

NEWS FLOWS, INTER-MEDIA CONNECTIVITY AND SOCIETAL RESILIENCE IN TIMES OF CRISIS

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Abstract

This paper analyses how inter-media connections and news flows can establish societal resilience in times of crisis. The paper is framed by understandings of the discursive practice of news as polyvocal and networked, and that social media as much as legacy media are important to a society's resilience to crisis situations. Based on an analysis of the Norwegian public sphere during and immediately after the terrorist attacks 22. July 2011, the paper finds that the Norwegian public sphere established societal resilience through what we identify as "uniformed polyvocality". This analysis reveals that an inter-connected news landscape, in which power is distributed and trust in established news institutions is intact, is key to the formation of societal resilience in times of crisis. The analysis is based on the following empirical material: Hyperlinks in the Norwegian Twitter-sphere and in online news sites, and sources referenced in stories about the attacks published in the most read Norwegian online and print news outlets. The findings, and the methodology presented in this paper, have important implications for future research related to discursive practices of news and societal resilience in times of crisis.

KEYWORDS: Inter-media connectivity, Polivocality, Discursive practice of news, Twitter, Social media, Crisis communication, Terrorism, 22. July 2011

Introduction

News is everywhere. With social media, news has become separated from journalism and traditional news outlets' position as main providers and interpreters of news is challenged. The discursive practice of news (e.g. the production, distribution and consumption of news) has in other words become networked, involving many "actors, actants, audiences and activities" across different media and platforms (Lewis and Westlund 2015). This "polyvocality" (Carlson 2017, 192ff) of the digital discursive practice of news marks the public sphere with complexity and diversity, which can have both positive and negative effects for democracies. On the positive side, more people can participate, express themselves and be heard. More news is publicly available, and important information might diffuse quickly and effectively in society, aided by the many "producers" (Bruns 2009) of the public sphere, thus creating a strong sense of community. On the negative side, the public sphere might resemble the biblical tower of Babel, at which chaos erupted because everyone spoke different languages and nobody understood one another. In such a babelic state, effective news diffusion is disrupted by misunderstandings,

disinformation, lack of connectivity and hence no sense of community. How the public sphere functions along this continuum from chaos to efficient and community-strengthening participation becomes a question of connectivity and distribution of power and trust in the digital discursive practice of news. How connected are the various “producers”, media outlets and platforms in the digital discursive practice of news in a given society? To what degree is trust and power distributed among its participants, media outlets and platforms?

This paper takes such questions as its starting point and argues that they are especially important in assessing how a society deals with crisis situations. It is in times of crisis that the strength of a democracy is tested. When a major crisis like a massive terrorist attack or a natural disaster hits a society, the society’s ability to respond effectively and cope adequately rests to a large degree on the levels of connectivity, trust and power distribution in its public sphere. Research so far has been preoccupied with how new, social media alone changes the digital discursive practice of news in crisis situations. Bruns (2014), for example, argues that social media have paved the way for a “new ecology of emergency media” in which new and old media coexist and feed of each other in the coverage and sense-making of emergency events. Others argue that social media represent a “new logic of distribution” (Klinger and Svensson 2015, 1248) in which individuals with no prior experience with mass communication can gain significant roles as “remote emergency operators” (Starbird and Palen 2011), and ordinary people can be “crowdsourced to prominence” (Meraz and Papacharissi 2013). Social media can also promote alternative framings and counter-discourses on how to assess and understand a crisis (Eriksson 2016; Lindgren 2011). Especially micro-blogging services like Twitter have proven to be “privileged as platforms for backchannel activity” (McNely 2009, 297), in which the dominant discourses of mainstream media can be countered and sense-making can be negotiated.

However, not much research exists that investigates not only new, social media, but connections between media related to crisis situations on a more general level. This paper aims at doing that through an examination of inter-media connections and news flows during and in the aftermath of the 22. July 2011 terrorist attack in Norway, in which 77 people were killed in two attacks in Oslo and on the small island Utøya 40 minutes outside of Oslo. In order to assess the level of connectivity, and the distribution of power and trust in the digital discursive practices of news in the Norwegian society during and after the terrorist attack, the paper therefore analysis 1) hyperlinks in legacy online news media; 2) references to social media in both online and print legacy media; and 2) the diffusion of hyperlinks in the Norwegian Twitter sphere July and August 2011. Hyperlinks are common objects of study in news flow research (Weber and Monge 2011) and they are barer of symbolic meaning related to power and trust in news networks (De Maeyer and Holton 2016; De Maeyer 2013).

The aim of this analysis is to give a unique historic account of the national public response to this crisis, who and what the dominant media, actors and platforms were, and their levels of inter-connectivity. However, the analysis has value far beyond the historic documentation of this one case. On a more general level, the paper will bring forth new knowledge on the characteristics of a public sphere, and a digital discursive practice of news, capable of creating societal resilience in times of crisis. The research is therefore guided by the following two research questions:

RQ1: How polivocal and inter-connected was the Norwegian discursive practice of news during and immediately after the 22 July 2011 terrorist attack?

RQ2: What can an analysis of the 22 July 2011 case tell us about the characteristics of a public sphere capable of creating societal resilience in times of crisis?

In addition to answers to these two research questions, the paper also contributes valuable knowledge on how to methodologically analyse a highly networked, digital discursive practice of news.

The paper starts with a discussion based on previous research of the polyvocal and networked nature of digital discursive practices of news, with special emphasis on social media and inter-media connections established through hyperlinks, which is the main unit of analyses in the empirical research presented here. The methodology and material is then outlined, before findings are presented and discussed.

Polivocal, networked and digital discursive practices of news

This paper is based on the theoretical presupposition that discursive practices of news have transformed from a monovocal to a polyvocal state. Historically, news institutions needed to adopt a practice labelled by Barnhurst and Nerone (2001) as “monovocality” to become authoritative voices people could trust. Such a practice implied that a news story was to be perceived as an objective, true and undisputed account of events in the world, and that the everyday edition of a newspaper or a newscast was not distorted by individual subjectivity and divergent voices. The newspaper spoke with one voice, and in a time when journalism had monopolized the discursive practice of news, this discursive practice was therefore monovocal.

