

The Audience as Investigator

Open-Source Spaces in Investigative Journalism

Nina Müller

Master Thesis

Investigative Journalism

University of Gothenburg

Second Cycle 2019

Jenny Wiik (Supervisor)

Maria Jervelycke Belfrage (Examiner)

Report Number

Abstract

Journalism, a discipline traditionally formed by a variety of disruptions, currently faces a disruption with global dimension: The digitalisation represents a democratisation of content, which allows various kinds of new actors to enter the journalistic stage. Thus, the internet heralded an era of fake news and post-truth, which left journalism almost voiceless. Yet, the up- and-coming phenomenon of open-source in journalism led by non-journalistic actors like Airwars, Bellingcat and Forensic Architecture use these new developments for investigations on a universal scale. With novel methods and tools they show how the audience – which before was handled as a passive mass – could be integrated in their reporting and be transformed in active participators. This shift towards a news, image and investigative literate public represents a chance especially for investigative journalism. The open-source investigators transform the traditional role of the journalist as “controller” and “gatekeeper” into an enabler of free collaboration and they open its “gates” towards new spaces, here called auditoriums, to find their voice and to address new audiences.

Foreword

Special thanks to Maria Jervelycke Belfrage, Jenny Wiik, Eliot Higgins, Ben Strick, Robert Trafford, Christiaan Triebert, Chris Woods, Rajmonda Rexhi and Emil Hellerud.

Table of Contents

1. Introduction	5
1.1 Background	5
1.2 Phenomena	6
1.3 Purpose, Aim and Research Question	9
2. Theoretical Framework	12
2.1 Journalism in the Post-Truth Era	12
2.2 The Journalistic Persona	14
2.3 Journalism's Jurisdiction	15
2.4 Competitive Becomes Collaborative	18
2.5 Collective Intelligence	20
3. Methodology	24
3.1 General Research Design	24
3.2 Interview Process	26
3.3 Selection of Experts	27
3.4 Presentation of Interviewees	28
4. Empirical Findings, Interpretation and Discussion	30
4.1 The Novel Actors	30
4.1.1 Jurisdiction in Open-Source	30
4.1.2 Collaborating with Legacy Media	33
4.1.3 Collaborating within Open-Source Boundaries	36
4.2 The Novel Actants	37
4.2.1 Algorithm Intelligence	37
4.2.2 Human Intelligence	38
4.3 The Novel Activities	42
4.3.1 Storytelling with Open-Source	42
4.3.2 Aesthetics in Open-Source	45
4.4 The Novel Audience	46
4.4.1 Fact-Checking Recipients	46
4.4.2 Investigating Recipients	47
4.5 The Novel Auditoriums	48
5. Conclusion	51
Reference List	53

1. Introduction

1.1 Background

An image composed of grey pixels. It shows a bomb cloud from above, taken from a satellite, capturing the explosion of a house, and with that the death of human being. This is how war can look like in the conflicts of the twenty-first century, of battlefields which sometimes take place – from a Western perspective – in the remotest areas of the globe. However, war is a city phenomenon nowadays and weapons are designed to kill with precision. They can “discretely” pierce the roof of a house, permeate its floors and detect inside of the building, not seldom in a living or a bedroom.

Battlefields are dangerous and it is indisputable that journalists cannot be present in every single crime scene. However, they can still follow the conflict, every day, maybe even every minute or second. And not only by satellite imagery which on the smallest scale is still marked by blurring contours and divided into static, monochrome squares, but also in the form of photos, tape recordings, videos – in high resolution, in high fidelity. All this is made possible by recent digital developments, especially smart phones and sharing platforms such as Twitter or Facebook, in short: the internet (which is paradoxically a military invention itself).

With these inventions the people in conflict zones share their experiences on the world wide web, possible to be explored by everybody. In no time in history conflict has been documented in such detail as the wars happening today. But also, surveillance cameras, blogs and many other publicly available information as well as documents make it possible these days to trace criminal and violent occurrences. Big data, with all its risks concerning the protection of citizens' privacy, in the context of clarification it offers a diversity of potentials.

This new circumstance does not only concern the work of prosecutors, it also turns the spotlights onto journalism. Especially investigative reporting is encouraged to explore the massive amount of data material now easily accessible as well as the new possibilities in

offered by technological developments. They not only provide new tools, methods and meeting points to conduct investigations on an advanced level, but also offer novel formats and spaces to publish them. More practically, this first means that the process of researching material and collaborating with other investigators becomes possible across borders, with international teams and even in the remotest areas. Second, the act of publishing can take unexpected storytelling forms and third, they can be presented in so far untypical spheres.

1.2 Phenomena

“Anatomy of a Killing” is an example of an investigation embracing these new opportunities. The story material is based on a video shared on the internet, first by one person, later by thousands of thousands of users. Via the internet investigators from different countries connected each other to collectively investigate the murder of two women and their young children in Africa last year. Their method can be described as a deconstruction of a video into its multitude of single images, again carrying various information in themselves. Reassembling the relevant details found by this form of dissection enabled them to find facts and to finally create a full picture of the identities of the perpetrators, later hold accountable by the Cameroon government.

By applying novel open-source approaches, the investigation represents a ground-breaking moment in case detection. But the contributors (Amnesty International, Bellingcat, and independent Twitter analysts) and the involved news organisation BBC Africa Eye also decided for a novel and experimental way of reporting. They published the story in a Twitter thread. Thus, they came to full circle, by publishing in the space where the original material came from. In there they give a step by step explanation, almost like a manual for how the investigation was conducted. Like that they made the medium the method and method the medium.

Marshall McLuhan who with his media classic “The Medium is the Message”, published in 1967, proves to still have an astonishing importance for today’s media. But it seems that the media have changed tremendously. McLuhan observes that the content distracts or blinds the audience for the medium from which it comes from. In the mentioned example

however, the reporters give special attention to the characteristics of the medium, both by choosing a novel publishing format and space and by using Twitter's thread structure for a detailed investigative description. When McLuhan states that the new media embodies an extension of man this theory here becomes almost literal. By first making transparent their thinking and second by selecting a medium known for its sharing and commenting functions The BBC Africa Eye investigators indeed reach out to the audience and reduce the distances between reporters and recipients.

One can also note that they made their investigation possible by building an investigative community and by sharing material. They borrowed it, investigated the content and then gave it back to an even wider community, the crowd, enabling further discussion and discourse, hold publicly and transparently. This was an experimental and even revolutionary step for a legacy media organisation like the BBC, neither seen as transparent nor collaborative, but it successfully paid off.

And this is by no means an individual case. Long-standing news media organisations, usually perceived as highly competitive, are currently exploring a new phenomenon of collaboration, experiencing an open-source momentum lead by non-journalistic investigators. Some of the most compelling collectives and agencies are Airwars, Bellingcat and Forensic Architecture. They are all based on open-source methods which means that they use material found on the internet and reassemble it to detect historical and contemporary occurrences. Often tools and methods are similar and sometimes they also cooperate with each other. Their specialisations and missions however can differ fundamentally. The following portrayals shall give an overview over their unique profiles.

Bellingcat was founded by Eliot Higgins in 2014 with the help of private donations acquired via a Kickstarter project. Today the independent collective of international researchers, investigators and citizen journalists from more than 20 countries is based in The Hague. With publicly available data, social media and open-source methods the award-winning team investigates conflict, crime and human rights abuses. Bellingcat cooperates with different journalistic and legal representatives and offers comprehensive open-source workshops to a range of interested parties, mostly journalists and activists. The aim is to

build up a bigger community which helps pursuing further open-source investigations. Investigations by Bellingcat are repeatedly published by international news media. One of them was the identification of the suspects, two Russian intelligence officers, in the Skripal poisoning. The team was also involved in the awarded BBC Africa Eye investigation, “Anatomy of a Killing”. Bellingcat claims to be independent. Currently the collective receives grants from Porticus, Adessium, The Open Society Foundations, The National Endowment for Democracy, Pax for Peace and the The Dutch Postcode Lottery. About one third of the budget comes from the worldwide held workshops. Bellingcat partners with the Open Information Partnership as well as the Global Legal Action Network and is part of the Global Investigative Journalism Network.

Forensic Architecture is based at Goldsmiths, University of London and was founded by Eyal Weizman in 2011, a Professor of Spatial and Visual Cultures of the same university. The agency is specialized in advanced spatial and media investigations and explores cases of human rights violations. Therefore, Forensic Architecture cooperates with and on behalf of communities affected by political violence, human rights organisations, international prosecutors, environmental justice groups and media organisations. The interdisciplinary team – composed of architects, software developers, filmmakers, investigative journalists, artists, scientists and lawyers – presents their investigations in international courtrooms, parliamentary inquiries, United Nations assemblies as well as in citizens’ tribunals and truth commissions. Their work has been published by international media. Forensic Architecture also holds lectures and workshops, is responsible for various publications and takes part in exhibitions. The agency is supported by academic, human rights, technology as well as arts grants and receives income from commissioned investigations and from exhibitions. Forensic Architecture claims that all income generated is used to support ongoing research and that the founding institutions and organisations do not influence their projects.

Founded in 2014 by the investigative reporter Chris Woods, Airwars is a collaborative, not-for-profit transparency project including professional researchers and analysts with the aim to track civilian harm. The headquarter of Airwars is based in London where it is affiliated with the Department of Media and Communications at Goldsmiths, University of London. It

also has a satellite European office in Utrecht in The Netherlands. Airwars additionally works with contributors based in the Middle East, Europe, North Africa and North America. The team tracks and archives international military actions in conflict zones such as Iraq, Syria and Libya. Airwars also draws on a number of information sources such as NGOs, monitoring groups, international and local news agencies, social media and from military as well as other government sources. They besides others provide journalists with independent, trustworthy assessments. Airwars, claiming to maintain independence, is funded by philanthropic organisations and by public donations as well as with significant pro bono contributions from volunteers. Key support comes from the Joseph Rowntree Charitable Trust, the Open Society Foundations and the Democracy and Media Foundation/Stichting Democratie en Media.

