Tracing Truth:
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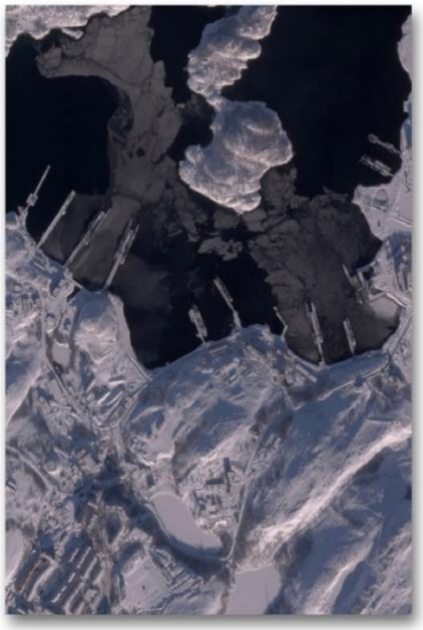
An Actor-Network Approach to Newsroom Practices in Norway



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Abstract

In the wake of Russia's invasion of Ukraine on February 24th, 2022 (Børringbo, 2022), a new wave of information chaos swept across social media platforms. False narratives, misinformation, disinformation, and war propaganda spread rapidly, soon overwhelming the digital information landscape (Henriksen, 2022). Overnight, newsrooms across the world had to grapple with the magnitude of this challenge. In a Norwegian contest, journalists in different newsrooms also faced a striking realization; Their current verification knowledge and practices were inadequate to face the new information war. To address this problem, a group of journalists and media experts came together and created a new Norwegian newsroom, called Faktisk Verifiserbar (Greger, 2022). The main goal was to collectively work on verifying information related to the war. The media partners aimed to fight back the flood of false information caused by the invasion and the disinformation that constantly emerged on social media. Using the lens of Actor-Network Theory (ANT) and drawing on various theories within Science and Technology Studies (STS), this thesis looks at the interplay between human creativity and digital technologies in modern media practices by analyzing the Faktisk Verifiserbar newsroom as socio-technical systems and cyberinfrastructures. By exploring and presenting the complex webs of relationships, interactions, and power dynamics that influence news production processes and outcomes, the thesis unboxes how journalists utilize digital tools and internet technologies to construct facts and shape realities. Furthermore, it explores the dynamics between human and non-human actors within the newsroom, providing valuable insights into what we might call the sociotechnical landscape of journalism and media practices.

Acknowledgments

Completing this master's thesis has been a huge personal challenge. While the decision to apply for the master's program at TIK sprung out of post-pandemic courage, I could not have foreseen that the two years of studying also would involve a big personal trauma that eventually set me back physically and mentally for months.

Many great people have been a part of my academic journey. I could not have done it without you.

First and foremost, I would like to thank the journalists and leaders of Faktisk Verifiserbar and Pressens Hus in Oslo for granting full access to the project and for sharing impressive verification insights. A special thanks to Kristoffer Egeberg, Espen Olsen Langfeldt, Mette Iren Franzen and Helje Solberg. I truly believe that the groundbreaking work of Faktisk Verifiserbar will have an impact on Norwegian and international journalism practices for years to come.

I would like to thank my supervisor at TIK, Professor in Science and Technology-studies (STS) Susanne Bauer, for embracing my project. I appreciate your patience. I also admire and appreciate your ability to be experimental in your own research.

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And finally, to Ola, my life and light. I love you endlessly.

Ingunn Andersen, Oslo, June 2023

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1. Introduction. The Digital Information War

The week before Russia launched its full-scale invasion of Ukraine in February 2022 (Børringbo, 2022; Osborn & Nikolskaya, 2022) The Barents Observer, an independent Russian-English newspaper focusing on news related to the Artic and Barents Sea Region, published an article with the alarming title: "Russia issues largest ever warning zone in Norwegian Part of the Barents Sea" (Nilsen, 2022).

The article, published on February 15th, 2022, included a digital map known as a NOTAM, which stands for Notice to Air Men (Federal Aviation Administration, 2023). This specific digital map is openly available on the internet and is used to provide important and traceable information about flight operations. On the NOTAM map issued by Russia the week before the invasion of Ukraine, red and blue pins were scattered throughout a large area, all indicating potential danger areas for air operations. In accordance with international standards, Russia was obligated to issue this warning clarifying that the pins on the NOTAM map indicated areas that might be at risk of being targeted by Russian missiles. The warning covered a vast area, stretching from the Varanger fjord in the east to Bear Island in the northwest. This made it the largest warning zone ever established in this part of the Barents Sea, but despite the clear warning, few Norwegian journalists paid real attention to its significance except for the Barents Observer (Nilsen, 2022).

This master's thesis tells the story of how a new media collaboration called Faktisk Verifiserbar which emerged during Russia's war in Ukraine, has marked a significant change in how journalists across different newsrooms in Norway effectively trace and verify digital information, like the NOTAM-map. The Verifserbar-project emerged as a direct response to the challenge of disinformation, aiming to bridge the gap in journalistic competence and equip Norwegian journalists with better skills and understanding of how to effectively verify digital information. By harnessing digital tools and practicing innovative and disruptive methodologies, like for example tracing information on NOTAM-maps, the Faktisk Verifiserbar newsroom in Oslo, Norway has marked a significant shift in how to handle online disinformation. It is safe to say that over time the project also set a new standard for journalistic practices in Norway.

The thesis provides an exploration of how technologies shape the work practices of journalists in today's digital media landscape. It in many ways reveals the extensive ways in which these technologies are used and intertwined throughout the journalist's daily routines. By giving insights into these social and technical dynamics, this research might help to better understand how journalists rely on and incorporate various technologies into their work, ultimately contributing to our broader understanding of verification practices in journalism.

The rising global concern surrounding disinformation over the past decade forms an essential backdrop to this thesis. Inspired partly by the groundbreaking work of Nobel Prize-winning journalists Maria Ressa and Dmitrij Muratov, who themselves have been at the forefront of combating disinformation, the introduction chapter aims to build toward a deeper exploration of the transformative potential of journalism in the face of a digital information war.

1.1. A Nobel Inspiration

In October 2021, only months before the war, Maria Ressa, an American-Philippine journalist, and her Russian colleague, Dmitrij Muratov, received the Nobel Peace Prize in Oslo for their efforts for press freedom, independent reporting, and democracy in their respective countries (Bakken, 2021). The award recognized the journalist's groundbreaking work in combating digital disinformation. In her Nobel Lecture in Oslo in December 2021, Ressa dedicated the prize to journalists worldwide and drew attention to the historical significance of the award, referencing the last journalist to receive the prize in 1935, Carl von Ossietzky, who was unable to attend due to being imprisoned by the Nazis. During her speech, Ressa also highlighted the potentially transformative role of technology as an "accelerant for truth" in the fight against disinformation:

> “Without facts, you can’t have truth. Without truth, you can’t have trust. Without trust, we have no shared reality, no democracy, and it becomes impossible to deal with our world’s existential problems: climate, coronavirus, and the battle for truth” (The Nobel Foundation, 2021).

Ressa and her perspectives on technologies as a democratic tool to preserve factual information have inspired my studies in Science and Technology Studies, STS, at the Centre for Technology, Innovation, and Culture (TIK) at the University of Oslo. By exploring and documenting the establishment of the Faktisk Verifiserbar newsroom and situating media

practices within the broader context of the global disinformation landscape, my thesis aims to contribute to a deeper understanding of the evolving media environment and journalists' efforts to combat digital disinformation.

1.2. Research Questions

The central research question that has formed the core and led the way for this master thesis is as follows:

"How do the journalists within the Faktisk Verifiserbar newsroom use technological tools to trace and verify information from the warzone in Ukraine?"

To make a broader approach to analyzing the research data, an additional research question has been formulated. This question hopefully contributes to a better operationalization of the study. The second research question also speaks to a core issue within both media practices and Science and Technology-studies, STS: How much knowledge is produced by human actors, and how much is produced by machines or technologies?

The research question is:

"What is the intricate relationship between various technologies and the human actors working within the context of the Faktisk Verifiserbar newsroom?".

The main focus of the thesis is placed on how journalists inside this specific newsroom harness digital tools to trace and validate the information that emerges from the warzone in Ukraine. The study also examines the intricate dynamics between technologies and human agency.

1.3. Thesis Objective and Relevance

STS scholars at UiO, Kristin Asdal, and Hilde Reinertsen underline that becoming an analyst involves asking new research questions about existing theories. By bringing in new empirics and concepts researchers and students have the possibility to contribute to a broader research community (Asdal & Reinertsen, 2022). By applying the theoretical framework of the Actor-Network theory, ANT within the broader theoretical world of Science and Technology Studies, STS, the thesis seeks to provide a deeper understanding of the interactions between human and non-human actors in newsroom practices. Taking inspiration from influential scholars like

Bruno Latour (e.g., Latour, 1996; Latour & Woolgar, 1986), John Law (e.g., Law, 2019; Law & Singleton, 2014), Susan Leigh Star (Star, 2016; e.g., Star & Griesemer, 1989), and Michel Callon (1986), the research sets out to explore information, technology, and journalists in action by analyzing the newsroom as a socio-technical environment.

For the purpose of this thesis, my focus has been on finding research questions that align with my interests in media and journalism and at the same time make a contribution to studies within the field of STS. By extending the use of The Actor-Network theory, ANT, and building on my interest in journalism and verification work, I allowed myself to ask questions about newsroom practices and knowledge production in the media industry.