With digital technology, legacy news institutions have lost their monopoly of the discursive practice of news. Web sites, blogs and later other social media have made news production and distribution accessible to everyone, and the discursive practice of news has become marked by polyvocality, implying that “news may arise across a variety of sources in real time, as can be seen on Twitter during breaking news” (Carlson 2017, 194). The theory of inter-media agenda setting, which since its origin has been preoccupied with how news content travels between different media (Atwater, Fico, and Pizante 1987), has been developed as an approach to analyse this polyvocality of the digital media landscape. Much of the early research on the polyvocal and networked digital discursive practice of news focused on the interplay between especially blogs and traditional media (Anderson 2010; Graves 2007; Meraz 2009; Coddington 2012). For example, Murley and Roberts (2005) found that blogs were feeding off mainstream media and thus primarily engaged in “second-level agenda setting”. Comparisons between legacy and social media are, however, difficult to make within the inter-media agenda setting framework because social media are not entities in the way legacy news institutions are, they do not have time-stamped issues, and they do not have a specific agenda (Harder, Sevenans, and Van Aelst 2017). Social media are polyvocal, whereas legacy news institutions still predominantly ascribe to a position of monovocality. This paper therefore prefers the concept inter-media connectivity over inter-media agenda setting.

Sharing, gatekeeping and hyperlinks

Social media like Facebook, Twitter, YouTube, Instagram, etc, are meeting places driven by norms of connectivity, in which activities like sharing, liking, following, friending, etc have technological, social and economic meaning (Dijck 2013). An important distinction between social and legacy media is that news has to find its audience in social media through

activities of sharing, liking etc, while legacy mass media have traditionally not relied on such audience activities when disseminating news. Shareability has thus become “the number one currency in social media” (Roese 2018, 315). In order for news to diffuse in social media, it must pass through a multitude of private gatekeepers, who potentially re-frame and re-contextualize the news through activities of sharing and liking, thereby creating new layers of meaning. The polyvocal turn of the digital news discourse therefore not only implies an increase in the number of news producers, it also implies that the same piece of news gets affected by a magnitude of voices in the very acts of spreading it across social media platforms.

Central to the ways in which news diffuse across media is the hyperlink. The ability to share and connect with all kinds of content through hyperlinks is a fundamental characteristic of all online communication, and it is what differentiates online from analogue media, argues Napoli (2008). Hyperlinks affect the size and shape of the public sphere (Turow 2008) in how they facilitate the polyvocal, sharable and connectivity-based logic of digital news networks. Hyperlinks are therefore crucial objects for inter-media connectivity, and they represent entities which can be empirically analysed in order to determine the establishment and development of such connectivity, including how trust and power are distributed.

Hyperlink research, which has grown tremendously in recent year, can be divided in two broad categories, according to De Maeyer (2013): Networks science research, which aims at describing hyperlinked networks and discovering their properties; and social science research, which analyses links as indicators of other (social) phenomena. This study falls into the second category, as it aims at analysing links as indicators of inter-media connectivity and a society’s level of resilience in times of crisis. When analysing links in order to investigate social phenomena like connectivity and resilience, it is important, for reasons of validity, to make sure that the links actually connect with these phenomena (De Maeyer 2013, 747). The connection between links, inter-media connectivity and societal resilience presupposes that links are carriers of relevant content and that it is possible to measure the authoritativeness of that content by counting the number of links to it (Finkelstein 2008). Such a presupposition aligns with the logic of linking practices in journalism and the digitized discursive practice of news, in which interactivity, transparency, credibility and diversity are values associated with hyperlinking (De Maeyer and Holton 2016). There is a close connection between linking and sourcing in journalism. An online news story with many links is commonly perceived as a story rich on sources, and adding links to a news story is perceived as a way of being transparent about sources, both of which are considered signs of quality (De Maeyer 2012). A few studies have shown that linking practices in online news resemble the hierarchy of sources found in traditional news, in which a limited range of official, established sources is preferred (Larsson 2013; Coddington 2012), and that links in journalism therefore have been institutionalized (Coddington 2014). A large-scale study of hyperlinks in Scandinavian online news sites shows that Norwegian online news sites on average connects to 40 other news sites via hyperlinks (Sjøvaag et al. 2018). This makes the Norwegian news landscape more diverse in its connections than in the other Scandinavian countries, suggesting a slightly higher degree of polyvocality in Norwegian news.

However, links and sources are not one and the same. Non-digital sources can of course not be linked to, and a link may not be equivalent to a source. Previous research has revealed that linking practices are dominated by a certain degree of media protectionism, implying that actors on one media platform prefer linking to content from the same

platform. This phenomenon is well documented for online news sites. Tremayne (2006) has shown how internal linking in online news sites increased over time, as the archives of online news sites grew bigger. Dimitrova et al. (2003) found that online news sites covering the execution of the terrorist Timothy McVeigh in 2001 used hyperlinks as a gatekeeping mechanism, which favored internal over external links.

Social media, resilience and crisis

Previous research has shown how social media can aid in creating resilience in how a society responds to a crisis, for instance by being tools for making sense of an emergency event, forums of social convergence, collective intelligence and community activism during and after disasters, channels for offering comfort and support, and by having potential psychological benefits for vulnerable populations (Heverin and Zach 2012; Keim and Noji 2011; Dufty 2012; Taylor et al. 2012; Leong et al. 2015; Brengarth and Mujkic 2016, among others). However, much research also emphasizes the potential damage social media can do to a society's resilience to disasters, especially related to the diffusion of misinformation and rumors and potential violations of privacy rights (Keim and Noji 2011; Reuter and Spielhofer 2017). Such dangers can potentially produce antagonism, conspiracy theories and thereby unstable societies.