1.3 Purpose, Aim and Research Question

These new actors on the journalism stage, here embodied by Airwars, Bellingcat and Forensic Architecture, use novel methods and tools to investigate incidents of crime and violence. They, depending on their individual focus, produce investigative archives, reports and journalistic pieces as well as exhibitions. To present their work to the public they collaborate with the media, but also with different legal, social or even artistic registers. This is made possible because their work offers a variety of intersections with other fields and disciplines.

In this thesis their collaborative work with journalism and especially with investigative journalism is in the focus. It will explore how these open-source agencies work, which tools they use and how they play a vital role in processes and productions of journalism. It will also show how people from originally non-journalistic fields such as architecture, law, film making, design, military or art bypass investigative and journalistic limitations and like that contribute to a creative contemporary media production – all with the help of the public and for the sake of society.

Let alone for the sake of journalism itself. Fake news and citizen journalism have challenged journalism's jurisdiction and created a fear of losing control, legitimacy and economic viability. Already in 1967, Marshall McLuhan had an answer to that when he

stated: “Innumerable confusions and a profound feeling of despair invariably emerge in periods of great technological and cultural transitions. Our 'Age of Anxiety' is, in great part, the result of trying to do today's job with yesterday's tools – with yesterday's concepts.” Have media scientist and journalistic practitioners learned from that?

This study, based on a theoretical and an empirical exploration of collaborative journalism, shall not only give an answer to the provocatively posed question above. Its main research questions are: How do the here discussed open-source actors collaborate with some of the most renowned legacy media organisations of today? How have their competencies produced outside journalism's subject area recently been integrated in selected legacy media formats? And how might established media organisations, with the influence of open-source-based contributions, reorient themselves in the future?

Hence, the thesis examines novel interdisciplinary work methodologies for investigative journalism. It focuses on the adaption of non-journalistic tools and collaborations between journalists and professionals from various disciplines. Moreover, it will picture workflows, measurements and mentalities typically coming from sharing cultures. Finally, it will offer an outlook to up-and-coming means of publishing and diversification of content.

Thus, this thesis will fill a research gap as the field of open-source is still underrepresented in journalism studies. Bellingcat is rarely mentioned¹. Forensic Architecture and Airwars until now do not get any scholarly attention. In journalistic practice however, they are a repeatedly cited source and therefore stand for a main paradigm shift from competitive to collaborative work and the practical usage of open-source methods. The reportage “Anatomy of a Killing” is one of the most celebrated examples of open-source investigating and is therefore used as example here. Yet, all of the here mentioned agencies have already had an impact on investigative reporting and they can certainly stand as role models for future developments in journalistic practice and science.

Former scientific studies explored the perceptions of external collaborators among

¹ Several international newspapers have published articles about Bellingcat, often with a rather worshipping tone. In some of them however one can find critical voices. A few journalists (including the Russian international television network RT) describe the collective as pro-NATO. Also, the method of forensic analysis used by Bellingcat is criticized by experts for not being exact.

journalists as to whether they are recognized as journalists (Carson & Farrell, 2018 and Eldridge II, 2018). Other researchers have created a definition of the diverse forms of technology-savvy strangers in journalism which will be discussed further on (Holton & Belair-Gagnon, 2018). Also, the integration of knowledge, the so-called "normalization", is a research area of recent journalism studies (Lewis & Usher, 2014). Another research object was the field of tension between actors, actants, audience and activities, or in other words the relations between people, technology, recipients and routines in the media. As central to this thesis, the study around these components in media, will be discussed and expanded later on.

2. Theoretical Framework

2.1 Journalism in the Post-Truth Era

It could be said that journalism, or the way we understand it today, owes its existence to a disruption. The invention of new printing techniques in the beginning of the twentieth century led to an enlarged newspaper production for a wider audience and like that actually describes a revolutionary moment in history. It represents “a shift from an elite-oriented press to a mass popular press” (Broersma & Eldridge, 2018, paragraph no. 4) as well as the professionalizing of the journalistic field (paragraph no. 22). This turning point however, is not an isolated case, on the contrary. Eldridge's and Broersma's study, which monitors various kinds of technical and social influences in the media like for instance the inventions of radio or television, show that journalism has always been disrupted – up until the recent past.

As the term disruption has become quite fashionable recently and is now used almost inflationary for innovation topics in numerous disciplines, it should be used with care in a scientific study. Still, one can affirm that the internet has shaken and therefore disrupted journalism in an unexpected dimension. Its rise brought a democratisation of content, and democratisations usually overthrow the powerful. Journalists who over centuries had the monopoly over information could observe how digital technologies have made it almost child's play to create, publish, and share content. Information became unlimited, for almost everybody. The result was not only a blurring of boundaries between journalism and the public. The digitalisation also meant that from now on information was “no longer scarce, hard to produce, nor difficult to publish”. A development which created the “setting for citizen(s)journalism” (Lewis, Kaufhold & Lasorsa, 2010, p. 165).

One can call this the breeding ground for a new phenomenon, or even a new discipline, but for legacy journalism, according to Lewis, it represented an essential threat. He (2012, p. 838) argues that journalism is an “industry model built on scarcity”. The explosion of content in the digital era challenged journalism's control over it and like that also the historically grown role of the gatekeeper. What strengthened the new development is the sheer speed it came with. Changes caused by digitalisation are swift and extensive, write

Eldridge and Broersma (2018).

This blurred the boundaries between journalists and the public (Lewis, 2012) and finally led to an identity crisis in journalism. Compared to other professions, journalism has a relatively unclear and vague profile, maybe even multiple profiles. Hence, Lewis (2012, p. 842) calls journalism “malleable” and “evolving”. Digitalisation greatly contributes to these features. However, there are also other causes rooted deeply in its character. Bromley (2019, p. 13) claims that journalism is an open occupation because of a lack of educational or knowledge restrictions, technological boundaries and formal standards. Lewis (2012, p. 840) adds to this the “transferability to public relations” and one can also mention the fact that journalism is not a profession protected by law.

Before this backdrop of permeability, transferability and inclusiveness, how did journalism manage to built up a strong position in society as the Fourth Estate? To understand the bigger picture it makes sense to examine journalism's territory in detail. Lewis (2012) borrows the term ‘boundary work’ from the sociologist Thomas F. Gieryn who originally researched the delineation between the field of science and 'non-science'. By using this concept, Lewis intends to describe the “efforts to establish and enlarge the limits of one domain’s institutional authority relative to outsiders” in journalism (p. 841). Creating social boundaries, he claims, shall bring not only greater cultural but also material resources for insiders.

However, the former cultural and material resources got out of the hands of journalists and with the rise of the internet they started to fear their professional “logic” and legitimacy for their profession (Lewis, 2012, p. 839). Among other researchers, McNair (2019) even noticed a widespread anxiety in journalists. But this was not the only threat. The blurring boundaries additionally challenged the discipline's economic viability as content has not only been journalism's work material but also a kind of currency.

Indeed, the rise of the internet has led to economic pressures, extensive newsroom cutbacks as well as significant numbers of unemployed journalists. Journalist who saw themselves as working on behalf of the public interest and who had established a strong

role as the Fourth Estate, now feared their control, power and commercial stability. But this was not the only new challenge. Novel media participants enriched journalism in the same way as they questioned them.

2.2 The Journalistic Persona

Whistle-blowers like WikiLeaks, entering journalism represent the latest earthquake in journalism's territory. According to Broersma and Eldridge (2018, paragraph. no. 9), they describe a phenomenon which "continues to disrupt notions of news and journalism to this day". The authors however also describe that they paved the path to new approaches in journalism. Now one can argue, that the historic example from the Victorian Era represents a plain technological disruption which left the journalistic profession relatively untouched. Without damaging and dismissing the important social value of whistle-blowers, one can state on the other hand that their entrance into journalism indeed shakes the core of what journalism has been so far.

Above all, this new disruption evokes questions around the current journalistic squad, the crew or the cast. While journalists had the leading roles on the stage of journalism, now incoming actors like Edward Snowden, Chelsea Manning or Julian Assange stole the show from them. So far, journalists have been in charge of the what, when, where, why and so what. In a world in which information can be easily published on a leaking platform, the five 'w's could now be addressed towards journalists themselves. Even though, Julian Assange, the founder of WikiLeaks, can be called a programmer, a political activist or a computer hacker he claimed to be an investigative journalist. It is time for journalists to rethink their role and reposition themselves.

Time and again researchers occupied themselves with the position or definition of journalism. The following text gives an overview over the recent studies. For instance Lewis (2012, p. 842) investigates "what qualifies one to claim a place in journalism" and concerns himself with the question of how to classify good journalism. For a first general classification he differentiates between professional and amateur, producer and user as well as journalist and non-journalist but interestingly, he also makes a distinction between the ideal-typical understanding of a profession and its everyday practice. Other scholars

address the ideal-typical journalistic persona by reverting the question. They wonder who actually is *not* a journalist.

For a first clarification, Eldridge (2018) brought in the term “interlopers” to name WikiLeaks or non-profit news organizations like ProPublica. His research will later be looked at more in detail. Holton and Belair-Gagnon (2018) notice a generalized labelling of media outsiders and warn of a conflation and devaluation of outside media contributions. They claim that traditional definitions of what it means to be a journalist are challenged (p. 70) and one could say they fight for a broader, more heterogeneous journalistic crew.

Therefore, Holton and Belair-Gagnon took up Eldridge's term “interlopers”, refined it by the adjective “technology-oriented” (p. 73) and committed themselves to a more detailed differentiation of new actors entering the journalistic stage in the last two decades. For a clearer demarcation of media contributors such as amateur journalists, bloggers, mobile app designers, programmers and web analytics managers the researchers found the three typologies “explicit interlopers”, “implicit interlopers” and “intralopers”.

In all these studies referring to the *to be or not to be* in journalism occurs a pattern. The new media actors who push into journalism provoke a certain insecurity in the ones that so far self-confidently called themselves a journalist. However, not only these strangers but also a variety of contemporary phenomena challenge the long untouched and mighty role of journalism, forcing journalists to rethink their purpose, accountability and legitimation as well as their routine working tools and materials. To get a better understanding of journalistic self-perception but also of the relevance of the journalistic “interlopers” one has to look at journalism in the context of jurisdiction.