Looking into how information is verified and describing how journalists use digital systems to map the internet, my case study of Faktisk Verifiserbar also engages with Infrastructure traditions and Valuation Studies in STS (e.g., Muniesa, 2011). The thesis focuses on how information from the warzone in Ukraine is traced, put into digital systems created by the journalists in Faktisk Verifiserbar, and then later given value true the practices that goes into verification.

The thesis focuses on the process of tracing and verifying information from the warzone. My research also holds some relevance within the fields of journalism and media studies. It establishes meaningful connections with the academic discourse surrounding disinformation, particularly within the context of the Russian-Ukrainian conflict. By describing the work practices of the journalists inside the Faktisk Verifiserbar newsroom it also explores OSINT, Open-Source Intelligence, in a Norwegian journalistic setting, offering insights into the information dynamics that in the end also shape the public's trust in the news media.

1.3.1. Thesis-structure

The thesis is structured in seven main chapters. These chapters are:

1. Introduction: The backdrop for the thesis and academic inspiration
2. Theoretical Approach: STS theories and inspiration
3. Methodology and Research Approach
4. Empirical Background: Background knowledge to understand the thesis
5. Ethnographic Recordings: Research from inside the newsroom

6. Analyses: Unboxing Newsroom practices
7. Conclusion, Empirical Reflections: Overall reflections and the future of Faktisk Verifiserbar.

2. Theoretical Approach

The chapter presents the theoretical background and situates the empirical and analytical work in the master thesis. Overall, the thesis is inspired and influenced by a row of different STS scholars, such as the work of Bruno Latour, Michel Callon, Donna Haraway, Susan Leigh Star, Noortje Marres, and John Law.

While the analytical and empirical work inside the newsroom is anchored in Actor-Network Theory (ANT) and Material Semiotics, the thesis also relates to the digital turn in STS when dealing with media technologies and verification practices in journalism as issues inside the newsroom (Marres, 2015). Without having the ambition to evoke the full methodology, The analyses have an intuitive and holistic approach to ANT (Morita, 2013).

I also draw in concepts linked to pragmatism in STS related to American philosopher John Dewey (1939). The chapter starts with a presentation of key elements within the ANT framework, highlighting theoretical and historical issues that are important in STS and crucial for the wider understanding of the coming of this thesis. The chapter also includes a short section about Valuation Studies, Infrastructure literature, and the Digital Turn in STS, with the notion that they are all considered STS-theories closely related to ANT traditions.

2.1. The Actor-Network Theory, ANT

The Actor-Network Theory, ANT is a sociological framework and methodology within Science and Technology Studies, STS, that lets the researcher explore the world as *technoscience.* The methodology focuses on the relationships between human and non-human actors and understands technology, science, and the social as complex, heterogenous webs or weaves.

To put it with Bruno Latour (Latour, 1996, p. 370):

> "ANT claims that modern societies cannot be described without recognizing them as having a fibrous, thread-like, wiry, stringy, ropy, capillary character that is never captured by the notions of levels, layers, territories, spheres, categories, structures, and systems."

In its classical form, ANT is explorative and multiple. The framework shows how realities are shaped and re-shaped (Law, 2019; Law & Singleton, 2014). Applying ANT to the newsroom lets us gain insight into the web and power dynamics that shape news production processes and outcomes. The theory allows us to go beyond human perspectives and consider the role of non-human actors and their agency in shaping the newsroom as a socio-technical system.

In my study of newsroom practices, I employ Actor-Network theory (ANT) as a heuristic tool to gain insights into the intricate dynamics and interactions within a newsroom ecosystem. ANT, with its focus on the relationships between human and non-human actors, allows us to examine how various elements, such as technology, digital tools, and organizational structures, shape and influence the verification processes in the Faktisk Verifiserbar newsroom.

2.1.1. Laboratory Life, early ANT

The core concepts within classical ANT were first developed in Bruno Latour and Steve Woolgar's book Laboratory Life (1986) where Latour does an in-depth case study of the laboratory practices at the Salk Institute for Biological Studies in California. Over the course of two years, Latour follows the scientific practices inside the biological laboratory like an anthropologist. During the 1980s and 90s, ANT evolved through several important scientific papers, written by researchers such as Bruno Latour, Michel Callon, and John Law. Actors were sorted out, traced, and later followed through their actions, and the research gradually developed a new theoretical system, an analytical methodology to reveal how knowledge, innovations, and facts are produced. The theory, now widely known as The Actor-Network theory, has since conceptualized a broad set of analytical tools, where the human, and non-human actors, the social and the sciences all become entities taken into account.

2.1.2. ANT and Associations, Heterogeneity & Multiplicity

ANT lets us think about the social and the world as *associations*, saying that the world is best understood as complex, relational webs (e.g., Latour, 1996; Law, 2019; Law & Singleton, 2014). To study the world is to study associations in all material forms (Latour, 2005). In 1986 the French STS researcher Michel Callon wrote a now infamous article about the decline in scallop populations in St. Brieuc Bay in France (Callon, 1986). In the paper, Callon presents a new approach to the study of powers and relationships, which he calls the *sociology of*

translation. Without deploying the entire framework of translations, this thesis is interested in what Callon calls *generalized symmetry,* where the analytical tracing of the newsroom doesn't distinguish between humans, nature, and technologies, but instead, tries to trace their respective places in the actor-network within the Faktisk Verifiserbar newsroom.

2.1.3. Interessement and Multiple Realities

Another concept Callon talks about in the article about fishermen and scallops is *interessement.* The term describes the translations of interests that happen when heterogeneous actors, often with very different concerns, make efforts to align in an actor-network (Cozza, 2021, p. 209; Michael, 2017, p. 38; Star & Griesemer, 1989, p. 389). ANT also uses the term *ontologically multiple* to describe the world's multiplicity (Law & Singleton, 2014). Ontology is the classical philosophical term to describe what belongs to the real (Baiocchi et al., 2013).

2.1.4. Material Semiotics

> "There is no way we can invent realities" (Law & Singleton, 2014, p. 10).

Another significant STS researcher, John Law places ANT within the bigger academic family of Material Semiotics. This wider academic tradition includes a range of analysis disciplines within the social sciences, such as feminist material semiotics and social and cultural anthropology (Law, 2019, p. 1). Material Semiotics, hereby including ANT, is a set of theoretical tools for exploring how practices in the social world are woven simultaneously into both material and semiotic weaves. The weaves are semiotic because they carry meaning and are, what Law calls *relational*. They are also material because they *shape* physical things. Law's structure (Law, 2019, p. 1) of how these threads can be sorted out is relevant to the discussion in this thesis and an inspiration for further analyses. It is also productive for this thesis to apply ANT and Material Semiotics to the newsroom in three main steps:

1. Identifying Actors: What and who are the human and non-human actors inside the newsroom? Human actors may include journalists, editors, and other staff. Non-human actors could be technologies, newsroom policies, organizational structures, and cultural factors that might shape news production and verification processes.

2. Mapping Relations: How is the weaving process (inside the newsroom) achieved? ANT emphasizes that actors have agency and that entities can influence and shape outcomes. For example, it might be interesting to look at how journalists interact with technologies and in turn how the technologies influence news production.
3. Tracing the Networks: Where do the threads come from and where do they meet? How is their character? What do they include and exclude, and how is the process of translation inside the newsroom?

2.1.5. Inscription Devices

One significant part of ANT and Material Semiotics suitable for newsroom research is the recognition of *inscription devices*. In STS these are scientific or technological tools and machines that are used to produce knowledge:

> "More exactly, an inscription device is any item of apparatus or particular configuration of such items which can transform a material substance into a figure or diagram which is directly usable by one of the members of the office space (Latour & Woolgar, 1986, p. 51)".

After reportedly having discussed Actor-Networks with Michel Callon over a period of seven years, Latour published the book *Science in Action* (1987) where he gives an even more precise definition of these instruments. Here Latour defines inscription devices as any (instrumental) setup that provides a visual display in a text (Latour, 1987, p. 87). The concept of inscription devices is particularly interesting when going into the further analysis and tracing of information, journalists, and technology in the Faktisk Verifiserbar newsroom. It also highlights my second research question which asks how technology and humans are connected. According to Latour, it allows the researcher to describe a set of occupations in the laboratory (newsroom) without being disturbed by the variety of their material shape (Latour & Woolgar, 1986, p. 89). Just like scientists in a laboratory, journalists in a newsroom produce texts, materials, facts, and finally new realities with the help of technologies and digital tools.

2.1.6. Opening Black Boxes

Another key concept that can be useful when analyzing the newsroom and information in action, is STS's understanding of *black boxes*. A black box contains something that no longer

has to be considered, but when seeing the world as *technoscience* where the social and the technical are taken into consideration the black box can be reopened (Law, 2007; Michael, 2017, p. 154). Black boxing transfers directly to the way ANT study practices where the objects of study are not the final product. Instead, the researcher focuses on the process that leads up to that product. Faktisk Verifiserbar practices verification journalism. This way of working is in itself designed to unpack the black boxes of digital information, but what happens if we also try to unpack the process that goes into the journalists' unpacking?