Based on this previous research, we can hypothesize that inter-media connections between social media, mainstream legacy media and other media are important for a society's ability to establish a sense of collective response and thereby societal resilience. Previous research on the 22 July 2011 terrorist attack in Norway suggests that such connections were present. Kverndokk (2013) found strong representations in social media of a collective response to the terror attack in Norway 22. July 2011 similar to the response found in mainstream legacy media. In an analysis of dominant themes and communicators in the Norwegian Twitter-sphere during and after the terrorist attack, Steensen (2018) also found evidence of a collective response, even though the Norwegian twitter-sphere was highly polyvocal: During the hours of the attack 22. July 2011 about 36.000 tweets (excluding retweets) were posted by 16.000 different Norwegian user accounts, and the top ten most active tweeters only accounted for four per cent of the communicative activity.

However, collective response and resilience are not the same thing. A collective response might be based on misinformation and distrust in government and leading crisis management bodies, thereby creating a destabilized society more so than creating societal resilience. Whether a collective response generates societal resilience depends on how trust and power are distributed. If power (understood as the ability to influence others) is closely linked to recognized, formal authorities within the society, and if these authorities are trusted by the public, then a collective response might translate to societal resilience in times of crisis. Since trust, like power, is a relational concept, it is always negotiated as new relations appear. In a crisis situation, large networks of information comprising many new relations are likely to appear, and trust is therefore built *in-situ*. Measuring how trust and power are distributed in such networks are difficult, but given their relational nature, an analysis of the technical artifacts that carry the relations – namely hyperlinks – will provide some answers.

Analyzing the sharing of hyperlinks in Norway will shed further light on exactly how polyvocal the communication activity during and immediately after the 2011 terrorist attack were, which media, platforms and actors were influential, and thereby powerful and considered trustworthy, and how inter-connected these media, platforms and actors were.

About the event

Before presenting the methodology and the findings, it is necessary to provide a few details on the terrorist attack 22. July 2011, which was the biggest attack on Norway since World War 2. At 15:25 this Friday a massive car bomb exploded at the governmental quarter in the centre of Oslo. Eight people were killed in the blast. The national newspaper VG, the regional newspaper Dagsavisen and the commercial broadcaster TV 2, which all had their offices close to the governmental quarter, had to evacuate their premises due to the bomb blast.

The lone terrorist, Anders Behring Breivik – a 28-year-old right wing extremist who wanted to attack the social democratic party whom he considered traitors of Norway – then drove 40 km northwest of Oslo to the Tyrifjorden lake, where he, dressed as a policeman, arrived at the ferry landing *Utøyakaia* at 16:55. He was transported by the local ferry to the small island of Utøya, where the social democratic party's youth organisation (AUF) held their traditional and yearly weeklong summer camp. 564 people were on the island when Breivik arrived at 17.18. Four minutes later he started to shoot people. For more than an hour, he searched the island for people to kill, and managed to kill 69 youngsters and injure 56 before the police apprehended him at 18.34. Lots of youngsters fled the island by swimming away, while others hid as best they could (Dyb et al. 2014).

At 19:30, the police confirmed that seven people were killed by the bomb. At 21:30, the police reported ten deaths at Utøya. At 22:45, the minister of Justice, Knut Storberget, confirmed that the apprehended terrorist was ethnically Norwegian. At 03:17 23. July the police stated that the number of casualties at Utøya was far greater than previously assumed, and at 03:50, they stated that 80 people were killed at Utøya. The correct number of casualties was not announced before Monday 25. July.

Methodology and material

Much of current research into the evolving discursive practice of news emphasize the need to look beyond the traditional newsrooms and have no predefined assumptions concerning who, what and how news is produced, distributed and consumed. Actor-Network Theory (ANT) has therefore been suggested as a suitable, methodological framework to analyse contemporary discursive practices of news in order to “patiently follow[ing] the actants to reconstruct how news is produced, circulated and used in a specific context” (Domingo, Masip, and Costera Meijer 2015, 63).

However, such tracing and reconstruction of activities in networks with no preconceived ideas on who the important actors or actants are, is time consuming and difficult. Lewis and Westlund (2015) have therefore suggested a model to analyse cross-media news work, in which certain activities related to news production (like selection, editing and distribution) are presumed to involve certain actors, technological actants and notions of audiences. This paper is based on a similar understanding of some known activities, actors and actants of cross-media news work related to the coverage of the terrorist attack 22. July 2011. We know that online and print news media actively selected, filtered and distributed information related to the events, and that journalists used social media content (Konow-Lund and Olsson 2017). We know that Twitter was an important medium, that hyperlinks were used to create connections between different media and actors, and that members of the audience were gatekeepers in how news diffused through the digital news network (Steensen, 2018). Furthermore, we know that the societal response to the attack was that of a resilient society (Kaufmann 2015; Kverndokk 2013). What we don't know, and what our research seeks to find out, is what the polyvocality of the

relationship between online and print news media, and social media, looked like, how inter-connected these different media were and how trust and power was distributed.

To analyse inter-media connections during and after the terrorist attacks in Norway, we have conducted a content analysis of 1) 102 articles published online by the five most read Norwegian online news site during and immediately after the terrorist attack 22. July 2011; 2) 53 articles published in the three most read print newspapers in Norway the day after the attack; and 3) 17.609 tweets published in the Norwegian Twitter-sphere during and immediately after the attack.

Online and print articles

The online articles included in the study were published between 16:10 (45 minutes after the bomb blast in Oslo) and 22:00 22. July 2011, after the terrorist was apprehended. The five chosen online news sites were aftenposten.no, vg.no, db.no, nrk.no and tv2.no. Aftenposten, VG and Dagbladet (db) are the three most read online newspapers in Norway, while NRK is the national public broadcaster (TV, radio and online news) and TV 2 is the biggest commercial broadcaster in the country. The data from these online news sites was kindly given to us by the Danish media scholar Aske Kammer, who had downloaded the front pages and selected articles marked by “breaking news” or similar from the largest online news sites in Norway and Denmark every fifth minute from 16:10 until 20:35 22. July 2011 (see Kammer 2013 for a further presentation of this data). Through Kammer’s data, we could study the front pages and see how they changed during the afternoon, at the same time as we could open every news article linked to from the front pages.