2.3 Jurisdiction of Journalism

Jurisdiction describes the authority, or the exclusive right granted to engage in a defined field of responsibility. However, researchers have quite different understandings of what it means. For Lewis (2012, p. 837) jurisdiction in the context of journalism means to produce quality of work for the sake of society and “to govern a body of knowledge”. In other words, he describes jurisdiction as “displaying what a profession knows” and “connecting that to

what the profession does”. Or “its system of abstract knowledge” and “its labor practices” (p. 840).

It appears interesting at this point to include the thoughts of Forensic Architecture founder, Eyal Weizman (2014, p. 71), who explores the etymology of the word “jurisdiction” in a different way. He notes that the first part of it (juris) “refers to a legal authority or right” while the second part (diction) refers to “speech”. In the further discussion he also brings in terms such as “authority” and “speech space”. While in other professions this definition applies more metaphorically, in the journalistic profession they match directly (and they will have an increasing relevance in this thesis). One could say that journalists literally dominate such a “speech space” and they also literally have the “right to speak”.

The “authority”, mentioned by Weizman is an aspect of journalism which one can find in various forms in the studies of journalism researchers. Lewis, Kaufhold and Lasorsa (2010) name the journalist an “information arbiter” (p. 164) whose role is described as “a powerful publisher in shaping the news” (p.165). Other researchers express this authoritative role by attributes like “control” (Lewis, 2012), “supremacy” (Eldridge, 2018) or “flows of power” (Carson & Farhall, 2018). Eldridge investigated if legacy news rooms presented the incoming actors as 'journalists' in their reporting. One can see that legacy media, here in the case of The New York Times, not only dominate content. Looking at his study in detail, one sees that they also decide over the *who is who* in journalism. Hence, one can ask if this view of the gatekeepers does not rather remind of the role of a bouncer.

But what is it that makes journalism so closed and what enables journalists “to speak truth to power” (Lewis, 2012, p. 844)? First, journalism claims to be credible and true. Second, it assumes to be balanced, autonomous and based on reliable facts. This has been considered the main differentiation criterion for journalism from other disciplines and influences. Thus, in the role of gatekeepers, journalists intent to provide the public with the most relevant information, in a reliable way. To put it straight, journalists' purpose is to empower people for good decision-making – as the Fourth Estate in democracy.

One can summarize, the digitalisation shakes up power structures and reshuffles the

cards, not only in journalism. However, compared to other professions also facing difficulties, Lewis (2012) highlights the challenges for journalists as particularly drastic. While the twentieth century offered relative stability in terms of status and economy (Lewis, 2012), the Fourth Estate suddenly appeared “in danger of dying“ (McNair, 2019, p. 223). However, it was not only the digital media culture which triggered uncertainty.

In January 2017 Kellyanne Conway, the U.S. Counsellor to the President, created the phrase ‘alternative facts’ during a press interview to hide a false statement. Meanwhile, terms like ‘fake news’, ‘bullshitting’ and ‘post-truth’ have entered public discourse and partly even the dictionary. But how do they harm journalism? According to Waisbord (2018, p. 1868), fake news which have “been primarily used to refer to content featuring the style of conventional news intended to deliberately misinform”, are not new a new phenomenon. He (2018, p. 1867) even claims that this form of misinformation represents “common early forms of news and journalistic practice, particularly at times of high anxiety, crisis, conflict, and revolution”.

Nonetheless, in the digital era their influence is much stronger. Andrea Carson and Kate Farhall (2018, p. 1899) describe that “fake news stories spread further and faster through digital technologies”. Similarly, McNair (2019, p. 224) calls the internet’s “uncensorability” and “the ubiquity of social media platforms” further reasons for the circumstance that the “concept of Truth in journalism has been seriously compromised”. This time, journalism has to confront a severe damage to reputation. Now, not only power and financial liability is at stake, but the profession’s main characteristic: trust and credibility.

What does all that mean for journalism? First of all, one can give a slight all-clear. It turned out that a decade later after the fear of decline, one can see that “leading global news brands such as the Guardian, New York Times, the (UK) Times, CNN and the BBC“ managed to use the internet to their advantage (McNair, 2019, p. 222). One could even go further by saying that the internet brought some positive effects like for example a boost in media production. McNair claims that this century offers “more news and journalism, available to more people in more places than ever before” (p. 223). Thus, one can adhere a similar effect as in the Victorian Era, when journalism professionalized.

One could also state that the digital era widened the possibilities of journalism when Holton and Belair-Gagnon note that the contours of journalism are changing towards a more holistic understanding of norms and practices (2018, p. 77). Like that recent developments in the journalism industry can be seen as a disruption in the first instance, but as a development on the longer run. In the sense of “what does not kill, only makes stronger”, this development even has an aspect of growth as the practice shows that the above described “boundary fluctuations” can also “lead to an evolution of occupational norms and actors” (Lewis, 2012, p. 842).

Still, certain characteristics of the discipline have changed tremendously with digitalisation. Waisbord (2018) notes a collapsing of the old news order and describes the current journalism as a “fragmented, complex, open-ended institution” (p. 1868). He goes on by stating that the “dynamics of news and information are not controlled by journalism” (p. 1868) and recommends rethinking journalism's position. But what could be a new news order?

2.4 Competitive Becomes Collaborative

Back then, McLuhan (1967) found out that already he lived in a time of cross-border, midst the dissolution of old categories and experimenting. And he discovered that the unusual combination of two completely incompatible elements often makes astounding discoveries. How could this concept look like in journalism? Benkler (2011), who asks how media in the digital era will mix traditional elements with new influences, elaborated a model which allows for more collaboration.

His solution is a Networked Fourth Estate which partly has found its way into investigative reporting: Carson and Farhall (2018) describe how investigative reporting, while confronted with digital disruptions with several economic and trust-related challenges, stands out with collaborative scoops with worldwide relevance. The researchers refer to examples like the Spotlight team which investigated sex abuse in the Catholic church or the international cooperation of journalists who investigated the Panama Papers revealing tax fraud with global dimensions.

Like that they picture a shift from an old model of competitive newsrooms to a more collaborative model. They argue that “the same conditions that allow the viral spread of fake news” like “internet connectivity” or “many-to-many digital networks” (p. 1901) are also enabling this trend toward collaborative work between multiple newsrooms. What they also illustrate is how a sharing of information can lead to extraordinary investigative successes.

However, one could say that journalism is still not comfortable with a more networked model when it comes to collaboration with non-journalistic actors. Benkler already predicted a relatively difficult development towards “regular collaboration”. Eldridge (2018) did a follow up of Benkler's research analysing the perception of WikiLeaks and he confirms this thesis with his findings. He describes that the media still takes an exclusive and authoritative role when mentioning collaborators like WikiLeaks and ProPublica in their reporting. While ProPublica got more nuanced descriptions, Wikileaks is rather described as a “source” and less as a collaboration partner (p. 21).

In general, research shows that the journalistic establishment behaves little welcoming towards these new contributors. For instance, Holton and Belair-Gagnon (2018) observe newcomers as “unwelcome strangers” (p. 71) and a stigma of journalistic outsiders. But how long can such resistance persist, asks Lewis (2012) and is it smart to exclude them? McLuhan would protest. While the expert stagnates, he (1967) claims, the amateur can develop a fantastic intuition, an unbound and independent way of thinking. It is probably high time to let in new ideas from new disciplines.

In fact, there are positive examples of interdisciplinary collaborations. They can bring together designers and journalists to enhance storytelling (Doherty, 2016) or technologists and journalists as in the open-source technology organisation called Hacks/Hackers (Lewis & Usher, 2014). Founded in 2009 with the intention “to rethink the future of news and information (p. 384), they offer a role model for successful collaboration between journalists (hacks) and technologists (hackers). This journalistic-technologic collaboration represents a kind of peer relationship in which journalists appreciate the contributions of

the audiences (Lewis, 2012). Lewis claims this model has a hybrid logic, but one could undoubtedly also call it symbiotic or synergetic.

Journalistic change often comes from the edges to the mainstream, note Holton and Belair-Gagnon (2018). They state that even though these strangers might not be ephemeral in journalism, “some of them do have a lasting impact after all” (p. 72). Indeed, research shows that newcomers already represent a great value for journalism, bringing with them remarkable innovative know-hows. Holton and Belair-Gagnon (2018) state that the strangers are “importing qualities to it that do not originally stem from the journalistic profession” and that like that “have helped to introduce new ways of identifying what news is, how to deliver it more effectively, and how to better engage with news audience” (p. 72).

Another study field is led by the question of how these outsiders and their expertise can be integrated in established processes. Here, researchers have different approaches to find a solution. Eldridge (2018) discovers two reactions in journalism, the first is resistance but the second embraces change. He takes up the concept of normalization to explore how journalists incorporate new technologies into their routines and norms which otherwise would “challenge their primacy to fit within extant professional norms” (p. 4). Examples are the use of typical blogger elements or various social media functions. One could claim that Twitter took a relatively prominent role in journalistic everyday life. According to Eldridge (2018), journalists use it not only to reach their audience but also to source material.

2.5 Collective Intelligence

The elitist or exclusive attitude of journalism has not only “contributed to a mind-set of content control” but also to a lack of understanding for “everyday people and their concerns” (Lewis, 2012, p. 844). This is problematic before the backdrop of the Fourth Estate in a democracy in which journalists, as mentioned before, have the purpose to empower people for good decision-making. At this point James Surowiecki's concept of the “wisdom of the crowds” shall be mentioned as it, among other advantages, also carries a certain anti-elitist, democratic spirit. It is based on the idea of collective intelligence which can “address collective concerns” and “solve group problems” (Lewis, 2012, p. 848). And it goes even further as it is based on the assumption “that knowledge is richest and most

accurate when it reflects the pooled inputs of a distributed population, as opposed to a single agent” (p. 848). An example for such a source critical corrective is Wikipedia.

Also, Muthukumaraswamy (2010) brings the concept of the collective wisdom of crowds together with journalism. She focuses on the topic of crowdsourcing, a term coined by Jeff Howe which describes the act of outsourcing a job traditionally done by an employee. Via an open call it is handed over to a large group of people. In her study Muthukumaraswamy shifts the focus on the audience. She calls the practice “a collaborative effort between a news organization and its audience” (p. 50). However, she differentiates between different levels or qualities of crowdsource engagement.