2.1.7. Situated Knowledge and ANT

In 1986, when ANT was on the rise, STS researcher Donna Haraway coined the term s*ituated knowledges* in a reply to Sandra Harding's text *The Science Question in Feminism* (Cozza, 2021, p. 145). Like Latour and Law Haraway problematizes the understanding of objectivism in science. By using the concept of *technoscience* in a more political way, Haraway is saying that all knowledge production is situated. Context is always relevant, according to Haraway (Asdal et al., 2007). She also argues that narratives, how something is presented, and the words we choose shape realities. There is no such thing as neutrality when it comes to language. (Law, 2019, p. 7). As I am a journalist studying journalists, I use Haraway's insights about standpoints and situated knowledges to reflect on my role as a researcher. Her concepts and understanding are also useful to discuss objectivity in the media industry and reflect on whether or not it is possible for journalists to be objective. In relation to the Faktisk Verifiserbar newsroom, it is also relevant to look at context as an analytical concept tied to how the verification processes affect the information that is acted upon.

2.1.8. Tracing inside ANT

Tracing when working within Material Semiotics and ANT means sorting out human and non-human actors. In other words, tracing relates closely to the empirical work of describing practices, for example inside a newsroom. However, the tracing is pointless without also following the trajectories (Latour 96, p. 380) It is following the actors in action that let the researcher trace the multiple realities and study the world as associations (Law, Singleton 2015). In fact, according to Latour, an actor network is an entity that *both* traces and inscribes (Latour 96, 380).

This understanding means that the empirical work and the written, ethnographic presentation of such a work are in themselves important parts of the analytical process and research outcome in an ANT-analyses.

2.1.9. Doing ANT Ethnography

The Actor-Network theory has a longstanding tradition of rejecting the separation between empirical work and theory. This is also the case in this thesis, where empirical findings are presented as ethnographic work and in turn given agency through the analyses. Separating empirical work and theory makes ANT more or less pointless, according to Bruno Latour. He is saying that actors who are given the power of an actor network *become* explainable:

> The very divide between description and explanation, how's and whys, blind empiricism, and high theorizing is as meaningless for ANT as the difference between gravitation and space in relativity theory (Latour, 1996, p. 376).

According to Latour, separating the real-world observations from the theories we use to interpret them, in many ways undermines the fundamental value and meaning of the Actor-Network theory. Expressed in another way, ANT emphasizes the importance of connecting our own observations with the ideas and concepts we use to make sense of them.

2.1.10. Case Studies in ANT

Studying cases is essential for ANT and Material Semiotic researchers. Very often the case study is focused on ethnographic studies of work practices. This is also the object of study for my fieldwork with the Faktisk Verifiserbar newsroom. John Law describes material semiotics as a research approach that works through cases in which theoretical and empirical work can't really be separated (Law, 2019, p. 2). In the next chapter about methodology, I give a closer description of my case study and how it comes to life by applying participant observations inside an ANT framework.

2.1.11. Facts and ANT

Dealing with facts and how knowledge is produced represents a core issue within the academic field of STS (Latour & Woolgar, 1986). Facts are also a big concern within the media industry. In fact, journalists, media institutions, and ANT practitioners *all* deal with facts and the

production of facts on a daily basis. The Faktisk Verifiserbar newsroom is part of a Norwegian media structure called the Faktisk Foundation that initially was created to keep facts alive (Faktisk.no, 2023). The Actor-Network Theory and Material Semiotics came into existence to nuance *what facts are.* When it was introduced in the 80s, ANT and its contributors' sparked controversy within academia, particularly in the natural sciences because of the critical approach to scientists and laboratory practices. Instead of focusing on the results of scientific work, ANT studied practices and practitioners in detail to explain how realities are heterogenous and multiple. Latour, Law, Haraway, and others argued that facts result from a produced reality, not reality itself (e.g., Haraway, 1988; Latour & Woolgar, 1986; Law & Singleton, 2014).

2.1.12. The Post-Truth Discussion and ANT

In recent years, the Actor-Network theory, ANT, has been criticized for "inventing realities" (Law & Singleton, 2014), with many arguing that it has contributed to the rise of a post-truth era. One of the key concerns raised by this critique is the potential for ANT to fuel skepticism towards established scientific knowledges and facts (Sismondo, 2017). It is argued that by talking about fluidity and multiplicity of world perspectives, ANT could be interpreted as casting doubt on established scientific truths and providing a platform for people like climate skeptics to challenge well-established research. In response to this critique, Bruno Latour offered a different perspective in an interview with The New York Times (Kofman, 2018). Here Latour argued that the criticism directed towards ANT actually reaffirms the fundamental insights of the theory itself. He suggested that the current state of the world, typically characterized by skepticism towards established facts, demonstrates the potential limitations of traditional notions of truth.

According to Latour the ANT theory's complexity and focus on co-production of knowledge and the entanglement of human and non-human actors have always highlighted the multiplicity and constructed nature of facts. He and other STS researchers' concern is that it is important to note that ANT as a theoretical framework does not promote skepticism towards science or scientific work. Rather, the methodology offers a lens to analyze reality through a broader and more nuanced lens. The final responsibility lies in the interpretation and application of the theories by researchers, practitioners, and master students. By recognizing the potential misuses and limitations of ANT, scholars can refine and adapt the theory to address emerging

challenges in an era characterized by heightened skepticism and, relevant to this thesis, digital information warfare.

2.2. Valuation Studies

In relation to the digital tracing of information inside the newsroom, I have also drawn in some of the key theoretical concepts from Valuation Studies in STS. Building on the pragmatic ideas of the American philosopher John Dewy (1939), STS researchers see valuation processes as an action. Instead of studying end value, the object of study is how things are given value (Dewey, 1939; Muniesa, 2011). This again relates to practices and the study of practices in STS, because valuation refers to something that *happens* to something (Muniesa, 2011, p. 26). In this thesis, it is an interesting analytical point to discuss how verification journalists practice a valuation of information that in turn transforms a picture or a video from uncertain information to verified or unverified information. Overall, the application of ANT as a heuristic tool, combined with valuation studies, can possibly enable a deeper understanding of newsroom practices and webs of relationships and evaluations that shape them.

2.3. ANT and the Digital

As this chapter has demonstrated, this thesis is grounded in the Actor-Network-theory and Material Semiotics, but the analyses also apply bits and pieces inspired by the digital turn in STS. In many ways, it is difficult to single out Digital STS as a standalone research strain, but the material has many interesting turns. For example, this thesis is inspired by the work of Atusoro Morita, Anders Blok, and Shuhei Kimura who write about the civic measurement infrastructure that emerged after the Fukushima disaster in Japan in 2011. With the help of ANT, they map out the networks that eventually transformed government and industry physical monitors for radiation into public, digital maps (Morita, 2013, p. 80). Recent literature concerned with the digital STS suggests that the field was actually born directly into the computation era. Important academic figures such as Haraway, Latour, and Star have all engaged with concepts inflected by the digital world from an early stage in their research (Vertesi et al., 2019, p. 1).

2.3.1. Infrastructures and Boundary Objects

Susan Leigh Star is one of the most important figures in the studies of infrastructures in STS. According to Star, more people should engage in *boring things* like different forms of infrastructure. For example, she claims it takes a lot of digging to restore what appears to be

dead (digital) lists (Star, 2016, p. 377). In 1996 Star and Karen Ruhleder analyzed the Worm Community System (WCS), a software designed for biologists (Star & Ruhleder, 1996). At the beginning of the article, they use a quote from Bruce Schatz (1991) that is also relevant for the case study in this thesis:

> "An electronic community system is something that encodes and manipulates the range of knowledge and values necessary to function effectively in a community or organization" (Schatz, 1991).

While tracing the actor networks inside the Faktisk Verifiserbar newsroom it is relevant for this thesis to discuss how verification practices in journalism create and defines digital infrastructures for verification practices.

Another concept that is useful for the analyses of journalist practices and the newsroom context, is the notion of *boundary objects*, objects that are both adaptable and adjustable at the same time (Star & Griesemer, 1989).

2.3.2. The Actor-Network Theory in Media Studies

Several academic efforts have been made to establish a link between media theories and the Actor-Network theory (Couldry, 2008). By recognizing the power and significance of technologies as important actors within media networks, new and relevant research efforts have contributed to understanding the role different forms of technology have when it comes to shaping the media landscape and the practices inside newsrooms. Following the logic of the Actor-Network theory, Westlund et. al (2022) understands the increased focus among journalists on fact-checking and verification practices as a concrete answer to the growing concern about an information disorder (Westlund et al., 2022, p. 193). They consider these practices to be sociotechnical, where technological and human efforts go hand in hand.

3. Methodology and Research Approach

In this chapter, I will go through the extensive range of methods employed to address the two research questions outlined in the first chapter of this master thesis. Furthermore, I will explain the measures taken to ensure the rigor of the study.

The methodological framework employed in this thesis is characterized by triangulation, meaning a combination of various approaches to explore the research questions (Hay & Cope, 2021, p. 11).

The study embraces a mixed methodology, which incorporates three fundamental pillars of qualitative research design: case studies, semi-structured interviews, and participant observation. By incorporating these diverse methods, the thesis aims to analyze a wide selection of data. To provide a far more comprehensive understanding, an ethnographic lens is applied to the data within the framework of the Actor-Network theory, which offers valuable insights into the interactions and dynamics between human and non-human actors in the newsroom. I start the chapter by giving a detailed account of the research design adopted for this thesis.

3.1. Designing The Thesis

As a researcher and master's student, I am shaped by my interpretive community, which includes the academic community at the Center for Technology, Innovation, and Culture (TIK) and the University of Oslo (UiO). Furthermore, my background as a journalist and my experience in news reporting and media has made a great impact on my research focus, theoretical framework, analytical approach, and writing process. These influences play a critical role in shaping the final trajectory of my research journey, hopefully enriching the academic exploration I undertake.