Some of the urls from aftenposten.no were missing in Kammer’s data, but we found these articles through the news archive *Retriever* and included them in our dataset. We also included articles from 20:35 to 22:00 from *Retriever*, as the identity of the terrorist was made public later in the evening. The five online news sites had in total published 102 articles related to the terrorist attacks in the period studied. Most of these articles referred to sources in an explicit way and were therefore easy to code. Nevertheless, several of the images accompanying articles had incomplete or missing photo bylines. This made it hard to assess the original source of the image. Furthermore, as our material was six years old when we started our research, many of the videos connected to the articles, were removed, expired or not available any longer.

We also counted and categorized all hyperlinks found in the articles. 13 of the 102 articles contained only visual material (video/live broadcasting/image galleries) with no possibilities for the inclusion of hyperlinks. The hyperlink analysis therefore includes 89 articles. The hyperlinks were categorized as internal (links to content from within the same domain) or external (links to other domains), and all external domains linked to were further categorized. This process was conducted by the second author, before the coding was controlled by the first author. Intercoder reliability testing was not found necessary as the coding involved very little interpretation and was based on close to objective categories (like whether a url belonged to a Norwegian or foreign news media, etc)

We chose to include articles from the printed newspapers the following day, in order to see if they contained traces of social media content. Our selection included the three most read newspapers in Norway: VG, Dagbladet and Aftenposten. We also included one hour of live broadcast radio from NRK (public broadcaster of Norway), but there were no references to social media here.

Twitter-data

The Twitter-data was drawn from a database containing almost all of the Norwegian Twitter-sphere during and in the aftermath of the terrorist attacks. This database was acquired through Twitter's Historical PowerTrack API (see Steensen 2018 for a further presentation of this data). We extracted all tweets that contained hyperlinks and were posted between 22. July 2011 15:25 and 23. July 2011 11:00, overall 17.609 tweets. This accounted for 14 per cent of all tweets in our database during this period. The majority of the hyperlinks found in these 17.609 tweets was created by using url shortener services, so we had to use an online service to expand all short urls before we could perform our analysis. 682 of the shortened urls could not be expanded because they were no longer valid. Still, we were left with 7045 unique, expanded urls found in the 17.609 tweets.

In order to understand what kind of sources tweeters linked to during and after the terrorist attacks, we extracted all main domains from the 7045 unique hyperlinks and categorized the domains that were linked to two times or more as *Norwegian traditional media, foreign traditional media, activist forum, Blog, NGO, political party website, social media, public body, news aggregators* and *other (dead sites, meta-services, religious websites, scientific websites etc.)*. This gave us a total of 658 domains that were linked to two times or more from tweets in the Norwegian Twitter-sphere during the selected period. 144 of these domains were categorized as *other*. Many of these *other* domains were no longer in use and therefore difficult to determine, while others were services to start petitions, commercial sites, search sites, translator sites, etc. The hyperlinks that linked to these 144 domains categorized as *other* accounted for 10 per cent of all hyperlinks found in the 17.609 tweets.

Findings

Below, we will first present the findings of hyperlinks and social media content found in the online and print news outlets, before we present the coding of hyperlinks found in the Twitter-material

Hyperlinks in online news sites

Of the 89 text-based articles published in the five online news site between 16:10 and 22:00 22 July, 29 contained no hyperlinks as part of the body text. The 61 remaining articles contained on average 2.2 hyperlinks (all in all 135 hyperlinks).

Figure 1 displays the proportion of links to different domains. 104 of the 135 hyperlinks (77 per cent) were internal links, implying that each online news site predominantly linked to stories on their own site. The typical story would link to two other related stories in a "read also"-form.

Ten of the 31 external links pointed to other Norwegian online news sites, four of them to local news sites, while the remaining six were links a cross the five online news sites in the sample. Seven of the links (five per cent) pointed to international news sites (The Guardian, CNN, New York Times and Al-Jazeera), while a similar amount pointed to social media accounts (Twitter, Facebook and YouTube). The remaining eight links pointed to sites like Wikipedia, the Ombudsman for Children, a center for crisis psychology, and the web site of Oslo Airport.

