hybrid media events. This multi-method model proposed in the article consists of combining quantitative automated content analysis (ACA) and social network analytics (SNA) with qualitative digital ethnography. The key for the model is a close interplay between the different approaches and their careful adaption in the different phases of the research. This offers a unique possibility to bridge the gap between situational, in-depth knowledge achieved by qualitative methods in the study of media events and their understanding in the more global communication context.

The theory of media events was first established to explain the social dynamics activated as people gathered together around their TV sets to watch national rituals as live history to be performed on the screen. As discussed earlier, later developments in this theory have challenged the assumed social cohesion created by these events and emphasised instead the disruptive nature of media events. This has implied a certain contested view on the issue of sociality. The hybrid charac-

² <https://blog.twitter.com/2014/twitter-welcomes-gnip-to-the-flock>

ter of contemporary global, disruptive media events such as the *Charlie Hebdo* attacks makes the issue of social integration even more complicated. The question of establishment and anti-establishment is also changed in the hybrid media system. A terrorist attack is as carefully crafted and designed as a coronation, despite aiming at disruption rather than integration. The hybridity of the media environment causes a situation where no individual actor is able to control the flows of information, attention and effect. Despite this, hybrid media events also represent and reproduce existing social solidarities and antagonisms. Continuity and change take place through the circulation of meanings. Twitter is a particular environment for the circulation to take place. Its specific properties contribute to a culture of circulation (Lee & LiPuma, 2002) that seems complex and dispersed. This complexity calls for the multi-method approach.

The question of social integration in media events is not only a theoretical one. It is important to ask how we should empirically study the social dynamics activated in hybrid media events. In this article we suggest a methodological model that has potential to move from one research scale to another. The wider scale observations of the *Charlie Hebdo* attacks as a hybrid media event suggest a multiplicity of social dynamics were activated during the events. Hence, it suggests an interpretation that emphasises the heterogeneity as well as the ephemerality of those social dynamics. To understand more profoundly what kind of meanings and interpretations are associated with those messages and actors circulating in the digital landscape, an ethnographic perspective is necessary. In the future, more empirical research is needed to grasp these complex dynamics of social imaginaries of solidarity, belonging, but also exclusion. The multi-method approach is one attempt to point to this direction.

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Conflicts of Interests

The authors declare no conflicts of interests.

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