In the most basic form of interaction, the crowd only functions as a kind of observer (p. 50). The next level is reached when the audience is involved “in analysing information, crunching numbers or interpreting documents for the purposes of reporting” (p. 50). An even more advanced stage is when a “large group of generalists and experts of varied backgrounds” are brought together. This constellation, according to Muthukumaraswamy, has the potential to help in “investigative reporting of a specific issue where a wide range of assets is needed to find solutions” (p. 51).

Does this mean that the crowd is the better journalist? Muthukumaraswamy argues that “people can provide good eyes and ears, but the job of putting together a story is that of the journalist” (p. 58). Disadvantages are the necessary “effort from a news organization in terms of coordination and oversight” and that “ideas need to be contested and challenged” (p. 60). Still, the advantages of crowd wisdom are not to be dismissed. It convinces by its “sheer power of numbers” (p. 50) which guarantees accuracy and credibility (Muthukumaraswamy 2010, p. 50). And last but not least also transparency is an important pro. It is more transparent, claims Muthukumaraswamy, as it “bypasses the spin of press releases transmitted by the mainstream media” (p. 56).

For a further exploration of collaborative models, the theories of Lewis and Westlund (2015) about actors, actants, audiences and activities are particularly relevant. The researchers explore the interconnections among humans (actants), technology (actants)

and recipients (audience) in the context of contemporary cross-media news work. These actors, actants and audiences are interrelated by routinised acts which give media practices a shape (activities). Lewis and Westlund identified that over the last two decades technology played a big role in journalism research. However, they claim that “humans play a central part in shaping media” (p. 21).

Central to their discoveries is the way journalists see the audience (p. 25). As indicated above, they distinguish between actors, actants, audiences and activities. In this classification, actors are journalists but also businesspeople and technologists. Noteworthy is that not only Muthukumaraswamy reflects on the audience. Also, Lewis and Westlund examine its role when they describe how different these actors look at their audiences and which framings they apply. As businesspeople are mainly interested in the financial marketability of readers, spectators and listeners, journalists seem to be quite ignorant of the audience, perceiving it as "passive recipients" (p.25).

However, this view seems currently to be changing, primarily due to the impressions of the third group of actors, the technologists. They, according to Lewis and Westlund, perceive the audience as potentially active participants – thanks to the open-source movement. What now surprises is that journalists, despite this insights of their colleagues, still keep their established reactionary concept that the recipients, as in the old model, "depend on them" (p. 26). If it is still true in 2019 that journalists see the audience as passive and controlled recipients, it would be a fatal fallacy, ignoring the hype of grass root participation that came up over the last years.

Lewis (2012) claims that grass root activities always existed, but that they now act with more ease, especially because of the emergence of Web 2.0 and social media (p. 846). Lewis, Kaufhold and Lasorsa (2010, p. 165) claim that in digital environments the audience no longer needs to be passive observers and that readers can turn into “co-creators with professionals in the news production process”.

Citizen Journalism summarizes the “evolving spectrum of user contributions to news content” and manifests in “such things as comments, photos/videos, reader blogs, and

even reader-assembled news articles” (Lewis & Kaufhold, 2010, p. 164). Early participatory examples are given by Muthukumaraswamy (2010) who traces back the beginnings of crowd-sourcing: She mentions that for example during the attacks on the World Trade Centre in 2011 images and videos from the public became critical for the reporting of the collapsing towers. Here it was visual material, but participation can also appear in form of textual contribution. Lewis and Kaufhold (2010) claim it can be as minimal as comments under an article but also as comprehensive as a story in full-length.

Already about half a century ago McLuhan (1967) stated that the mass audience could be used as a creative participating force. A decade ago, this participatory process was still pictured as sluggish due to structures and routines in newsrooms (Lewis et al, 2010). Yet, one could actually note first notions of the audience to use press tools themselves to take an active role in journalism. One thing is certain, however, with the emergence of citizen journalism the audience turned into actors.

If global scale collaborations between newsrooms is effective and crowdsourcing already plays a central role in the news, how could this networked based model establish and develop in the future? This thesis intends to break down the individual components of journalism, the actors, actants, audiences and actions and examines their roles in detail with the intention to derive future potentials of open-source influences for investigative journalism.

The following empirical study will show that the boundaries between actors, actants, audiences and activities blur, and that media production becomes a reciprocal interaction. This is revolutionary as it represents a far-reaching intervention in the above discussed concepts of journalism’s jurisdiction, power structures, boundary work and even the influence of fakery. An empirical research with open-source experts from Airwars, Bellingcat and Forensic Architecture shall show these findings in practice.

3. Methodology

3.1 General Research Design

The following chapter will describe the methodological procedures of the research. It contains a rationale for the chosen research methods, an overview of the selected samples as well as the interview guide and a description of the applied analysis and interpretation procedures. Moreover, it will introduce the interviewees, giving information about their roles in their agencies and about their professional as well as educational backgrounds.

The chosen method for the empirical part of the thesis is a qualitative study. The basis for this study was the preparatory literature research and a thorough research about the here discussed agencies, the interviewees and their previous projects. Besides books and newspaper articles, videos of conferences and panel discussions (partly recommended by the interviewees) turned out to be especially useful for the preparation.

Scientific requirements of reliability and objectivity of the study are best met with a qualitative interview method as the phenomena of collaborative journalism should be investigated in depth. Expert interviews are recommendable as the topic of open-source is a relatively new occupational field which has been studied only to a limited extent so far. The interviews should explore the motivations, perspectives and experiences of this small group of open-source professionals. Moreover, they should get the opportunity to give detailed information and the resulting material should be evaluated intensively (Diekmann, 1995). The research can be described both as inductive as well as deductive as the goal of the thesis is to first test the hypotheses from the theoretical framework and second also establish theory based on the research results (Diekman, 1995).

The interviews were conducted in a semi-structured way, which means that the questions were predefined but left open to a certain extend. Hence, the order of questions could vary, and interviewees were free to answer in their particular manner. A disadvantage of the method is, at least in some parts, the lack of comparability of the different interviews. Especially the different functions of the interviewees and their agencies' profiles led to

different thematic emphasises. This meant for instance that some interviewees referred to politics, while others tended to focus on artistic aspects. However, the advantages of the chosen semi-structured interrogating outweigh as it left room for profound explorations and unexpected findings.

For the analysis of the material a coding system was applied. Flick (2006, p. 258) differentiates between open, axial and selective coding of study material. Despite this classification, he sees them not as separated steps. In practice, they are dealt with parallelly. Flick summarizes the interpretation process as a form of abstraction which leads to the formulation of theories.

In practice, this means that the empirical material was first assigned terms and codes which then were summarized into categories. To gain an overview of great text amounts the categories were handled in a table which provided a neatly arranged matrix. The last step was to create relationships between the concepts from the theoretical framework and the empirically developed categories. The overall goal was the creation of a manageable number of chapters to divide and present the whole content in a logic coherence to gain a visible interrelation.

The interview guide is based on the preceding literature research which was relevant to gain a broader understanding of latest discussions in journalism research as well as to filter out outstanding concepts. Before this backdrop, a few organisational questions and about twenty core questions were elaborated and clustered around three topic areas: background/self-perception, collaboration and technology.

Despite this clear thematic division and question formulation the interview guide was meant to only give orientation and handled relatively flexible in practice – for two reasons. The interviewees had very different timeframes, roughly between 30 and 75 minutes. To get the most out of the limited time and to explore the core expertise of the respective interviewees, certain aspects had to be dealt with more in detail while others could only be dealt with peripherally.

3.2 Interview Process

As all interviewees are based in Great Britain or the United States and the researcher in Germany a personal meeting was not possible for organisational reasons. The interviews were all conducted via Skype, mostly by a video call, otherwise with the mere audio call function. The interviews were recorded with Skype and on a smart phone and later transcribed, partly manually, partly with the transcription software Sonix. All interviews were held in English and therefore not in the native language of the researcher.

In addition to purely practical reasons, the software was therefore also used to interpret hard-to-understand sequences correctly. Vice versa, the automatically transcribed texts were checked for their accuracy by the researcher. Without altering the main content some sentences had to be slightly changed and shortened for better readability. The shortening refers to a big amount of fill words, typical for spoken language. Yet, great emphasis was put on a faithful reproduction of the text.

A challenge in the material evaluation was the big amount of content from almost five hours of conversation. The discussion section therefore only contains the most important sequences. For a more reader-friendly structure the text is divided in five main chapters. Sub-headlines give further orientation and the before introduced concepts such as jurisdiction, power structures, digitalisation, boundaries and post-truth work as a rough guideline. In the theory section they had the function to create a broader understanding of the common journalistic self-perception. They helped to realize the actual power position of journalism and the relevance of journalistic “interlopers”. Moreover, they were used to picture the purpose, accountability and legitimation of journalism as well as its working tools and materials. Now the same concepts will help to understand the new open-source actors, their methods, workflows, tools and mentalities.

A first chapter called “The Novel Actors” deals with the here discussed agencies currently entering journalism. It is about the self-perception of these open-source actors, their motivations and backgrounds as well as their relationships towards other open-source actors and legacy media organisations. Actors according to Lewis' and Westlund's study are the contributing journalists, technologists and businesspeople in media.

The next second section focuses on actants, which in Lewis' and Westlund's research describe techniques and technologies. The headline "The Novel Actants" combines information about the technological influences in open-source investigations. It shows new possibilities coming from within the digitalisation but also its limitations and the importance of human contributions. The next section is devoted to the topic of media activities which in Lewis' and Westlund's previous study describe routines in the media. "The Novel Activities" inform the reader about new means of storytelling applied by the here discussed agencies. This section puts open-source investigation in the context of the post-truth era and presents its visual and aesthetic potentials. "The Novel Audiences", derived from Lewis' and Westlund's study of media recipients, focuses on their new capabilities. It examines the audience before the backdrop of post-truth and shows an increasingly active involvement of the audience in media. In the last part a new entity with the title "The Novel Auditoriums" shall discuss new spaces for open-source work and the power of speaking to a variety of audiences.