By drawing on these specific insights gained from working in the field of news journalism for many years, I might be able to bring some new perspectives to the practical realities of the media industry. This blend of academic and professional perspectives can hopefully also contribute to deeper exploration, and in the end, enable a more comprehensive understanding of the research topic.

3.1.1. Choosing Topic and Case for the Thesis

The thesis is designed around a specific case study, the Faktisk Verifiserbar newsroom at Pressens Hus in Oslo, Norway. Since the early stages of my master's program, I knew that I wanted to shape my research as a qualitative case study that had the potential to bridge my academic pursuits with my background as a journalist in the media industry. During my second year at TIK, I began exploring the combination of STS theories, journalism, and media topics.

It quickly became evident that STS theories emphasizing practices and unboxing resonated with my experiences as a news journalist. This realization motivated me to incorporate parts of these theories into my research process. Moreover, I was determined to engage in fieldwork that allowed me to create a clear physical context for my writing, namely the newsroom itself.

The topic of digital disinformation in journalism gained significant relevance when Russia went to war against Ukraine at the beginning of my second semester at TIK. In the initial phases of my research design, I explored the topic of disinformation by looking at how fact-checking journalists use digital technologies to assign value to information. In previous assignments and exams at TIK, I for example explored the impact of revealing American satellite images from the city of Bucha in Ukraine, which fundamentally changed the narrative of the war (Browne et al., 2022). These images, displaying deceased civilians on the streets, later served as crucial evidence of Russia's war crimes. In the introduction chapter, I referenced journalist and Nobel Prize Winner, Maria Ressa, who advocates for the use of technology as an accelerant for truth in journalism. Intrigued by this notion, I came across the Faktisk Verifiserbar project at an early stage of my research for the master thesis. The project was an interesting case study for several reasons. Firstly, it was a disruptive and innovative collaboration that emerged as a direct response to an ongoing historical event, namely the war in Ukraine. Secondly, due to my connections and professional background, I was fortunate to gain full access to the project while the journalists were still actively engaged in their work.

3.2. Case-studies in Qualitative Research

Case studies are considered a core methodology in qualitative research designs. Robert K. Yin (2009) is a prominent researcher known for his work on case study methodology. According to Yin, case studies serve as a methodological approach for in-depth exploration and analysis of specific phenomena within their real-life context. The case study of the Verifiserbar-newsroom sheds light on the broader impact of emerging technologies, showcasing how they

shape and reshape journalistic practices on a larger scale. The case study of Faktisk Verifiserbar also serves as an example of the close relationship between journalists and technologies shedding light on how the construction of facts relies on both human and non-human efforts.

3.3. Interviewing Inside The Newsroom

Interviewing can be seen as a more formal data-gathering process, where a person is not doing his or her normal activity (Hay & Cope, 2021, p. 424). A qualitative research design can choose from three main categories of interviewing: structured, unstructured, and semi-structured interviews (Dunn, 2021). Semi-structured interviews embrace a dynamic framework where a portion of the questions are pre-planned and other questions emerge organically during the conversation. For this thesis, I have combined semi-structured interviews and unstructured interviews. The unstructured conversations with the journalists took place while I was doing participant observation in the newsroom. The integration of participant observation and interviews has hopefully served multiple purposes and fostered a better connection between the interviewees and me as the researcher.

The informal groundwork that comes with participant observation laid the foundation for a more relaxed atmosphere during the formal interview conversations, hopefully allowing the informants to open up more freely and share their insights with greater confidence.

As a news journalist, I am aware of the challenges associated with interview planning and the practical constraints that often arise during real-life interviews. Recognizing the importance of obtaining comprehensive and detailed information from informants, I wanted to create an interview guide that would allow for flexible and adaptable conversations.

I also sought to create an interview guide that would allow for flexible conversations. By blending participant observation and interviews, my intention was to create a more holistic research experience that bridged the gap between formal data collection and organic interactions within the physical newsroom through participant observation.

3.4. Participant Observation

In addition to interviews and background research, this thesis relies heavily on participant observation and ethnography, both as a data analysis strategy and as a way to sort out the newsroom and trace human and non-human actors. Annette Watson is a scholar renowned for her contributions to the field of participant observation and ethnography. Watson emphasizes the need to differentiate between participant observation and ethnography. (Watson, 2021, p. 125). She explains that ethnography seeks to provide written descriptions of the inner worlds of cultures in an academic manner, while participant observation is the method researchers employ to gather such data.

In my research for this master thesis, the Actor-Network theory and Material Semiotics in many ways enable participant observation as a methodology and an ethnographic writing style as a way to access and understand the data.

Watson and Karen E. Till (2010) see ethnography as an iterative, non-linear research practice, a notion I in many ways can relate to:

> "That is, we are concerned with writing as we observe and with how we participate as we write, all the while revisiting and thinking through our past participations and observations (Watson & Till E., 2010, p. 17)".

3.4.1. Ethnographic Strategy

Data collection for participant observation always has a starting point (Watson, 2021, p. 137). My fieldwork in the Faktisk Verifiserbar newsroom at Pressens Hus began on the 22nd of November 2022. I spent my last physical day with the project on December 14th, 2022. In total, I did ten days of participant observation in two different locations which functioned as newsrooms during my time observing the team. I did ethnographic observations during the same period, writing down conversations and observational details. Occasionally I took pictures and recorded sessions, some of which are included in the thesis. I also did in-depth interviews with journalists and participated in live events, like a birthday party for the Faktisk news organization and a meeting where the team made a scene for a documentary film.

Inspired by among others, John Law, and Bruno Latour, I have used relevant participant observation and ethnographic recordings from some of my first days to introduce the journalists that I have later interviewed and the newsroom context.

3.5. Securing Rigor

Doing participant observation in any form means being involved. In my case, this has a double meaning since I am a journalist studying other journalists. Many of them share my regular workplace at the Norwegian Public Broadcaster, NRK, but it is important to note that I haven't been directly involved with any of the informants before as a close colleague or leader. Neither have I worked directly with the Faktisk Foundation or Faktisk Verifiserbar project before starting my studies.

I as a researcher have a bachelor's degree in journalism. I worked as a news journalist for almost twenty years before becoming a part of the research community at the Centre for Technology, Innovation, and Culture, TIK at the University of Oslo. To secure rigor I have practiced a high degree of transparency and critical reflexivity throughout my research process, both explicitly and by integrating background knowledge in my writing. To conduct reflexive research means constantly reflecting on one´s positionality in the fieldwork (Hay & Cope, 2021, p. 432). In my first year of studying at TIK, the Innovation studies literature introduced the term *tacit knowledge*, defined by Richard R. Nelson and Sidney G. Winter (1982) as the knowledge that can't be fully articulated or skillsets that the performer *does* but is not fully aware of what *is* (R. & W. Nelson S. 1982, n.d., p. 73). My own perception of this is that by practicing something, for example, an occupation for a long time the person will automatically adopt knowledge that is only achievable by doing specific things over a given time. During my fieldwork at the Faktisk Verifiserbar newsroom, I used my tacit understanding gained from working in newsrooms as an investigative advantage. This allowed me to integrate myself more fluently into the newsroom setting and instinctively comprehend and adapt to the dynamics of the environment. Simultaneously, I approached the study of newsrooms and journalists from an external perspective, trying to imagine I had never been in a news environment before. This dual approach enabled me to navigate both the familiarity and novelty of the newsroom context, providing valuable insights into the practices and dynamics of the journalism profession.

3.5.1. Data Sampling and Transcribing

My research follows ethical guidelines given by the Norwegian Social Science Data Services (NSD). To conduct participant observation in the newsroom I applied for approval from NSD. The research was approved before I entered my fieldwork.

I have transcribed and translated all semi-structured interviews manually. During my fieldwork, I kept a participant observation journal that included both manual and digital notes. My research includes pictures from fieldwork and drawings of the newsroom, plus photos provided to me by the Faktisk Verifiserbar team. Some are included in the thesis. I have recorded soundbites and pieces of conversations outside of interview settings as part of my observation practice. A lot of direct quotes and observations are included in the thesis as a part of my Actor-Network strategy. Note that the interviews and quotes have been translated from Norwegian to English for utmost accuracy. This revision maintains the original intent of emphasizing the careful translation process while using concise language in accordance to what was originally said in Norwegian.

All five interviewees have signed a contract in connection to the Research proposal for this master thesis allowing me to use their names and quotes for the purpose of this research. All informants involved in the research are interviewed as professional sources and are without exception journalists and editors. The interviews are personal, but not private and always directly linked to the informant's work life as a journalist in Faktisk Verifiserbar and elsewhere.

3.6. Data Collection Strategy

The empirical data in this thesis is based on three weeks of fieldwork and participant observation in the Faktisk Verifiserbar newsroom at Pressens Hus in central Oslo in November and December 2022. I had full access to the newsroom and the journalists working with verification during this period and spent a total of ten whole days with them in the newsroom. The participant observation is combined with semi-structured interviews with journalists in Verifiserbar within the same period. I also interviewed and had background conversations with two other informants relevant to the thesis after my fieldwork. These are Martin Gundersen, journalist, and data expert in NRK Beta, NRKs news department for innovation and technology, and Arild Bergh, a principal scientist at The Norwegian Defense Research Establishment (FFI) and expert on social media misuse in a defense context. I ended up not using any of Bergh's data directly, but he provided meaningful insight about foreign states and

disinformation campaigns on social media platforms. After the fieldwork in the newsroom, I was given full access to the digital cyberinfrastructure system in Google Drive that the journalists in Verifiserbar used to trace and document information and verification processes. This allowed me to delve deeper into how media content was received, documented, and eventually published in the newsroom. The Verifiserbar Google Drive also provided me with valuable background information and reports about the project, some of which is included in this thesis.