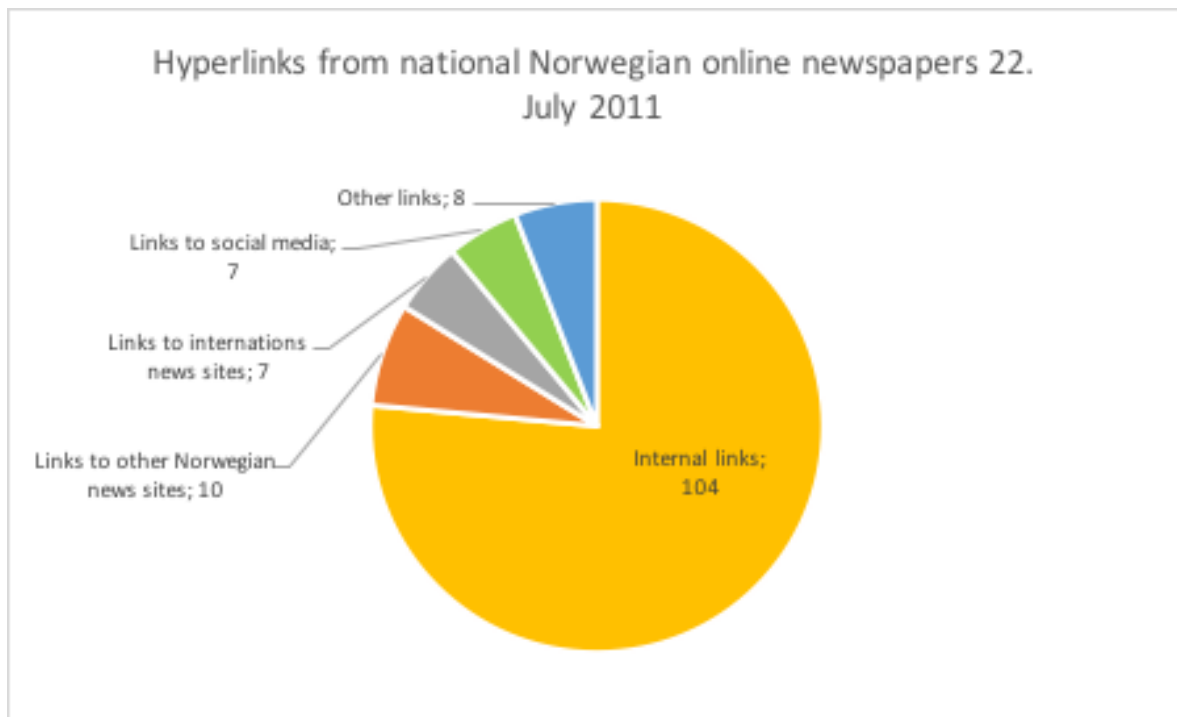


Figure 1: Hyperlinks in 89 articles related to the terrorist attack and published in dagbladet.no, vg.no, afternposten.no, nrk.no and tv2.no between 16:10 and 22:00 22. 22 July 2011.

To summarize these findings; Three out of four hyperlinks found in the body text of stories related to the terrorist attack and published in the online news sites vg.no, dagbladet.no, afternposten.no, nrk.no and tv2.no were internal links, thereby confirming previously documented trends of media protectionism (Tremayne 2006; Dimitrova et al. 2003). 90 per cent of all links were links to traditional news sites; five per cent were to social media content and five per cent to other web sites.

Sources in online and print media

Hyperlinks are not the only way of displaying sources in online news sites. Table 1 displays all sources found in the 102 online articles related to the terrorist attack and published in the five online news sites between 16.10 and 22:00 22. July, and the 53 terror-related articles published in the three newspapers VG, Aftenposten and Dagbladet 23. July.

	No of articles	Articles with SoMe-sources	Total no of SoMe-sources	All sources	Share SoMe-sources
Online news sites	102	17	28	420	7 %
Print newspapers	53	4	13	145	9 %

Table 1: The total number of sources used and sources from social media in the 103 online articles published on vg.no, afternposten.no, dagbladet.no, nrk.no and tv2.no from 15.25 to 22.00 22 July 2011, and 53 articles published in the print newspapers VG, Aftenposten and Dagbladet 23. July 2011. All articles are about the terrorist attack 22. July. 10 of the 13 SoMe-sources found in print are from one story about Twitter reactions to the event. Disregarding this article, the share of SoMe-sources drops to 2 per cent for the print articles.

17 of the online stories (17 per cent) and four of the print stories (eight per cent)

contained sources from social media. Many of these 17 online stories used more than one social media source, and the 102 stories were in general quite rich on sources, with an average of four explicit sources per story.

As is visible in table 2, the most typical social media source used by the online news sites were written eyewitness accounts from Twitter. One of these eyewitness reports was a tweet from one of the youngsters trapped at Utøya. This tweet was published while the terrorist was still shooting: "We are sitting by the water. A man dressed as a police officer is shooting. Let us know when the police is coming"

<i>SoMe source type</i>	<i>No of articles</i>	<i>Social media referred to</i>	<i>No of articles</i>	<i>Type of SoMe-content</i>	<i>No of articles</i>
Eyewitnesses	8	Twitter	13	Text	15
Extremists	4	Facebook	6	Video	2
Politicians	2	Al-Qa'ida forum	3		
Anonymous	2	Youtube	2		
Police	1				

Table 2: Characteristics of the social media sources found in the 102 online news media stories related to the 22. July terrorist attack and published in *vg.no*, *aftenposten.no*, *dagbladet.no*, *nrok.no* and *tv2.no* between 15.25 and 22.00 22. July 2011.

The four extremist sources cited in the online news sites all raised threats related to the bomb explosion in Oslo. An example is a story published on *vg.no* at 16.50 containing some speculations on who could be behind the terrorist attack. In this story, a named user from al-Quida's online forum *Al-Shmukh* is ascribed the following quote: "This is a warning to the Norwegian prime minister. You have to leave Afghanistan in a short time, a grave for your soldiers. Otherwise blood will pour down your streets".

The two politicians cited in the online news sites appeared in a story on reactions from political leaders around the world, most of whom were cited through official statements, but some through their tweets, like the following tweet posted by the Swedish foreign minister Carl Bildt: "Terrorism has struck. Police confirms bomb in Oslo. We are all Norwegians."

The two anonymous or unknown social media sources cited in the online news sites both contained speculation on who the terrorist could be, like in a story published on *vg.no* at 16.50 citing "many observations on Twitter" claiming that "there must have been foreigners who did it, as the attack happened after 15 pm on a Friday. A Norwegian would have known that almost no one was working at that time."

The print stories published in VG, Dagbladet and Aftenposten the morning after the attack contained comparatively fewer references to social media content. In fact, we only found references to social media sources in Aftenposten. One of the four Aftenposten stories containing social media sources was a story on Twitter reactions to the terrorist attack. This story cited ten different Twitter users, mostly celebrities, and therefore account for 77 per cent (10 out of 13) of the social media sources found in the 53 print stories.

The three other print stories containing references to social media all refer to one social media source each. We find here the same threat from the al-Qa'ida forum also published in online news sites the day before, and we find the tweet from PST also found in online news sites 22. July. The final social media reference is a tweet from an eyewitness.

The following points summarize the findings of social media connections in online

and print articles about the terrorist attack:

- The 102 online news stories covering the attack published between 16.10 and 22.00 22. July 2011 in five major Norwegian online news sites used hyperlinks extensively but linked predominantly to other stories published on their own site.
- The online breaking news stories were rich on sources, and 7 per cent of these sources were from social media.
- Twitter was the main social medium referenced in the online news sites, and the main function of these references was to provide eyewitness accounts of the unfolding events.
- The print stories contained fewer references to social media. Only four of the 53 print articles analysed contained social media references, and the main function of these references was to provide reactions to the terrorist attack.

Hyperlinks from Twitter

As the findings above show, Twitter was the main social medium referenced in online and print newspapers. We will now turn to our analysis of the Norwegian Twitter-sphere and the 17.609 tweets published between 15.25 22. July and 11.00 23. July that contained hyperlinks.