3.3 Selection of Experts

Every participant was selected for a pioneering role in open-source investigation and a high name recognition. Especially, Bellingcat and Forensic Architecture recently received a lot of public recognition, but also Airwars has a leading authority on topics around conflict violence. The same applies for the legacy media involved in this study: The interview candidates employed by the New York Times and BBC represent the media organisations which can be described as early adopters of open-source methods.

In addition, the agencies Airwars, Bellingcat and Forensic Architecture themselves often cooperate with internationally renowned media companies. Like that, all interviewees do not only have valuable insider knowledge both about legacy media and open-source collaborations, but also insights in the highest-ranking editorial offices of so-called quality media. They also know each other's work and the general field well. Moreover, as the selected interviewees are currently at the forefront of implementing open-source methods in newsroom, they most probably are the ones setting new standards in newsrooms for the future.

Even though some of the participants of the empirical study might not primarily perform journalistic work anymore due to new management roles, they are all originally investigative journalists. Also, all of them are working in the context of open-source. One part works directly for Airwars, Bellingcat and Forensic Architecture. The other part used to work for at least one of the agencies and is now employed by a media organisation. In two cases, they are the founders and chief executive of the agencies discussed here. This combination of interview partners working in different agencies and functions strives for the completest possible picture, with which both sides, legacy media and open-source agencies, should be discussed and understood as widely as possible.

3.4 Presentation of Interviewees

Eliot Higgins is the founder and manager of Bellingcat. Previously working in finance and administration, he became known by his activities as citizen journalist with his former blog Brown Moses in which he reported on deployed weapon systems in the civil war in Syria. Higgins for instance has investigated the downing of the Malaysia Airlines Flight 17 in Ukraine, the Skripal revelation and lately the Oman Tanker Attacks.

Before joining the BBC Africa Eye team as an open-source investigator, Benjamin Strick worked as a volunteer for Bellingcat. He has a background in law and the military and focuses on human rights abuses, conflict, security and arms. Strick also works as open-source instructor and investigator with the EUArms workshops. He contributed in the “Anatomy of a Killing” reportage for which his team received the Peabody Award.

Robert Trafford was a freelance journalist for media like The Intercept, The Times and the Independent before becoming a member of Forensic Architecture. At the agency he is mainly responsible for open-source research, data mining and analysis. Trafford studied Philosophy and Theology at Jesus College, University of Oxford and completed a master’s degree in Investigative Journalism at City, University of London.

Today Christian Triebert is a full-time journalist for The New York Times. Before that he worked as a contributor for Bellingcat and Airwars. After studying International Relations

and Political Philosophy at the University of Groningen, he obtained a master's degree in Conflict, Security and Development from King's College London. In 2017, he was awarded with the European Press Prize's Innovation Award.

Chris Woods is an investigative journalist as well as the founder and Director of Airwars. He leads on research, investigations and military advocacy. For many years Woods worked for the BBC's Newsnight and Panorama as a senior producer and set up as well as ran the Bureau of Investigative Journalism's Drones Project. Woods is the author of the book, "Sudden Justice" which deals with the use of armed drones.

4. Empirical Findings, Interpretation and Discussion

4.1 The Novel Actors

4.1.1 Jurisdiction in Open-Source

As explained before the topic of jurisdiction has an exceptional important role in journalism. It demarcates the profession from incoming influences – but only in theory as the theoretical framework showed. In current practice open-source actors enter journalism, pushing its boundaries. Hence, it seems relevant to discuss their jurisdiction and to see if there are similarities to the jurisdiction in journalism. To use the before cited words by Forensic Architecture founder Eyal Weizman, the first question discussed here shall be the following: Should open-source actors have the “legal authority or right” for “speech” in journalism?

In this topic the interviewed open-source actors show clear intersections but also clear delimitations to journalism. If jurisdiction means “to govern a body of knowledge and the practice of that expertise” as well as an “interest in doing good work for society” (Lewis, 2012, p. 837), one can find similarities to journalism. Their main driver is idealism, the wish to affect change and to serve a social good. Benjamin Strick (BBC) explains that in all his former professions – in the military and also in law – he was driven by human rights aspects: “It is towards the same cause of helping people who are in disastrous areas, involved in conflict or human rights breaches. That is where the passion stems from.”

In this context one should not leave out that the drivers for some of these new journalistic actors can also be less philanthropic but rather jaunty. Strick (BBC) talks about a playful element in geolocation and also Eliot Higgins (Bellingcat) describes his early investigations as “a fun thing to do” and “like a little puzzle”. The combination of entertainment on the one hand and their political influence is an interesting topic but it shall not be discussed in the scope of this thesis. Moreover, this playful instinct does not affect the integrity of the investigative outcomes of their work and has not been mentioned by the majority of interviewees.

Robert Trafford (Forensic Architecture) who is an investigative journalist by profession for example stresses the aspect of storytelling in his projects. He claims that he wants “to push on levers of power, that aren't necessarily easily accessed by everybody by finding stories that are able to create a kind turning moment in a human rights context.” This motivation could be described as align with the archetypical image of a journalist. Other interviewees however rather distance themselves from traditional journalism.

Higgins (Bellingcat) claims that “all come from an interest that is driven by wanting to understand what happened, not out of making a name by having a big story”. Similarly, Christiaan Triebert (The New York Times) says that it is about caring for one’s investigations, but he makes clear that for him “it doesn't matter what you're doing, if it is for The New York Times or for a fucking tweet. It is about whether you really want to get to the bottom. You want to give those extra steps; you keep that curiosity and you want to collaborate.”

Another driver of the open-source actors are their discoveries of lacks in journalism. The interviewees intent to fill them either with their open-source contributions or with their individual “body of knowledge and the practice of that expertise”. With their forensic investigations Forensic Architecture shows that architecture is not only a practice but also a knowledge. The same is true for a former soldier like Strick who with this background governs a practice *and* a knowledge. He explains that his weapon insights used for his investigative journalism stem from his previous experiences in the military. In these cases, the knowledge comes from outside journalism which is notable if one remembers that journalistic change often comes from the edges to the mainstream (Holton and Belair-Gagnon, 2018).

Chris Woods (Airwars) founded his agency due to “significant challenges for reporters to be on the ground” and “a lack of editorial interest back home in terms of deploying reporters” in war zones. Triebert (The New York Times) on the other hand detects that the usual 24/7 news cycle often lacks verification and meaning. For him open-source is the answer, stating: “I think our work is almost like an antidote to that. We have a long form

journalism that digs deep and in which an investigation can take up to half a year before it is published.”

However, here one has to remark that open-source verification actually starts long before the final fact-checking of a story. One can rather say that the act of fact-checking is inherent to the method. This becomes best clear with the work of Airwars. When Woods refers to the “challenge of the observable” he describes the phenomenon that modern militaries are incapable to determine within their own systems the majority of civilian harm their own actions cause.

He intends to show that one perspective is not enough, that to get “a more rounded understanding of an event” open-source has a significant value if it is combined with military and research intelligence. Only then one can improve military understanding of civilian harm. He follows:

The more information we have, the better the understanding. What we now know is dispersed among a number of actors. The military may have part of the picture. Local people on the ground are part of the picture. Monitors, assessors and investigators also have part of the picture. If we combine all elements we end up with a more comprehensive picture.

To be precise, Woods sees his agency as slightly different from an open-source investigator. According to him, Airwars is an “all-source monitor” which means that it monitors everything in relation to particular civilian harm allegation. He summarizes: “I would say that we are an incomplete picture but nevertheless a valuable one.” Nevertheless, his specification proves that fact-checking is inherent in open-source or all-source monitoring.

Woods (Airwars) uses terms like “people driven intelligence” or “open-source intelligence” and they are related to the concept of crowd wisdom or the ideal of a source critical corrective, introduced in the theoretical framework of this thesis. Woods thoughts are align

with Lewis' (2012) assumption "that knowledge is richest and most accurate when it reflects the pooled inputs of a distributed population, as opposed to a single agent" (p. 848) and also to Muthukumaraswamy's (2010) claim that crowd wisdom convinces by its "sheer power of numbers" (p. 50).

So, is the jurisdiction of open-source align with the jurisdiction of journalism? If one assumes that journalism as the Fourth Estate has the task to empower people for good decision-making based on balanced, objective and trustworthy information, then open-source methods could become a key contribution in the future to "speak truth to power" (Lewis, 2012, p. 844).

4.1.2 Collaborating with Legacy Media

The ones traditionally speaking truth to power are the established media organisations. As shown in the first part of the thesis, journalism so far acted as "a powerful publisher in shaping the news" (Kaufhold & Lasorsa, 2010). The discipline even stands for a supremacist attitude (Eldridge, 2018). Eldridge pictures how The New York Times denies newcomers like WikiLeaks the entrance into the elitist news circle by rigorously refraining to call them journalist. This leads to the next question: In what relation do the novel actors stand to the selected legacy media like The New York Times or BBC?

There are similarities. Like Julian Assange who can take various job titles, the here discussed open-source actors are also acting between fields. This at first glance leads to dissonances with traditional news actors. Talking about the BBC, Trafford observes a "slight sort of paternalism" as well as a "reductive" tone, when Forensic Architecture is not connected to journalism but to art and activism.

Yet, at a closer look the reductive manner turns out to be a definition issue. Trafford claims that the new set of skills found in Forensic Architecture is not self-explanatory and that for a news organisation like the BBC which is "built on a certain set of skills" it is hard to grasp. He in general notes that his team is at the mercy of a missing definition as some people often do not worship their evidence defining them as artists. Others, the other way around, deny their art as they see it as pure evidence wondering to find it in an art gallery. One can deduct a difficulty in labelling, which interestingly, also Higgins (Bellingcat) notes:

I think a lot of people early on would describe me as a citizen journalist because they did not have a better way to describe what I was doing. Citizen journalism was the trendy thing at the time. But now I run Bellingcat with an income of two million [pounds] per year, 60 people of staff and an office in The Hague. So that goes beyond citizen journalism.