3.6.1. Snowball Sampling

When it comes to conducting interviews, I have adopted a snowball sampling technique, which means requesting informants to suggest other individuals who are relevant to the research. This method allowed for a network of potential interviewees to expand organically, generating a diverse range of perspectives and insights. Throughout the course of my research, I encountered new sources and connections through existing material (Hay & Cope, 2021, p. 433). An illustrative instance occurred during my fieldwork at the Verifiserbar newsroom, where chance discovery played a role in my research process. While immersed in the newsroom environment, I had the opportunity to engage in a spontaneous conversation with Sohail Ahmed Khan, a Ph.D. candidate researching AI applications in media practices at the University of Bergen.

Although this encounter was unplanned, it proved to be highly valuable for my study. In fact, a part of my further research chapter draws upon insights from this unexpected interaction. The empirical background and ethnographic recordings chapters draw upon valuable insights shared by the Faktisk Verifiserbar team, which were obtained through my participant observation within their newsroom. Additionally, the chapter incorporates diverse data sources, including internal documents, online news articles, and supplementary interviews conducted after the fieldwork phase. In particular, interviews with journalists from Faktisk Verifiserbar conducted during November and December 2022 greatly contribute to the richness of the empirical foundation. Furthermore, it is worth noting that any unpublished documentation of significance is provided in the Appendix section.

3.6.2. Analytical Approach

As discussed in the theory chapter, the main goal of this master thesis is to examine how the newsroom operates as a sociotechnical system, in other words, a social work structure and community that includes both people and technology. By studying the interactions between journalists and the digital tools they use, we can gain a deeper understanding of how the Verifiserbar newsroom functions. This also speaks to the core of the Actor-Network theory, ANT, where my methodology and theoretical approaches meet, and my analysis is anchored.

To begin the study, I spent time getting to know the Verifiserbar newsroom and the journalists who work there. This involved observing their day-to-day activities and talking to them about their work. This firsthand experience forms the basis for the analysis, which follows the structures and ideas explained in the theory chapter. Inspired by the work of STS scholars. like Bruno Latour, I see the newsroom as a laboratory where information is examined and verified by a combination of digital tools and journalistic knowledge. While scientists in the laboratories study the natural world, journalists are also agents of change who shape the way we understand the world. In the case of Faktisk Verifiserbar, journalists play a crucial role in transforming information and determining its accuracy. They use a combination of technology and their own expertise to evaluate things like photos and videos and determine whether they are true or false. By studying the newsroom and the journalists within it, we can gain insights into how information is processed and verified in the digital age.

3.6.3. Coding and Processing Data

I have collected data through extensive ethnographic work in the newsroom and documented the journalist's work both visually, by audio, and by textual recordings. The interviews and live events have later been transcribed into Norwegian and then translated into English for the sake of the thesis. The main purpose of coding qualitative material is to make sense of the data sets and detect patterns that might have analytical potential (Cope, 2021, p. 361). The thesis leans mainly on descriptive coding, meaning that my analyses reflect subjects stated by the informants and otherwise overall themes that have emerged analytically from the data material (Cope, 2021, p. 360).

Qualitative research often produces masses of data that might be difficult to interpret, but effective coding might help to reduce the amount. The thesis combines a deductive and inductive research design, and the analytical aspect relies on both descriptive and analytic

coding. Descriptive codes are recognized as category labels, for example in the form of chapter headlines, while the analytic codes are more thematically derived from the analysis process itself. By adopting a combined deductive and inductive research design, this thesis navigates through the case study, effectively merging these two approaches (Cope, 2021, p. 355).

3.7. List of informants

The list of informants includes the journalists that have contributed insights during the in-depth, semi-structured interviews. They are quoted with full names in the thesis.

Table 1: List of informants from Faktisk Verifiserbar

Name	**Position**	**Employer**	**Interview date**
Rano Tahseen	Journalist and social media expert	TV2	14.12.22
Jan Gunnar Furuly	Data journalist and investigative reporter	Aftenposten	19.12.22
Olav Holger Næss	Researcher and journalist	NRK	29.11.22
Ruben Solvang	Data expert and journalist	NRK	09.12.22
Martin Gundersen	Data expert and journalist	NRK	21.04.23

3.8. Further Ethical Remarks

Rigorous and ethical research processes within the Social Sciences should reflect on methodology and research strategies over time. When looking back at the data sampling period of my master's project in 2022, it becomes clear that an even more extensive inclusion of informants and journalists could have provided an even broader insight into newsroom practices and verification work in the Faktisk Verifiserbar newsroom. Spanning an entire year, the project engaged with the involvement of over 30 Norwegian journalists. In order to keep a clear focus within a given timeline, I have conducted in-depth interviews with in total five journalists inside the Faktisk newsroom. Even though the master thesis could have done more interviews, I feel confident that the participant observations and rich and various background material have provided me with sufficient data to review and analyze the newsroom life in Faktisk Verifiserbar in a rigorous way.

When it comes to the interviews, it would probably have been helpful to have an even more strict and organized set of questions to follow. However, it's worth mentioning that the way I conducted the interviews at the beginning of my research project aligns with the main goals of this thesis. It allows for a clear focus on the research while also allowing some room for trying out new things and exploring different aspects during the research period.

4. Empirical Background

To understand the findings and analysis presented in the thesis, it might be useful to pay attention to the background information provided in this chapter. The chapter begins by introducing The Faktisk Foundation, The Norwegian fact-checking organization that has served as the administrative and editorial hub for the Faktisk Verifiserbar newsroom in 2022 and 2023.

To gain an understanding of Faktisk Verifiserbar, it is crucial to explore the role of the Faktisk Foundation, as this media organization serves as a key to further examining the organizational dynamics and cultural heritage of the newsroom. I then present a brief overview of the disinformation landscape, including a scholarly distinction between the expression's disinformation, misinformation, propaganda, and fake news. Furthermore, the chapter also offers a wider exploration of Russian disinformation strategies within the context of the Ukrainian conflict. The chapter also includes a mapping of some of the recent international research on verification and fact-checking journalism. Additionally, a brief introduction to Open-Source Journalism (OSINT) is presented, which has significantly influenced the work practices and news culture within Faktisk Verifiserbar. Serving as a launching pad for the analytical and empirical chapter, the background chapter sets the stage for a further examination of the Faktisk Verifiserbar newsroom.

4.1. Faktisk.no: A Historical Norwegian Media Partnership

Faktisk.no is a Norwegian fact-checking organization that was founded in 2017 as a collaboration between some of the largest Norwegian news organizations, VG, NRK, TV2, and Dagbladet. The media companies Polaris Media and Amedia joined the partnership one year later, in 2018.

The Faktisk Foundation was the first collaborative fact-checking initiative in a Norwegian context and has played an important role in shaping the operational framework and guiding principles of the Faktisk Verifiserbar newsroom (Libell, 2019; Schau-Liberg, 2018). Giving insight into the cultural and organizational heritage associated with the Faktisk Foundation also provides valuable insights into the journalistic traditions that have shaped Verifiserbar's identity and furthermore approach to verification practices.

The aim of Faktisk.no has been to increase public trust in media by combating disinformation and misinformation. The foundation launched an independent online news site in July 2017. However, what has truly amplified its impact and reach over the years is the spread of stories across various online Norwegian news platforms. The project's main funding comes from different media partners and a row of Norwegian non-profit foundations supporting critical and investigative journalism. These are Fritt Ord, STUP, and Redaktørforeningen. The organization's daily work is carried out by a team of experienced journalists who specialize in fact-checking and verification. Kristoffer Egeberg is the current chief editor of Faktisk.no.

When it was launched back in 2017, Faktisk.no represented a significant paradigm shift within Norwegian newsrooms, as it introduced a groundbreaking collaborative approach among journalists that were previously uncommon in Norway. A few weeks into their existence in 2017 the Faktisk-journalists were shocked to learn the enormous widespread of so-called trolling accounts in the Norwegian social media environment designed to spread fake news. Scrambling social media platforms like Facebook they discovered numerous fake news accounts with up to ten times higher traction per post than stories from mainstream media publishers like VG. Faktisk.no is now considered one of the leading fact-checking communities in Europe, known for bringing competitive media actors and journalists together. In 2023 the organization describes itself as a small media company. Faktisk.no is part of the International Fact-Checking Network (IFCN) established in 2015 and run by The Poynter Institute, an American nonprofit organization for independent, investigative journalism (Poynter, 2023).

4.1.1. The Public and Trust in News Media

For the last decade, the Nordic countries, including Norway, Denmark, Sweden, and Finland, have emerged as populations where the public has a significant degree of trust in news (Newman, 2021, 2022). Simultaneously, many countries worldwide have witnessed an erosion of public trust in news media for the last two decades. The newest edition of the Reuters Digital News Report (2022) sheds light on this matter, revealing that 56 percent of respondents in Norway express a general level of trust in news. More than 40 percent of participants indicated their belief that the media operates independently of direct political and governmental influence and that Norwegian news media reports without being directly influenced by political and commercial interests. Despite an already high level of trust in the media, Faktisk.no has played a significant role in reinforcing and strengthening this trust, positioning

itself as a crucial cornerstone within the Norwegian media landscape. By upholding rigorous fact-checking standards and providing reliable information to the public, Faktisk.no has earned a reputation as a trusted source of news and a very important contributor to the overall credibility of the media ecosystem in Norway.