Figure 2 displays an overview of the type of domains that these hyperlinks pointed to. Only domains that were linked to two times or more are included here, which means that 6 per cent of the hyperlinks are disregarded.

Links to social media sites were the most dominant group of hyperlinks in the Norwegian Twitter-sphere 22. and 23. July, suggesting that Twitter users predominantly referred to other content on social media. The most important social media service in terms of number of hyperlinks was twitpic.com (915 hyperlinks), an image sharing service that allowed Twitter-users to share images on Twitter. In 2011, Twitter did not automatically allow sharing of images in tweets, but [Twitpic](http://twitpic.com) was acquired by Twitter in 2014 and thereby incorporated in its service. Other image sharing services like yfrog.com (649 links) and imgur.com (588 links) were also important, as were links to YouTube (470 links), other Twitter-posts (428 links) and Facebook (382 links).

Links to Norwegian news media were the second largest category of hyperlinks (22 per cent of all links). The dominant sites in this group were nrk.no (the national public broadcaster) with 646 links, followed by the national online newspapers dagbladet.no (541 links), vg.no (488 links) and aftenposten.no (328 links) and the commercial broadcaster tv2.no (287 links).

The third largest group of hyperlinks pointed to foreign news media (13 per cent of all links). BBC (545 links) was the most important foreign news source, followed by various CNN domains, The New York Times and The Guardian.

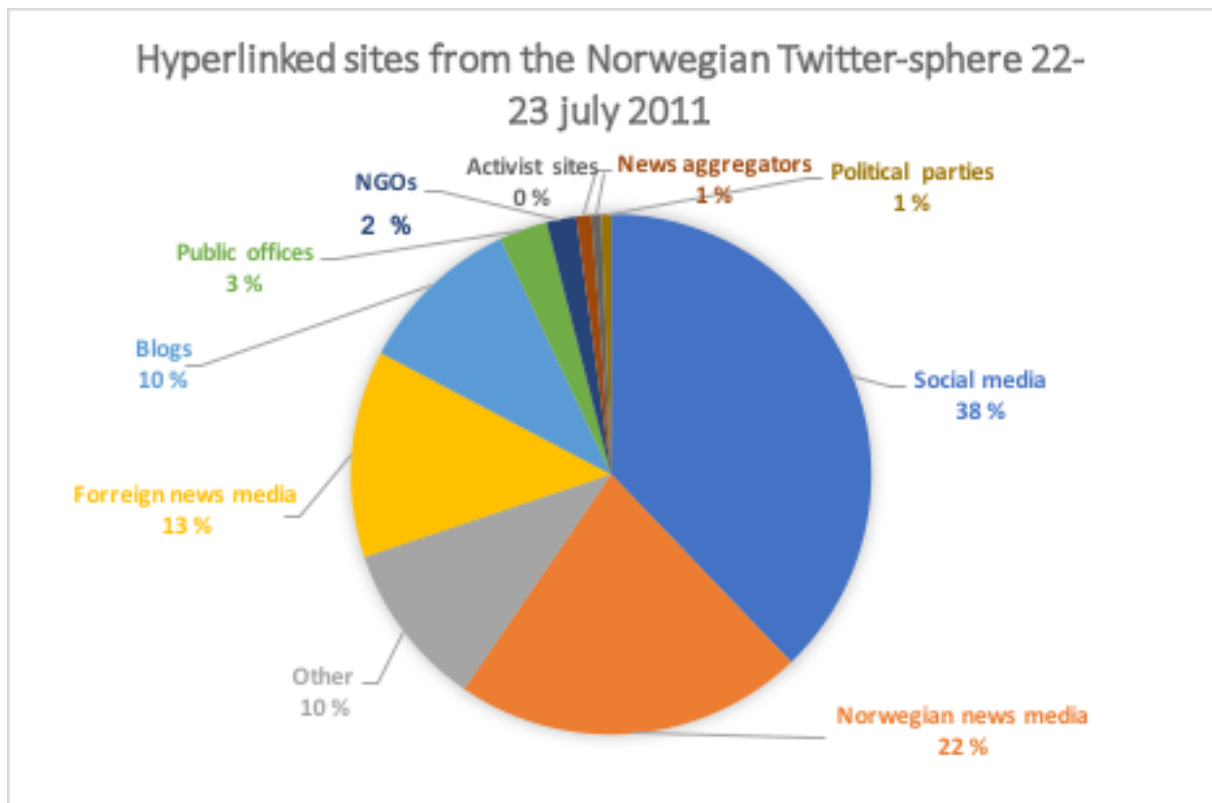


Figure 2: Hyperlinks to different kinds of domains from the Norwegian Twitter-sphere 22. July 15:25 to 23 July 11:00. Domains that were only linked to once are omitted. N = 16609.

If we look more closely at the acute hours of the terrorist attack, between 15.25 and 18.00 22. July 2011, we see that the national public broadcaster NRK is the most common domain to link to (see figure 3). Eight of the 20 most popular domains linked to during these hours were news sites, five Norwegian (NRK, Dagbladet x 2, VG, Aftenposten and TV 2) and two international (BBC and CNN). The links to these eight sites account for 27 per cent of all links during the acute hours, so these major news providers were dominant content contributors to the Norwegian Twitter sphere during the terrorist attack.

Eight of the ten most shared links during the acute hours were stories from the major news outlets, five from Norwegian online news sites (two stories from NRK, one from Aftenposten, TV 2 and Dagbladet), two stories from the BBC and one from CNN. The two remaining top-ten links were images published at image sharing services (Demotix and Yfrog). The image shared on Demotix – an image sharing service that in 2011 served as a hub for freelance photographers – was in fact the single most shared hyperlink in the Norwegian Twitter-sphere during the acute hours of the attack. This imaged, taken by an eyewitness, was shared 134 times from 15:25 to 18:00 22. July.

The second and third most shared link during the same period was BBC's (121 shares) and the NRK's (111 shares) breaking news story on the Oslo bomb.