Trafford summarizes: “I think what all of this suggests is that we sit in a space that is very new and which exists between fields, which has the potential to be very productive to inform a lot of other fields.” But, does this apply to established journalism? Do legacy media organisations accept to be informed by the new actors? Are they willing to collaborate? Answers to these questions vary but they also show one clear tendency. On first sight, the established media organisations appear like unmovable colossuses, reactionary and resistant to new influences. Interviewees call them “granddad”, “old grey lady” or “big ship”.

Chris Woods (Airwars) who has 30 years of journalistic experience welcomes the new collaborative influences coming from open-source movements. He differentiates between the journalistic genres, but he generally perceives investigative journalism as a closed system: “Journalists hold their information, particularly in print journalism. What we used to call print tends to be quite a solo experience. TV investigative journalism is a bit more collaborative because you need a team.”

Trafford (Forensic Architecture) sees here a basic conceptual limitation: “There is an essential problem in that open-source reporting is exactly the opposite to what reporting has always been because it is a closed source.” Even though Strick (BBC) who works in an open-source unit within a legacy media organisation shares this opinion with his open-source fellows when he states: “There are reasons why there is only two of us. Sorry to say that, but the BBC is a very old machine and open-source in a place like the BBC is like asking granddad what the latest iPhone is.”

Still, at a closer look the interviewees also reveal a breaking up of established structures, a transition towards collaborative open-source values. Newsrooms like the BBC want to work with them and in case they already have their own in-house open-source investigation team, they intent to expand it. According to Strick (BBC), the success of “Anatomy of a Killing” by the Africa Eye team which won multiple awards convinced his employer to produce more stories of a similar kind.

Despite his observation that legacy media are relatively resistant to change as they have “a set of skills that they have applied to the field of reporting”, also Trafford (Forensic Architecture) believes that the contours of journalism are changing. He states that “the ball is rolling” and that his team is trying to “push the boundaries of what is possible”. That they now arrived at the point of opening the “gate” could be explained by Trafford's theory. He thinks that media currently faces a change in values, a shift away from exclusiveness towards a rather open network. Journalist, according to him, are now measured by their efficacy of finding and interpreting material.

Similarly, Triebert (The New York Times) describes a change in values. His team is set up by non-traditional journalists and he is convinced that a lot of other media are also following open-source trends: “It becomes almost like a hype”. Here Triebert adds another interesting statement about his employer: Within its investigative unit the “old grey lady” has the exact same spirit and flow as the open-source agencies he worked for before. This shows that sooner or later work routines and atmospheres in newsrooms could also change towards a more collaborative way. Woods (Airwars) believes that in five years the new methods will become standard in the journalistic practice, stating: “We are seeing an emerging field of forensic journalism and a recognition that these skills are at a premium right now. The collaborations we are seeing today may actually be the in-house investigations of tomorrow.”

With these statements one can assume a first trend towards a more Networked Fourth Estate in which new possibilities coming from the internet mix with traditional journalistic elements. In fact, one can observe first initiatives of collaborations between of legacy media institutions and newcomers. It seems that the malleable nature of journalism which

was long perceived as rather problematic also offers chances to develop new methods, working flows and products.

At the moment one can experience how new actors brake up old structures, or in other words how they disrupt legacy media boundaries and how the contours of journalism are changing towards a more holistic understanding of norms and practices (Holton & Belair-Gagnon, 2018). One can conclude, that open-source is in its very early stages, but there are clear indications of the establishment of a new journalistic genre.

4.1.3 Collaborating within Open-Source Boundaries

In the theoretical framework Hacks/Hackers, an open-source technology organisation of journalists and technologists is mentioned. Lewis (2012) describes it as a peer relationship and one could call their model as a synergetic. It is worth mentioning, that to describe collaborations within different open-source actors Woods (Airwars) also refers to “synergies between the organizations in the field”. He sees a fundamentally different mindset between open source and legacy media actors.

Having a sort of old-fashioned newsroom egotism would make the work in this context really toxic and is something nobody wants to see. Exclusivity matters, we understand that, but among ourselves as open-source agencies there is maybe a different approach. We will always or usually have an idea of what investigation organization X, Y or Z is involved in. We would never dream of speaking of that publicly and I would only support them in what they would do.

Talking about open-source, he highlights a “very refreshing lack of competition”. Instead, sharing is a main principle in the discussed agencies. Woods explains that Airwars, Bellingcat or Forensic Architecture exchange best practices with each other, technological advances and even staff as their very specialist skill sets are mutually appreciated. Woods is convinced that one cannot “do open-source without it beginning as a collaboration”. He sees this as “a very different approach to journalism which is probably changing journalism for the better”.

However, to understand journalism's inclination to exclusivity and competitiveness, one should remember the pressure journalism faced in the recent past. Previous news actors feared not only their legitimization but also their economic viability and thus their whole existence. As discussed before, open-source actors in contrast benefit from sharing and their fears come from very different triggers. Some interviewees mentioned the phenomena of secondary trauma as they are regularly confronted with highly disturbing material coming from conflict and war zones. Their task is to analyse it in depth which means that they can be constantly opposed to violence and cruelty. Woods describes how this circumstance represents another reason for collaborating and sharing:

We make sure that our work complements that of each other and that it doesn't really duplicate. There is no value in simply replicating what the other one is doing and there is certainly no space for competition, particularly as we are often dealing with these terrible subjects and stories involving really appalling things that have happened.

And sharing represents even more benefits for the open-source actors. Higgins (Bellingcat) mentions a project between Bellingcat, Forensic Architecture and Human Rights Watch in which all groups had access to the same material which they were exchanging with each other. Higgins breaks down the sharing process into identifying, verifying and amplifying. Here sharing became a means against the risk of wrong information. He claims: "The amplification part can be a whole range of different products and in the end, it can be like a single tweet, a video or a formal report. Because you have already verified the information that you have identified you can produce these different products on trustworthy information."

4.2 The Novel Actants

4.2.1 Algorithm Intelligence

The term actants in Lewis' and Westlund's study refers to the technological aspects in journalism. The most relevant technological influences in the recent past come from the internet. As described in the theoretical framework of this study, digital influences, particularly the boom of material, intimidated journalists. For open-source actors in contrast

the omnipresent data material was not a boon but a bane. It made their work possible as it enables amateurs to contribute material to investigative projects or to even do their own investigations – at least to a certain extent. To which exact extent will be discussed further on.

Higgins (Bellingcat) states that “2007 to 2011 is the period when the iPhone was launched, Google Earth, Google Street View and YouTube released – the race of all the ways of sharing information both from individuals and information that is out there”. He believes that “people are actually woken up to this, realizing that they are surrounded by all this information, that it is all networked and they can explore it”.

Digitalisation, according to Higgins, allows people to unite in completely new and unlimited ways: “So someone in Finland and someone in the US and someone in the U.K. can work together to figure out what happened to MH 17. And that would have been impossible before.” Higgins describes that “we have gone from conflicts that would have been completely remote and barely covered 20 years ago to now where every single day you have a new kind of 100 new videos on conflict zones that you can analyse”. Hence, he sees newer digital developments as a “quiet revolution”:

There have been so many technological changes over the last 20 years and especially in the last ten years with the amount of information you can get through Google for example. We take that for granted. People often ask me what my most important open-source investigation tool is. And it is Google search. It is as simple as that. But it is something everyone uses every single day to find information out. Now one thing in our toolbox allows us to investigate all kinds of things happening across the world.

4.2.2 Human Intelligence

What is remarkable about “Google's rich toolbox”, according to Higgins, is the fact that the most basic technique can lead to new eye-opening information or help to verify information. However, in this point the opinions of the interviewees differ. Many of the interviewed open-source actors stress that technology has limitations for their work. This

applies to Woods (Airwars), who has the longest work experience of all interviewees. For him open-source it is just another tool:

I come from an age when we did not have cell phones or the Internet. All of my journalism was done on the telephone or in person. It is inconceivable to imagine journalism today without either of those tools but that was how journalism was conducted. Investigative journalism in the 1980s and 1990s was equally strong. So open-source to me is simply a tool and a very important one, but the process I would say has not really changed. The key to good investigative journalism is marrying different sources, data sets, understanding to create that piercing picture that tells you what is likely to have occurred.

Lewis and Westlund (2015) state that “humans play a central part in shaping media” (p. 21), even though technology had an important influence in journalism over the last two decades. It turns out that this is still valid for the novel actants. The interviewees stress that their work takes advantage of technological intelligence but that it is mainly based on human intelligence. Woods (Airwars) for instance points out the following:

We use people rather than algorithms and there is a reason for that. We find that the monitoring is a very subtle process and wars are a very fluid phenomenon. Language changes and current locations changes sometimes daily. We find that people are far better than machine learning and tracking where the harm is happening and at identifying challenges and subtleties. We are actually quite a people focused organization. We do satellite analysis, audio text, visual analysis and so on.

This is an important part of what we do but the primary work which we are doing is human. It is people driven intelligence gathering and old-fashioned archiving of text. We are very text dominated. We have an enormous private archive of millions and millions of words, of archive

materials in the original Arabic and a basic English translation, thousands of stories, of photographs, videos and names in that data.

Other open-source actors such as Trafford (Forensic Architecture) gave similar statements about the human or personal requirements in open-source projects:

Finding the material, that is available to everyone. Some of the very remarkable thoughts that come out of Eyal Weizman's head, are not necessarily available to everyone. It is those that we need to work out and share. He writes and we give lectures, hold seminars and workshops”.

In contrast to Higgins' opinion that everybody can become an investigator, Trafford points out limitations when he states that “there is a certain irreconcilable fact” about the way Forensic Architecture and Bellingcat work. At Forensic Architecture “ultimately a lot of work does require architectural training” and their projects are also “mediated by architectural skills”. Thus, he refers to “a high technical bar” that does not allow any kind of amateur to simply imitate their investigative work. Strick (BBC) adds to that: “A lot of open-source investigators are consistently learning new skills. It is not about the tools. A tool we can teach to everybody, but it is about the way you approach a situation.”

One can conclude, digital influences which scholars describe as a form of fearful disruption in old-school journalism, are by open-source actors perceived as mostly positive. These innovations can theoretically enable everyone to turn into a kind of everyday investigators, everywhere, at any time. The idea that digital technologies have made it almost child's play to create, publish and share content can also be related to the above statements.

Nonetheless, it would be misleading to take an ease in the process for granted.