4.2. Open-Source Intelligence (OSINT) in Journalism

OSINT stands for Open-Source Intelligence and refers to information that is publicly available to everyone through legal means (Næss, 2023). The purpose of OSINT is that anyone can contribute to investigations that uncover wrongdoing and hold perpetrators of crimes and atrocities accountable (Fiorella, 2021; Næss, 2023). Since the American presidential election in 2016, OSINT has been a rapidly growing field in contemporary journalism practices. The approach can be particularly useful in areas where traditional sources of information are limited or where access is restricted (Higgins, 2021; Yeboah-Ofori & Brimicombe, 2018). At its best OSINT has the potential to offer a new level of transparency and accountability to news reporting and is considered by many journalists to be a powerful tool to uncover hidden truths and shed new light on critical global events, like for example the ongoing war in Ukraine.

A great inspiration for the Faktisk Verifiserbar approach to verification has been the Bellingcat methodology (Bellingcat, 2022; Higgins, 2021), an idealistic foundation that in recent years has gained global recognition for its pioneering work in OSINT journalism. The Bellingcat Foundation has established a set of best practices that guide their investigations and ensure the integrity of their findings and was also a great inspiration for the Faktisk Foundation back in 2017 (Ballinger, 2023). The Bellingcat approach and the practices that go into their verification processes, such as source verification, geolocation, and collaborative investigations, have been widely adopted by the Faktisk Verifiserbar newsroom. Bellingcat has also been of great inspiration when it comes to the use of different digital tools, as they also offer various in-depth guides on how to use various digital tools for fact-checking.

4.3. Separating Disinformation from Propaganda and Fake News

The terms disinformation, misinformation, fake news, and propaganda, have in common that they describe information intended to disrupt democratic institutions and mislead and confuse the public (de Place Bak et al., 2021).

For simplifying purposes, this thesis uses the Norwegian Encyclopedia's definition saying that disinformation is information that is deliberately false and misleading. In broad terms, the word refers to the spread of information that is intentionally incorrect and where the purpose is to promote specific attitudes or in some way or another provoke particular reactions from the public (SNL, 2023).

Scholars across academic disciplines have also traced the word disinformation back to the Russian word, *dezinformatsiya*, referring to a phenomenon that became widespread during the Soviet era when the Russian government intendedly made false information campaigns to distract the public both domestically and internationally (Jackson, 2017). Disinformation is also linked to the word propaganda and there is an ongoing academic and political discussion on whether the two concepts overlap (Nimmo, 2015). The term fake news became widely known during the U.S. Presidential election in 2016 (Jackson, 2017; Tandoc et al., 2018). The term refers to stories that are fake but presented as trustworthy. Fake news is also used to describe online conspiracy theories, like the Pizza Gate conspiracy, which falsely accuses high-ranking officials, particularly in the Democratic Party were involved in a child sex trafficking ring operating out of the basement of a pizzeria in Washington.

4.3.1. The Narrative Battle Between Ukraine and Russia

The digital information war about Ukraine, started many years before the full invasion in February 2022(Nimmo, 2015). Since 2014 when Russia illegally annexed Crimea, an autonomous republic in southern Ukraine, Kremlin has tried to control the global narrative about the conflict (Khaldarova & Pantti, 2016). According to Russia, the historical and cultural connections between Russia and Ukraine make Ukraine part of the broader Russian world.

Drawing on a so-called strategic narrative from World War Two, Russia claims that the ongoing war in Ukraine is a fight against Nazis (Khaldarova & Pantti, 2016). According to Kremlin and Russian state-controlled media, a fascist-driven Ukrainian government stole its way to power in 2014 and has since forced the nation towards an alliance with the West (Suny, 2022). This poses a direct threat to Russia itself. In the same narrative Russian soldiers are dying to defend Russians and Russian-speaking Ukrainians from fascism, the same way their forefathers did during World War II.

Ben Nimmo is a UK-based analyst and writer on European security issues. He characterizes the Russian disinformation narrative as a classic bad guy and nice guy tale, in which Russia is the good guy and the US, NATO, and EU are the bad guys (Nimmo, 2015). This false narrative is adaptable and can be used to explain and defend a variety of scenarios, such as the illegal annexation of Crimea in 2014 or the 2016 attack on the missile defense systems of the United States.

According to journalists and editors Michael Weiss and Peter Pomerantsev, Russia's disinformation operations can also be understood as a deliberate weaponization of information (Pomerantsev & Weiss, 2014). The disinformation tactics have also been characterized as the four D's plan by the Kremlin government and include deliberate actions to dismiss, distort, distract, and dismay the information ecosystem. This can, for example, be to be dismissing critics, distorting factual accuracy, drawing attention away from central matters, and inducing a sense of distress or disillusionment in the public. During the war disinformation campaign have increased.

4.3.2. Disinformation Narratives in Relation to the War

A recent report from the Organization for Economic Cooperation and Development, OECD (Audrey, 2022) lists some of the most common Russian disinformation narratives about the war:

- The massacre of civilians in Bucha, Ukraine, during the first month of the war was staged.
- Ukraine staged the attack on the hospital in Mariupol on 9 March 2022.
- European universities are expelling Russian students.
- Ukraine is training child soldiers.
- The war in Ukraine is a hoax.
- Russia was not using cluster munitions during its military operation in Ukraine.
- NATO has a military base in Odessa.
- Modern Ukraine was entirely created by communist Russia.
- Crimea joined Russia legally.
- Nazism is rampant in Ukrainian politics and society, supported by Ukrainian authorities.

- Russian-speaking residents in Donbas have been subjected to genocide. (Audrey, 2022; Roache, 2023)

4.3.3. Disinformation and Fact-Checking in Journalism

Russia's illegal annexation of Crimea in 2014 led to an overall higher global awareness of digital disinformation. The crises have since been acknowledged as a key initiator of the increased focus on disinformation in the political discourse across European countries. In 2018 the European Commission made the first official request for an implementable disinformation defense policy partly as a result of the Russian-Ukrainian conflict (European Commision (EU), 2022). Also, the American Poynter Institute launched The International Fact-Checking Network (IFCN) the same year. The network quickly became recognized as a significant step forward in the global fight against the spread of false and misleading information (de Place Bak et al., 2021, p. 8). Over the past decade, the proliferation of advanced digital technologies and the widespread use of social media platforms have facilitated the production of a significant amount of disinformation by various actors, ranging from ordinary individuals to government officials.

In response to the surge in disinformation, there has been a parallel growth in initiatives aimed at fact-checking and verification. Notably, platforms such as the Norwegian fact-checking organization Faktisk.no have emerged as significant players in countering the spread of false information, with a clear gold to uphold the integrity of information and foster critical thinking among audiences.

5. Ethnographic Recordings Inside The Verifiserbar Newsroom

Verification practices in journalism can be defined as a search for information and sources that can help to verify or dismiss information in various forms, for example, pictures, videos, or other forms of media (Westlund et al., 2022, p. 217).

The following chapter introduces the Faktisk Verifiserbar newsroom as an empirical case, highlighting its role in the verification work that was done within the Norwegian media landscape in response to Russia's war against Ukraine in 2022. Drawing on inspiration from STS studies of scientific practices in the laboratories in the 1980s and 1990s, the chapter explores the newsroom as an ethnographic site (Latour & Woolgar, 1986).

Like Latour and other STS researchers in the laboratories, a crucial part of my research strategy has been to observe the newsroom practices in Faktisk Verifiserbar and follow the journalist's work as closely as possible, while still remaining an outside, inside observer (Latour & Woolgar, 1986, p. 12). This chapter takes a closer look at the Verifiserbar newsroom, using an ethnographic writing style, participant field observations, and visual documentation as a backdrop. It aims to introduce the physical space of the newsroom as an important factor in understanding its role and operations. The chapter begins with a detailed account of my firsthand experience in the newsroom during November and December 2022, providing insights into the history of Faktisk.no as a media organization. It then delves further into how the Verifiserbar newsroom came into existence in April 2022, highlighting the key factors and events that led to its formation.