DE

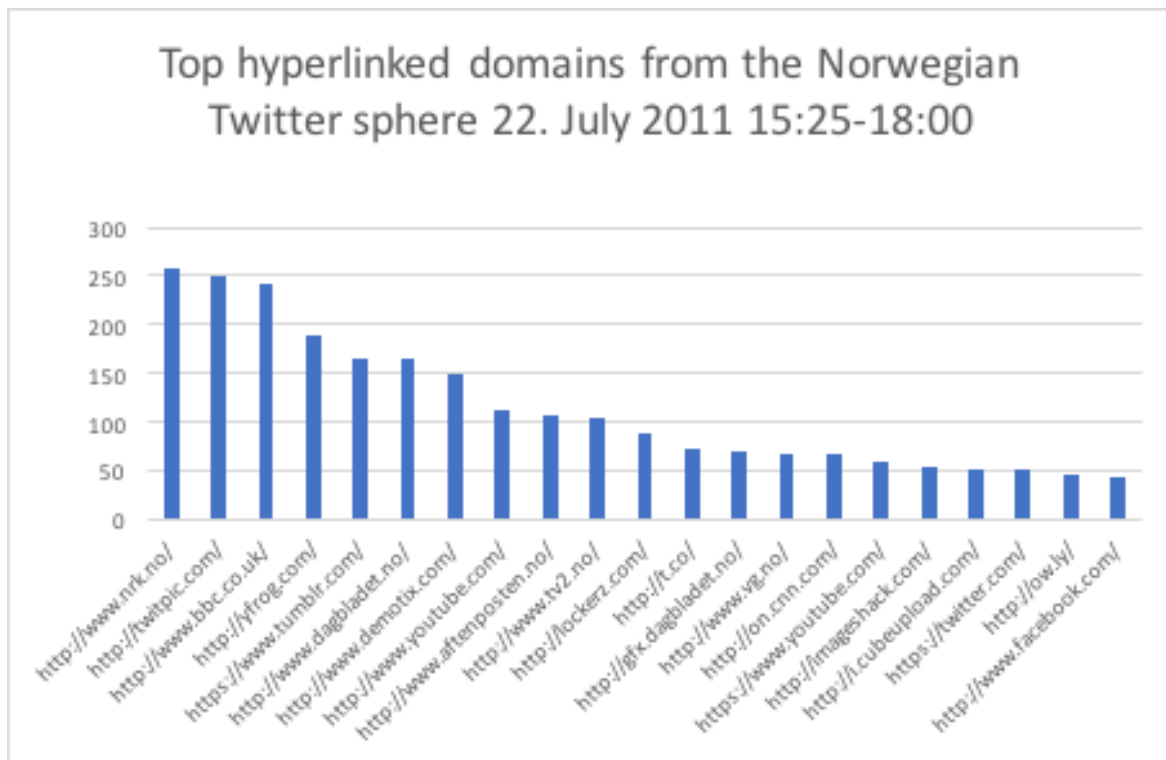


Figure 3: The 20 most linked to domains during the acute hours of the attack. These domains account for 27 per cent of all links from the Norwegian Twitter-sphere during the acute phase of the attack.

The findings of the hyperlink analysis of the Norwegian Twitter-sphere 22 and 23 July 2011 can be summarized in the following points:

- Social media content was the dominant type of content linked to from Twitter. Half of the hyperlinks pointed to either other social media, image sharing services or blogs.
- 35 per cent of all links pointed to traditional news media, 22 per cent to Norwegian news media and 13 per cent to international news media
- Norwegian news media were more dominant as linked-to sources during the attack than in the aftermath of the attack.

Discussion

The findings presented above reveal that traditional news sites were more dominant as sources of information on Twitter than vice versa. This finding is especially apparent during the acute phase of the terrorist attack, when 27 per cent of all links on Twitter pointed to journalistic news sites and 8 of the ten most shared hyperlinks pointed to Norwegian and foreign news media. In terms of inter-media connectivity, traditional news sites were important influencers, and therefore powerful actors, on Twitter and represented authoritative voices regarding the unfolding events, while print newspapers were to a much lesser extent influenced by social media actors. Traditional media, in the form of the online outlets of legacy news institutions, were therefore trusted sources of information in the Norwegian Twitter-sphere during and immediately after the terrorist attack. This might be considered a strength in times of crisis, because it creates resilience through the reduction of polarized polyvocality. However, this finding also supports the notion of what Meraz (2009) labels the “elite bias principle” of open networks like social media platforms, in which power often is concentrated in the hands of a few dominant actors. Such elite bias has been a

common finding in studies related to inter-media agenda-setting in political communication (Ceron, Curini, and Iacus 2016; Vonbun, Königslöw, and Schoenbach 2016).

The findings also support previous research on the significance of media protectionism, e.g. that a medium prefers internal over external linking. 77 per cent of all hyperlinks in the online news sites studied were internal links to stories published by the same news site. We find a similar, yet less significant, tendency on Twitter. The high amount of links to other social media content from Twitter-users found in our material suggests that social media content was preferred for social media users. However, we should not put too much emphasis on this finding, because many of the social media links found on Twitter in our material were links to image-sharing services deemed necessary because of the incapability of Twitter as an image-sharing platform in 2011. Still, the fact that people shared images uploaded to image sharing services instead of for instance sharing images posted on online news sites, suggests a tendency towards favoring social media content over mainstream media content.