In fact, one should differentiate between the finding of data which nowadays is a simple process. The actual investigative work however requires specific insider knowledges. This can be weapon or architectural skills or any other kind of knowledge, but it needs to be sound and extensive to be able to conduct a higher level of investigative work as found in stories like “Anatomy of a Killing”.

Tools might be self-taught in many open-source cases, but they need to be consonantly renewed and on top of that they need to be boosted by and creativity. Thus, one can say that open-source investigation can only work with people's expertise. It needs human driven intelligence to understand transformations and subtleties. All this cannot be replaced by algorithm intelligence. Yet, the interplay of technology paired with human skills in form of the investigator and contributing/sharing amateurs – or one could also say of actors, audiences and actants – offers promising potentials for successful open-source work.

Which role will play the journalist then? Is the crowd the better journalist? Here the interviewees all share the same point of view: open-source work has an important value for investigating, but it shall not replace the journalist. For instance, Higgins claims: “At Bellingcat our arsenals are quite dry and analytical because we are focused on the facts of what we have identified rather than on the story. And I think that is where journalists can come in and turn it into something more than that.” Also, Trafford (Forensic Architecture) thinks that “the world is better if we have both – journalist and the crowd”. He explains:

There are still some things that open-source research will not find. But as we see time and again the combination of the two is incredibly powerful and it is probably the biggest open-source investigations stories so far. The perfect example maybe the case of the Skripals where Bellingcat used open-source reporting and some old school contacts.

An ideal future model for the open-source actors is a balanced mix of journalists on the one hand and open-source investigators with technological and creative skills on the other. Their understanding of open-source activities is a threefold interaction in which actors, actants and audiences all share equally important roles. Thus, they strive for a holistic understanding of truth. And this truth needs to be told – by journalists.

4.3 The Novel Activities

4.3.1 Storytelling with Open-Source

But how to tell the story in a post-truth era? Storytelling is different in open-source compared to classic reporting. To visualize how an open-source investigation works one example shall be explained more in detail in this thesis. Understanding the process is relevant as it plays an essential part in open-source storytelling. This means that the investigative tasks can be present in the story, which will be discussed later on. Benjamin Strick (BBC) who is one of the investigators behind the “Anatomy of a Killing” reportage, that explains how it came into being:

In early July I saw a video on YouTube. I was shocked when I first saw it to be honest but then I thought to myself, if you think about it from an analyst's point of view, one can break down an image to see what is in the background, what is in the foreground and what is in-between which you can then lie flat and have a look on a satellite image. I was a bit in trouble trying to find the location myself. So, I drew specific markings on screenshots that I made out of the video. I drew a line on the mountain. I circled a specific tree that looked quite unique and a path. Then I put a huge Twitter threat asking for help, if anyone knows this because Cameroon is quite a popular area for digital coverage.

I thought maybe someone might have seen this sort of mountain range with this really weird looking tree next to it. I started poking around online and before I knew it, some other people were also looking and trying to analyse the video, which I think is the nature of Twitter. I first started working with some people from Amnesty International who were right on to it straight away. One of them had been in the military before as well and he was really good with weapons identification. So he was also having a look into the weapon which I was able to identify because I had shot that one before. I knew exactly what that weapon was.

And then we could see the units that would use that weapon. We had to

look at the uniform which we could identify as Cameron military. We had a look at the weapon, and we could say that these units use it in various areas. Then I joined a Facebook group from the invitation of my college, and we started a crime investigation via Twitter – as to where it is, when it happened and who did it. And we did pretty well – for a group of people that had never met before, none of us has been to Cameroon. One of us spoke French. I could not pick Cameroon out on a map before I looked at this video. I think that is pretty cool, too. From all corners of the globe, this group of about seven people initially started to investigate this video.

With this explanation of the production of the “Anatomy of a killing” Strick shows that open-source investigations are based on videos or images which come from the internet. This challenges new skills for open-source investigators. Strick thinks that they demand much more digital literacy and understanding of how to be creative with digital content from the analyst. But and this is probably even more relevant, the shared material on the internet like the murder video Strick investigated also demand digital literacy from the audience of open-source reportages, especially before the backdrop of an increasing amount of faked pictures and videos. For that reason, the story of “Anatomy of a Killing” was presented as an about 30 tweet long Twitter thread by the BBC in which the reporters led through the whole investigation, step by step.

Also, Trafford (Forensic Architecture) stresses the importance of image literacy as open-source reporting can be mainly based on images. “Storytelling is something that is very different in open-source reporting”, he claims and explains that similar to the above described BBC investigation Forensic Architecture as well as many other open-source actors try not only to tell a story but also to say what they saw in an image, or to be more precise: how they knew what they saw, how they knew that they could be sure what they saw and how they could verify it. Thus, he reasons that in open-source investigations “the process of finding information is part of the story” and “how you could do it next time”. Trafford concludes:

That perhaps shades an unfavourable light on old-school reporting where the requirement was that you had to take an establishment and its reputation as a viable information. You had to trust these sources, what they could not reveal and that they had conveyed correct information to you. Now we do not have to do that.

Both, Strick and Trafford, describe the work of their teams as counter-narratives. Strick claims that this transparent storytelling method is a way to stop people from arguing against one's findings. Like that, he states that image literacy can work as a weapon against fake news. Strick states:

We are all going against government narratives. Inevitably after publishing every single video we will still get a response from the government saying this is wrong, this is disinformation, this is fake news. So, it takes a lot of accountability on us. To build that trust with people, when we know that the governments are already going to say that we are wrong, we are forcing ourselves to show, work out and to lay out everything on the table, bare. I think as we go along, you will see more news firms doing this because disinformation and fake news these days are so common. This is a really good strategy to implement because it is very honest and very open.

Now, if the audience is digital literate enough that it does not have to believe any more what governments or also media tell, it can refute investigative work themselves. For the investigative journalists this means that they can be held accountable for wrong information. Or to put this positively, they offer a high standard of transparency and by that trustworthiness. In the fight against fakery and lies open-source investigators like that bring themselves in position against with strong counter-narratives – made comprehensible in every detail. This is possibly the utmost of transparency and accountability journalists can offer.

Trafford (Forensic Architecture) mentions a further ethical concern or challenge around the

presentation of storytelling and of conceptual ideas.

You might say the concern of the battlefield is just shifted one step up, that the disputes perhaps remain over facts, X is true, or X is not true. But now we also have a dispute over the methods and how you can show these things to be true. Before the backdrop of a lot of accusation to fakery, we have to defend the methods by which we make the claims.

That not only the fact but also the methods behind the facts are in dispute, is encouraging because we want to clearly explain how we got where we got to. It is an interesting new battlefield. And what one of the things that makes Forensic Architecture a good place to be in that fight is that we are part of the University of London. That has a lot of restrictions, but it also has a lot of benefits, and first among them is that our work is held to extremely high academic standards and ethical standards as we are university employees. Also, the university has the duty to protect us and it has research requirements. The content of our work is rigorously refuted.

This again shows that open-source actors, compared to traditional journalists, are more resilient towards the threats coming from the internet. They make a virtue of necessity.

4.3.2 Aesthetics in Open-Source

Another challenge in open-source storytelling is also brought up by Trafford (Forensic Architecture). His agency often has how to make great deals of overlapping information comprehensible. In some of the big gallery exhibitions they are conveying “large amounts of detailed information, often textual information, but in an image led way that makes connections visually”, he explains and in that context points to the meaning of aesthetics and emotions in their stories:

There is an interesting dimension of aesthetics in Forensic Architecture and that is if we go to the root of the word. We come to “anaesthetic”. Anaesthetic is the state of being unconscious, of not feeling anything.

Like that it becomes clear that the word aesthetics is connected to feelings, to witnessing, to experiencing. Hence, when we talk about aesthetics we also talk about a form of witnessing and we often talk about material aesthetics, material witnessing.

What does that mean for journalism? Open-Source investigators claim that people do not want to be told the evidence but see it. Like that they indirectly refer to the journalistic advice of “show, don’t tell!” It shall help the audience to better identify with the characters of a story. In projects by Forensic Architecture it serves to convey a story. The audience almost turns into witnesses.

This works as “material aesthetics” bring a story into a three-dimensional form which anon makes it visible and thus better understandable, comprehensible. In fact, their stories also literally become touchable. In the exhibitions Forensic Architecture organizes in cultural spaces the team shows parts of their investigations in form physical models. A bomb cloud can appear in the form of a sculpture or a reconstruction of a demolished room can be experienced in 3D. Then the visitors can even enter the investigation with their whole body and sensual perception.

As mentioned before, McLuhan (1967) calls media the extension of man, a theory which now seems to become a practice. One could also state, the story turns into space, a thought which will be further explained below.

4.4 The Novel Audience

4.4.1 Fact-Checking Recipients

In an era of post-truth, journalism faces a severe reputation damage. If the internet is marked by “uncensorability” (McNair, 2019, p. 224) and “fake news stories spread further and faster through digital technologies” (Carson & Farhall 2018, p. 1899) its trust and credibility is at stake. In the traditional distribution of roles, the audience had to blindly trust the information coming from the media, hoping for straight facts. This put it into an inferior, dependent position in which the media, as explained in the theoretical framework, could control the audience to a certain extend.

It seems, in the post-truth era, journalists who, as Lewis and Westlund (2015, p.25) point out, see the audience as “passive recipients”, face a dilemma. To keep up their role as the Fourth Estate journalists try to create and spread counter-narratives. However, if narrative stands against counter-narrative, a passive audience is unable to decide for the right information. If there are facts and “alternative facts” how can it find the true truth?

Digital literacy seems the only adequate key against widespread fakery. As the above discussion shows, both the investigator as well as the audience should be digital or image literate. This however requires active participation in the media. Open-source actors use two ways to involve the audience.

First, as described above, they offer the audience to sneak peek into their methods, enabling a look over their shoulders or even in their heads, allowing an almost unprecedented closeness between investigator, journalist and the audience. Like that they teach image literacy, so that the audience can to a certain extent fact-check or refute investigations themselves. Like the Fourth Estate, the open-source actors thus empower the public to make their own relatively qualified assumptions.