Figure 1: Human and non-human actors inside the Faktisk Verifiserbar newsroom in November and December 2022. All Photos: Ingunn Andersen

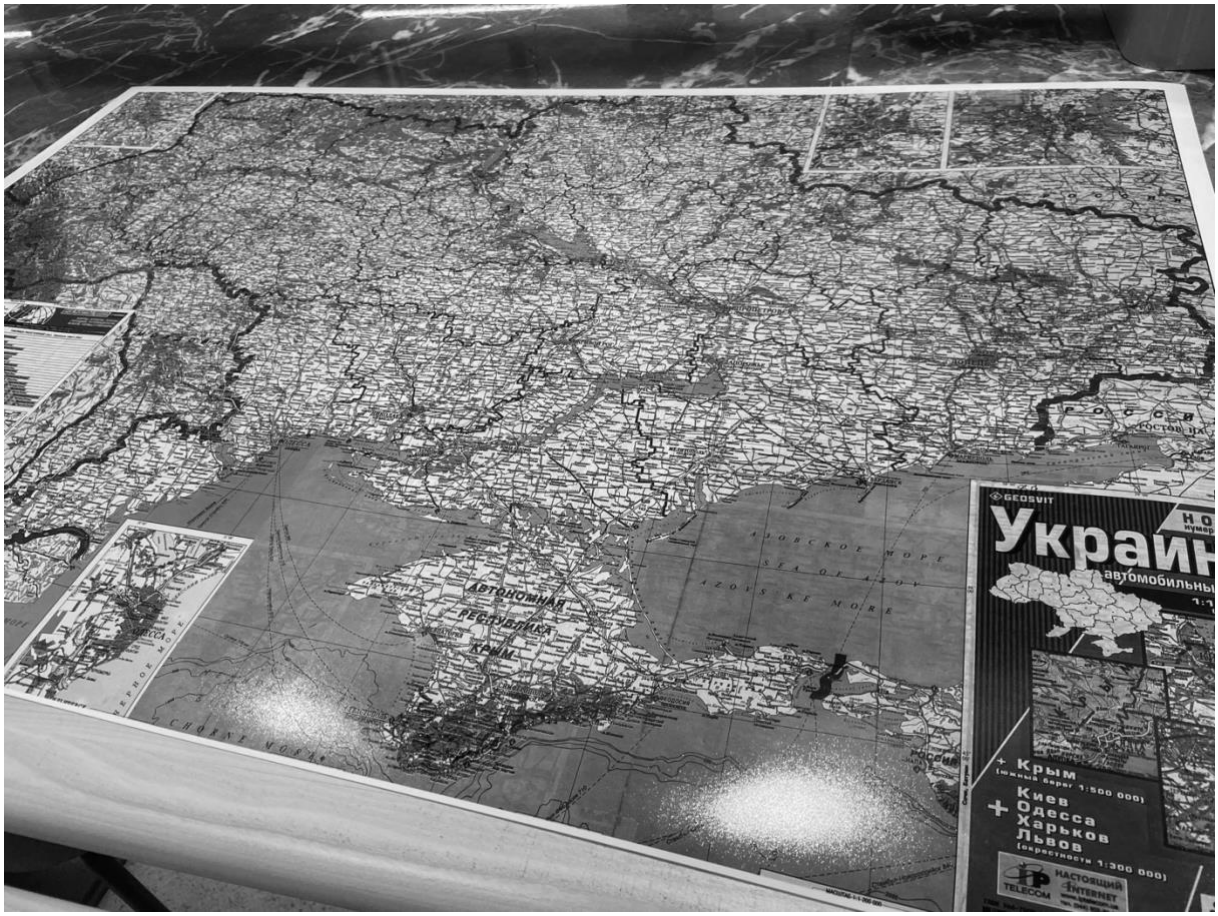


Figure 2 A map showing Ukraine placed at the bar desk in the Verifiserbar newsroom, November 2022. Photo: Ingunn Andersen

Boks 1: DAY 5. Pressens Hus, Oslo. 1. December 2022: HAPPY BIRTHDAY Faktisk.no!

It's still dark outside the windows of Pressens Hus in Skippergata on this very first morning in December. A diverse group of media leaders and journalists have gathered in a conference and cafeteria room named *Ytring* for a breakfast meeting. After five years of existence, the occasion is a celebration of the Faktisk.no media-organization. Because it's now three weeks until Christmas, gingerbread and the Norwegian hot drink phenomenon known as "Gløgg" is served alongside more traditional cheese sandwiches and black coffee. Standing in high heels at the front stage, is Helje Solberg, news director at The Norwegian Broadcasting Company, NRK, and board director of the Faktisk.no Foundation.

She starts her speech by reminding the audience of how Faktisk.no was launched during the summer of 2017 and underlines how it quickly became one of Norway's most popular news sites. Solberg notes that as of the end of 2022, the fact-checking program has achieved a great distinction on both a national and global scale. She also makes it clear that the project is notable for being one of the rare instances in which Norwegian media outlets have made coordinated attempts to promote collaborative journalism.

She then rewinds the scene to 2016, when the idea of a Norwegian fact-checking was born.

"2016 was the year when Fake News went viral. Donald Trump was elected president. We had Brexit and the brutal civil war in Syria had lasted for almost six years without any signs of ending. We were shaken by the Pizza Gate* and learned that Fake News spreads faster than the truth. This was the year that post-truth was named Word of the Year by the Oxford Dictionaries".

Solberg concludes her speech by saying that she is proud to be a part of the Faktisk-family.

"It is an inspiration for me to work with people that go to such lengths to fight back against disinformation and propaganda, one of the biggest threats, maybe the biggest, against press freedom and democracy. Not only are facts under attack, but a lot of resources are spent on pumping false narratives into our information and media landscape".

5.1. How the Faktisk Verifiserbar Newsroom Was Created

The celebration of Faktisk.no took place only a few days into my observation of the newsroom in early December 2022. In many ways, the scene serves as an insight into the significance of Faktisk.no in the Norwegian media landscape. Helje Solberg's speech to the Faktisk-audience also underlines the medias growing concerns about disinformation and fake news after the war in 2022. She is also emphasizing how important it is for the media to stay alert to the changing information landscape. According to Solberg, the quick establishment of the Faktisk Verifiserbar newsroom can be attributed to the groundwork laid by the Faktisk Foundation. When the war started the fact-checking organization served as a catalyst for the discussions about disinformation, which again inspired the inception of Faktisk Verifiserbar.

5.1.1. Presenting A Bold Idea About Verification

The idea of a collaboration started a few weeks after the war, on March 10th, 2022. This morning Pressens Hus had invited editors Espen Olsen Langfeldt from NRK, chief editor Kristoffer Egeberg from Faktisk.no, and news director Sarah Sørheim from NTB to an early morning-panel discussion about the demanding digital information ecosystem following Russia's invasion of Ukraine in February (Henriksen, 2022). At the mainstage in Pressens Hus, the three media executives discussed the challenging procedures for confirming information from the war zone. At one point in the conversation, it became clear that each of the newsrooms was performing more or less the same task devoting a significant number of resources to the same verification processes. As a possible solution, Langfeldt proposed a verification hub with an open-access architecture available for all Norwegian news publications.

One month later, in April 2022, the annual investigative journalist conference, SKUP took place in Tønsberg, Norway. The first concept for the partnership in Faktisk Verifiserbar was announced as a historical verification project with a specific focus on the war in Ukraine at a press conference at SKUP (Simonsen, 2022). The project's first goal was to address the urgent need for Norwegian media to verify videos and images from the war in Ukraine. As a secondary goal, the project aimed to build more expertise and digital skills in verification among journalists from a variety of newsrooms.

NRK, TV2, VG, Aftenposten, Dagbladet, NTB, and the Norwegian military publication Forsvarets Forum were the first official partners of the Verifiserbar-project. It was also decided to place the project directly under the fact-checking organization Faktisk. no. Kristoffer

Egeberg, the chief editor of the Faktisk Foundation stepped into the role of project leader. Recognizing the significance of the project, non-profit press organizations like Fritt Ord, STUP, and Redaktørforeningen also offered to provide important financial support. The project found its physical home in an unexpected location, a repurposed bar, made possible through the collaboration of Pressens Hus and property owner Aspelin Ramm.

The next section will explain how this unlikely setting gave rise to the name Faktisk Verifiserbar.

5.2. A Bar Transformed Into a Newsroom

Dating back to the 18th century, the two brick buildings now housing Pressens Hus in downtown Oslo in Skippergata 24, were transformed into modern office facilities in 2020 and 2021. A yellow letter sign formed as an italicized P marks the entrance of the building. After the full renovation process, the historical houses now function as office spaces for eleven different media organizations in Norway, including the fact-checking organization Faktisk.no.

The Verifiserbar newsroom is not designed as a newsroom. The space, facing Skippergata with large welcoming windows was planned as a coffee shop by day and a bar by night. Following restrictions and lockdowns caused by the Covid 19-pandemic, the restaurant had to close down after a short period. When the owner of the original buildings, the property developer Aspelin Ramm, heard of the new verification project that was launched at the SKUP conference, they offered the project the bar space for free on a temporary basis. In Norwegian, the word "Verifiserbar" can be read with a double meaning. It is a plausible name for a bar or restaurant, because of the bar ending of the word, but the word also translates directly into "verification" or "something that can be verified". Thus, Faktisk Verifiserbar seemed like the perfect name for the new newsroom. The first journalists moved into Pressens Hus during and after easter in April 2022. The following passage is the written record of my first day of participant observation with the newsroom in November 2022. The ethnographic recordings are an introduction to how the journalists in the project work and present themselves. The scene is set on my first morning of observations in the Verifiserbar newsroom in Skippergata 24. A TV team from the NRK documentary "Brennpunkt" is about to film the Faktisk-team's morning briefing. I come into the room as the meeting begins.