Even though we find some strong connections between the different media, especially between Twitter and online news sites during the attack, the media protectionism discussed above made the Norwegian media scene less polyvocal than one perhaps would have expected, especially in the aftermath of the attack. The Twitter-sphere was by far more polyvocal than online and print newspapers. Nonetheless, the findings show a strong degree of inter-connectivity between Twitter and online, legacy news providers. Twitter was the main social medium referenced in online news sites, and online news sites were heavily linked to on Twitter. The analysis of sources in both online and print newspapers revealed that both these platforms were quite polivocal, in the sense that the average story contained quite many sources. The Twitter-sphere was also quite polivocal, as it contained a vast number of hyperlinks leading to a diverse group of sources of information. Steensen (2018) found that the Norwegian Twitter-sphere during and after the 2011 terrorist attack was dominated by a very diverse group of actors, including journalists, politicians, young Justin Bieber-fans and ordinary citizens, with the top ten most active and most retweeted actors only accounting for about four per cent of the total amount of tweets and retweets posted during and immediately after the attack. However, this polivocality did not extend to the themes and topics, as the Twitter-sphere, especially during and immediately after the attack, was quite uniform. The ten most used hashtags 22 and 23 July 2011 in the Norwegian Twitter-sphere accounted for 60 per cent of all hashtag-use during this period, according to Steensen (2018). The most popular hashtags were expressions of support and comfort (like #prayfornorway and #prayforoslo).

This uniformed polivocality, combined with the inter-dependence between online news sites and Twitter, might be an explanation for why the Norwegian public sphere was perceived as displaying a collective response to the attacks, as found by Kverndokk (2013) and partly also Eriksson (2016). Even though a collective response does not necessarily mean societal resilience, the combination of polivocality and a strong sense of collectivity no doubt made the discursive practice of news in Norway capable of creating resilience. People had the means and opportunities to express themselves, to get information from trusted media outlets and to be part of a nation-wide collective community, in which feelings of belonging were strong. Moreover, these feelings coincided with how the government and public bodies responded, even though neither the government nor public bodies like the police had a strong presence on Twitter during and immediately after the attack (Ottosen and Steensen 2018).

The study presented here does, however, have some limitations. First, analyzing hyperlinks does not account for the framing of the content shared, for instance whether the content linked to is critiqued or praised, considered trustworthy or not. The findings are therefore based on the assumption that the more linked to a specific domain or piece of content is, the more trusted it is in the network. Previous research provides some support for this assumption (Finkelstein 2008), but in order to secure validity, this assumption should ideally be tested through for instance qualitative investigations of the contexts the links are part of. Second, analysing hyperlinks in the Twitter-material means that the majority of tweets posted during the selected period was disregarded, as only 14 per cent of the tweets contained hyperlinks. The remaining 76 per cent of tweets might contain inter-media connections in other ways than via links, for instance by mentioning online news media or other media. Including mentions in the analysis could therefore have strengthened the validity, but since the number of tweets analysed was quite high (17.609 tweets), it is fair to assume that the tweets analysed are representative even though they only account for 14 per cent of all tweets. Third, the study does not account for how other social media platforms, like for instance Facebook, affected the discursive practice of news. Previously conducted qualitative analysis of Facebook content published during and in the aftermath of the attack suggest that the same collective response as found in this study also dominated Facebook (Kverndokk, 2013), but the outreach of this response and the presence of counter-responses on Facebook remains unknown. Fourth, since only a few online news sites were studied here, we don't know how inter-connected they were with other news sites. Previous research has shown that the Norwegian news landscape is quite diverse and has a higher degree of inter-connectedness and distribution of power than in the neighboring countries Denmark and Sweden (Sjøvaag et al. 2018). We can therefore suspect that an analysis of a broader spectrum of news sites would have revealed an overall higher degree of polyvocality.

Conclusion

This study has investigated information flows and inter-media connectivity during and in the immediate aftermath of the 22. July 2011 terrorist attack in Norway. The purpose of the study was to answer the following two research questions:

RQ1: How polivocal and inter-connected was the Norwegian discursive practice of news during and immediately after the 22 July 2011 terrorist attack?

RQ2: What can an analysis of the 22 July 2011 case tell us about the characteristics of a public sphere capable of creating societal resilience in times of crisis?

Regarding RQ1, the findings reveal that legacy online news providers were important as sources of news in the Norwegian Twitter-sphere, and that social media, especially Twitter, were important sources of information in online news sites, but to a lesser extent. These platforms were therefore inter-connected. The Norwegian discursive practices of news, as analysed in this study, was therefore marked by what has here been labeled "uniformed polivocality", implying that many voices were expressed and heard, many sources of information were utilized, but they all came together in a collective response to the crisis. The level of inter-connectivity between legacy news institutions and Twitter suggests that these news institutions were considered trustworthy by the Twitter-

community. They were therefore powerful actors in the discursive practice of news related to the terrorist attacks and they were thereby key contributors to the uniformity of the polivocal discursive practice of news. The findings of this paper suggest that this uniformed polivocality was key to the formation of societal resilience to the crisis, because it allowed people to express themselves, to have access to trusted sources of information and to share a collective response to the crisis.

Regarding RQ2, the combination of polivocality and uniformity seems to have relevance beyond this one case. Polivocality implies that people have access to express themselves and share information publicly. Uniformity implies that there exist at least a few important sources of information trusted by a large majority and that these sources of information connects with the media platforms on which the public express themselves and share information. Without this interaction between the trusted and powerful elite media and the many voices of the public on platforms like Twitter, creating resilience through the discursive practice of news would be difficult. The challenge in modern democratic societies is that the public spheres are getting increasingly fragmented as new social media platforms attracts users and as alternative media gain traction. The more fragmented the public sphere becomes, the more difficult it is to establish trust and high degrees of inter-connectivity between the various media and platforms. For legacy news institutions it is therefore important to keep up a presence on all platforms and keep the level of inter-connections high. The days of the monovocal press are over. Legacy news institutions need to embrace the polivocal public sphere and accept that the discursive practice of news in modern societies involves many gatekeepers, activities, media and platforms. This study suggests that having strong and trusted elite media is still important to a society's resilience to crisis. Future research should therefore look more closely into how polivocality and uniformity are, and can be, combined in other cases of discursive practices of news related to crisis situations.

The methodology developed in this paper can be helpful in such future research, especially if a broader range of social media, including Facebook, is analysed. Analysing the diffusion of hyperlinks in – and across – social media and compering this to uses of hyperlinks and sources in legacy – and alternative – media is one way of assessing the magnitude and variety of the sources people relate do, how trust and power is distributed in the discursive practice of news, and how networked and inter-connected this discursive practice is.

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