4.4.2 Investigating Recipients

To discuss the second form of audience involvement one should come back to the accessibility of information, made possible by the digitalisation and best summarized by Higgins (Bellingcat):

You get photographs, videos and documents of all kinds of things, of all kind of different subjects that are relevant to all kinds of different people. So open-source investigation is a skill that can be applied very widely. Most people do open-source investigation going on holiday. You want to look at your hotel, so you go to a street view to see if there is any parking nearby. One can also talk about an open-source investigation if you're trying to find out where your closest dentist is.

What Higgins describes is that many people unconsciously perform investigative work,

which today is so simple that they do not even notice. Trafford (Forensic Architecture) thinks that “one of the things that is really enlivening for an audience and that makes open-source reporting very exciting is that it is quite literally the case that you could have done it, too.” That is why Bellingcat and Forensic Architecture share their knowledge in workshops or public programs held during exhibitions. It is possible to teach the audience how to investigate. Higgins (Bellingcat) concludes, “open-source allows to actually make the audience the investigator”.

To refer to Lewis' terms of actors, actants, audiences and activities, one can define the current open-source development as the following: The open-source actors use actants (sharing technologies on the internet) to involve the audience on an active level, or in other words they turn the audience into actors. Thus, the power structures described earlier in this study seem to soften. Instead of a top down mechanism of gatekeepers controlling content, now everybody in society can potentially become a collaborating part in the news – and enter the “gate” to journalism.

But where does this “gate” lead to? In the theoretical framework the term jurisdiction was interpreted as a “speech space”. Then, in the context of storytelling, the topic of space came up again: For “Anatomy of a Killing” reporters used Twitter is a new space for publishing their story. Here the word space is rather used in a metaphorical way. However, it becomes literal in case of Forensic Architecture as the agency builds real, physical models of rooms for exhibition spaces. In this scenario they enable the visitors or the audience to actually enter their investigations. Still, the space concept in open-source goes far beyond these rooms and shall therefore be more inspected in detail.

4.5 The Novel Auditoriums

To follow the logic of Lewis' and Westlund's study of actors, actants, audiences and activities the above-mentioned term of spaces will now be called “auditoriums”. This concept shall specify another novel phenomenon that comes with the advent of open-source. While Lewis and Westlund differentiate between the four categories – actors, actants, audiences and activities – auditoriums shall refer to the spaces in which open-source actors collaborate with other actors and the audience. Moreover, this new category

describes their new discovery of areas of influence. What does that mean?

Forensic Architecture presents its works not only in the media, but also in art galleries and cultural spaces. Bellingcat collaborates with journalism on the one hand and with representatives with from governments, with investigators and prosecutors such as the International Criminal Court on the other hand. Airwars collaborates with journalism as well as with militaries and governments. Both, Airwars and Forensic Architecture are based and related to the Goldsmiths, University in London.

These examples show that the here discussed open-source agencies find a variety of partners and spaces in which their work is developed and used. In the latter case of the university, the term auditoriums can be understood directly, as education institutions traditionally have these acoustically refined rooms built to listen to centrally placed speakers. But also, in the other named above spaces the open-source actors make sure that people “listen” to their work. Trafford (Forensic Architecture) explains why and how his team chooses this strategy:

When you are trying to effect change in a human rights context or in the context of human rights violations, international law violation and conflict you need the ability to talk in a number of different registers. By that I mean that you need to be able to transform your work for the forums in which you are able to operate in a given case. Sometimes our cases are mediated through journalism. Sometimes we work with The New York Times or the BBC to try and effect change by making headlines. Sometimes we are able to [...] work with prosecutors such as the ICC or national prosecutors in order to effect change in a legal setting. Sometimes we have the chance to work with cultural spaces.

However, not only Forensic Architecture uses several different registers to affect change. Bellingcat and Airwars act similarly. In journalistic terms, one can say that the display of stories in different spaces is nothing else than a continuation of storytelling. Like that all of them aim for a more targeted approach, reaching out to very different and very specific

audiences, speaking truth to power.

5. Conclusion

“The Anatomy of a Killing”, told by a Twitter thread, already was a ground-breaking new way for journalism to tell a story in an unusual space or auditorium. On the level of views, clicks and shares it was revolutionary and it was a creative achievement, that paid off for its creators, and even for the BBC by attracting new subscribers. In any event, it went beyond anything that was possible before, not only in terms of storytelling but also in terms of its investigative achievement based on a small global team, which before neither knew each other nor had a specific knowledge of the case and the country they investigated.

Social media offered a space for the contributors to connect but also to present the story. What comes next? Where will news and stories be shown in the future? In a more and more complex world, the narrators are challenged to make sure that people understand and interpret their stories correctly. How can they deal with complexities? First, by explaining the “how” of the story, letting the audience understand what led to different steps in an investigation. Second by choosing new formats, like for example a Twitter thread which can help to part a story in smaller “bites”. And third by finding new appropriate spaces, this time meant physically. Forensic Architecture goes to art spaces where they show large scale images to convey large amounts of detailed, sometimes intersectional information. Like that they use an image led way which makes connections visually – showing, not telling the evidence.

Thus, open-source actors are about to form a movement, recruited from a trained digital, image and even investigative literate audience. This will not only improve the quality of investigative reporting but also set the standards higher for investigative journalists.

McLuhan claims that a book is an extension of the eye. If one applies this concept to the work of Airwars, Bellingcat and Forensic Architecture one can say that their use of open-source methods and collaboration is an extension of journalism to the people. Their work not only uses people's data and intelligence – the wisdom of the crowd. It also connects to the audiences on a storytelling level, allowing a maximum possible transparency and closeness to the audience. This enables trust and helps people to identify with media. If

journalism was once criticized for its supremacist attitude, the application of open-source methods can help to again put the everyday life of society in the centre of their purpose – making media an extension to all senses of their readers, spectators and listeners.

Reference List

Benkler, Yochai (2011) A Free Irresponsible Press: Wikileaks and the Battle over the Soul of the Networked Fourth Estate." *Harvard Civil Rights-Civil Liberties Law Review* 46: 311-647.

Carson, Andrea & Farhall, Kate (2018) Understanding Collaborative Investigative Journalism in a "Post-Truth" Age, *Journalism Studies*, 19:13, 1899-1911, DOI: 10.1080/1461670X.2018.1494515

Diekmann, Prof. Dr., Soziologe, Hochschullehrer, Soziologie, Psychologie, Methodenlehre, Lübeck, Eidgenössische Technische Hochschule Zürich, and Deutsche Akademie Der Naturforscher Leopoldina. *Empirische Sozialforschung : Grundlagen, Methoden, Anwendungen*. 5. Aufl. Der Vollst. überarb. Und Erw. Neuausg. 2007 ed. Reinbek Bei Hamburg, 2011. Print. Rororo 55678: Rowohlts Enzyklopädie.

Doherty, Skye (2016) NewsCubed, *Journalism Practice*, 10:5, 569-588, DOI: 10.1080/17512786.2015.1049645

Eldridge II, Scott A. (2014) Boundary Maintenance and Interloper Media Reaction, *Journalism Studies*, 15:1, 1-16, DOI: 10.1080/1461670X.2013.791077

Eldridge II, Scott (2018) Repairing a fractured field: Dynamics of collaboration, normalization and appropriation at intersections of newswork. *The Journal of Applied Journalism & Media Studies*, 7(3), 541- 559. https://doi.org/10.1386/ajms.7.3.541_1

Eldridge II, S. & Broersma, M. (2018) Encountering disruption: Adaptation, resistance and change. *The Journal of Applied Journalism & Media Studies*, 7(3), 469-479. https://doi.org/10.1386/ajms.7.3.469_1

Flick, Soziologe, Psychologiestudium, Soziologiestudium, Prof. Dr. Phil., Heidelberg, and Berlin. *Qualitative Sozialforschung : Eine Einführung*. Orig.-Ausg., Vollst. überarb. Und

Erw. Neuausg., 3. Aufl. ed. Reinbek Bei Hamburg, 2005. Print. Rororo 55654.

Holton, Avery E.; Belair-Gagnon, Valerie (2018) "Strangers to the Game? Interlopers, Intralopers, and Shifting News Production." *Media and Communication* 6, no. 4 (2018): 70-78.

Lewis, Seth C. (2012) The Tension Between Professional Control And Open Participation, *Information, Communication & Society*, 15:6, 836-866, DOI: 10.1080/1369118X.2012.674150

Lewis, Seth C. & Kaufhold, Kelly & Dominic L. Lasorsa (2010) Think About Citizen Journalism, *Journalism Practice*, 4:2, 163-179, DOI: 10.1080/14616700903156919

Lewis, Seth C. & Oscar Westlund (2015). Actors, Actants, Audiences, and Activities in Cross-Media News Work, *Digital Journalism*, 3:1, 19-37, DOI: 10.1080/21670811.2014.927986

Lewis, Seth C. & Usher, Nikki (2014) Code, Collaboration, And The Future Of Journalism, *Digital Journalism*, 2:3, 383-393, DOI: 10.1080/21670811.2014.895504

McLuhan, Marshall & Fiore, Quentin (1967). *The Medium Is the Massage: An Inventory of Effects*. Berkeley: Gingko Press.

McNair, Brian. "The Truth Is Out There, Somewhere." *Journalism* 20, no. 1 (2019): 222-25.

Muthukumaraswamy, Karthika (2010) When The Media Meet Crowds Of Wisdom, *Journalism Practice*, 4:1, 48-65, DOI: 10.1080/17512780903068874

Sheikh, Shela, James Burton, Anselm Franke, Eyal Weizman, and Goldsmiths' College. Forensic Architecture. *Forensis : The Architecture of Public Truth : [a Project by Forensic Architecture, Centre for Research Architecture, Department of Visual Cultures,*

Goldsmiths, University of London : On the Occasion of the Exhibition "Forensis", Curated by Anselm Franke and Eyal Weizman, March 15-May 5, 2014, Haus Der Kulturen Der Welt, Berlin]. Berlin: London: Sternberg Press; Forensic Architecture, 2014.

Waisbord, Silvio (2018) Truth is What Happens to News, *Journalism Studies*, 19:13, 1866-1878, DOI: 10.1080/1461670X.2018.1492881