Boks 2: DAY 1. Pressens Hus. Oslo, 22. November 2022. WAR ON TRUTH

The space where Faktisk Verifiserbar is located holds a bar desk that is significantly long. Because of the large windows facing the busy street of Skippergata, the dimmed, blurry light typical for daytime Oslo in November, and the occasional sound of the tram passing outside gives the room a vibrant feeling. The Verifiserbar newsroom is extra lit up this morning. A documentary team from the NRK program "Brennpunkt" is making a film about Russia's war against Ukraine and has set up large lamps at the left end of the room from the main entrance. Kristoffer Egeberg, chief editor of Faktisk.no is present to teams' morning meeting, answering questions on cue. Standing next to Egeberg by a provisory table, journalist, and researcher in Faktisk Verifiserbar, Jan-Gunnar Furuly is serving chocolate from a box while he is pointing towards a large TV. Furuly then present a case of satellite images from the Russian border. While Furuly is pointing, Kristoffer Egeberg comments on the pictures. "This story was quoted worldwide". Still pointing at the TV, Jan Gunnar Furuly explains that the Russian planes appearing in the picture are the world's largest strategic jet bombers.

I later learn that the planes are called Tupolev-160 and a crucial part of the Russian military defense system. Then, with a click on his computer, Furuly changes the picture on the TV. Now the screen shows a navy base in Russia. "This is situated only hundred kilometers from the Norwegian border. The boats, that can carry nuclear missiles, are central in Putin's nuclear defense plan", says Furuly. Without being too dramatic Egeberg and Furuly paint a grim picture of the ongoing war. "The new era of the Cold War is already here. This is not something that is just going to pass", says Egeberg.

He also explains that the north-Russian border is of special interest to Faktisk Verifiserbar since this border is crucial to NATO and NATO allies. The documentary team asks Egeberg how much disinformation the war has generated. Egeberg replies that the amount is overwhelming. "But it is almost impossible to say what exactly is disinformation. Some of the information is real information, but with a fake context", he says. "The first victim in war is the truth. All parts of the war are interested in presenting their version of the truth", explains Furuly.

5.2.1. Surroundings: Exploring Interactions Between Physical Spaces and Humans

During my second day of observation at Faktisk Verifiserbar above, I had the opportunity to take note of the physical environment we were situated in. The ethnographical recording captures the physical space of the Faktisk Verifiserbar newsroom. The spatial elements, along with the dimmed light and occasional tram sounds, contribute to the vibrant atmosphere of the room. At the same time, the presence of a documentary team from NRK introduced a new participant to the network. As they arranged lamps and readied their cameras, the documentary team also engaged in discussions with the journalists during the meeting. One of the first things I recorded in my field notebook during the first week of observation was the amount of free space in the newsroom. In many ways, the room was almost too big for the small team of journalists present at the time. During the first week, I didn't register more than six or seven people in the room at the same time, including myself. One day we were only three. Taking into account the size of the room, I figured there would have been enough space for at least ten more journalists.

A few hours into observation on the first day, I learned that the journalists were supposed to move to a smaller location the following week. This in many ways corresponded with my feeling of *temporality* in the newsroom. Nothing really felt permanent or settled. Even the coffee machine in the room seemed provisory, set up on a random restaurant table close to the long bar disk. The journalists all had personal laptops and used docking stations to launch their computers onto second and third, bigger screens. Despite the amount of space in the bar room, I noticed that some reporters still preferred to sit in the same places. At the bar desk, my attention was drawn to the presence of a printed and laminated document that detailed the various work practices adopted within Faktisk Verifiserbar. This document, serving as a guide, provided valuable insights into the operational procedures and protocols in the newsroom. The bar itself held a sizable, laminated map of Ukraine. This map probably served as a visual aid, offering a geographical reference point for the journalists in the initial phase of the project.

Despite the room being quite spacious, privacy was somewhat limited within the work environment. The majority of computer screens were positioned in a way that made them visible to anyone passing by. This setup created an open and amiable atmosphere where colleagues could easily interact. The surroundings were surprisingly tranquil, with only the occasional blending of street sounds blending in. Occasionally, colleagues situated a few meters apart would engage in soft-spoken conversations across the bar area, seeking

clarifications or discussing the details of a story they were investigating. The focus was on concentrated work and many of the journalists were wearing sound-reducing headphones or air plugs to minimize distractions.

Figure 3: Journalists portrayed in the second newsroom location in Faktisk Verifiserbar in December 2022. The room is a much smaller space than the bar room. Photo: Ingunn Andersen

6. Unboxing Newsroom Practices In Faktisk Verifserbar

This chapter aims to unbox the Faktisk Verifiserbar newsroom, with a focus on sorting out the practices and actor networks within the newsroom. The informants are cited by their last name, see Table 1: List of informants from Faktisk Verifiserbar in the Methodology and Research Approach chapter.

> "There is no war in the world that has been documented with such extensive coverage on social media as this conflict. Handheld cameras, drone footage, recordings capturing the release of weapons from drones, and even videos capturing the moment those weapons hit their target. Even attack drones are equipped with cameras positioned in their noses, continuously filming until they explode" (Furuly).

During the initial phases of Russia's war against Ukraine in February and March 2022, the journalists involved in the verification processes at NRK, the Norwegian Public Broadcaster, encountered a significant challenge.

Their main focus at the beginning of the war was first and foremost on the rapid verification of pictures and videos, driven by the demand for breaking news, rather than on documenting each step of the process. Confronted with the overwhelming volume of images and videos that were emerging on the internet, the journalists soon came to the realization that their existing verification systems weren't prepared to effectively document the extensive efforts involved in tracing and possibly authenticating information originating from the warzone. The amount of visual content that was constantly published online meant that they needed a more robust and efficient approach to capture, analyze, and trace the verification processes. It became obvious that the existing systems were unable to keep pace with the demanding task of cataloging and archiving the work that was required to validate the information. As a result, there was an urgent need to develop a more understandable and streamlined system to document and track the intricate process of verification activities, to ensure that every step taken in the process was recorded and accounted for.

As with the rest of the thesis, the exploration in this chapter is guided by my two research questions: 1. How do journalists use technology? And 2. What is the relationship between

journalists and technology? To explore these questions, this part of the research draws on the theoretical framework presented in chapter two. Applying the theoretical framework to the newsroom context, allows us to gain insight into the web of relationships and dependencies that goes into verification processes in journalism. It also allows us to examine technology's role in mediating these relationships. The chapter examines how journalists inside Faktisk Verifiserbar use a range of different technologies, including social media platforms, satellite tools, and digital maps to trace and verify pictures and videos from the warzone in Ukraine.

6.1. Chapter Structure

The chapter starts with an empirical example drawn from NRK's news coverage during the initial week of the war in February 2022. The verification process that played out during this specific news coverage has since had a significant role in shaping the overarching newsroom practices adopted within the Faktisk Verifiserbar newsroom. The chapter then makes an attempt to identify different actors and actions inside the newsroom: What and who are the human and non-humans involved in the verification processes? I try to use ANT perspectives and describe the weaving processes inside the newsroom are achieved. Where do the different threads that go into verification come from and where do they meet? How is their character? What do they include and exclude? How can we describe the translation process inside the Faktisk Verifiserbar newsroom?

In other words, the analysis seeks to describe the web of human and non-human entities inside the newsroom space. This chapter also gives insight into the translation processes that go on when journalists and technologies unfold inside the newsroom.

6.2. The Zelenskyj Video from Kiev

Martin Gundersen, a journalist, and computer engineer in NRK Beta, the Norwegian public broadcaster’s journalistic division for innovation and technology, has played an influential role in shaping the first verification practices of Faktisk Verifiserbar. Leading up to the discussion at Pressens Hus in March 2022 where NRK editor Espen Olsen Langfeldt proposed a Norwegian verification collaboration, journalists in multiple newsrooms had already begun to recognize the need for a more structured approach to verification (Henriksen, 2022). The following passages describe how Gundersen practiced a variety of internet technologies to verify information in a video released by the Ukrainian Presidential Press Service just two

days after the Russian invasion. His methods and results served as an inspiration for further visual verification work in the Faktisk Verifserbar newsroom.

6.2.1. Video Background and Context

In the days immediately after the invasion on February 24th, 2022, Gundersen was asked to join an ambulant team of data journalists and researchers from different parts of NRK. He relocated from his office in NRK Beta to the heart of the newsroom at NRK's main offices at Marienlyst in Oslo to assist colleagues with the verification of images and videos from the warzone. Shortly after he left the newsroom on Friday the 25th in the afternoon, Gundersen got a call from a colleague about a new and potentially startling video allegedly published by Ukrainian authorities on social media. The video showed what appeared to be the Ukrainian president, Volodymyr Zelenskyj, surrounded by four of his closest staff members (VG, 2022). Speaking directly to the camera in Ukrainian, the president's message was that he had no intentions of leaving his country. Seen in retrospect, the now symbolic video offered a change in the initial war narrative.

During the initial week of the Russian invasion, news stories worldwide expressed concern over the apparent superiority of the Russian troops compared to the Ukrainian forces. Many Western nations, including Norway, were apprehensive that Vladimir Putin and Russia would seize the Ukrainian capital Kyiv within a matter of days or weeks felt (Harris et al., 2022; Karmanau et al., 2022). According to Martin Gundersen, the video message served as a strong declaration from the Ukrainian government:

> "The video has great symbolic value. The interesting thing about the video, and why it was important at the time, was that it was released on day two. On Friday, when the impression was that Ukraine was going to fall. The video made people wonder. Is it possible that things are about to turn? When Zelenskyj appears in the video, surrounded by his men under open skies, saying “We are still here”, it was received as a statement from Ukraine that they were prepared to defend their country” (Gundersen).

Figure 4: The picture shows the Ukrainian president and his staff members in the video that was released on February 26th, 2022. Photo: The Ukrainian Presidential Press Service. Distributed by NRK News and Faktisk Verifiserbar

During the initial week of the Russian invasion, the media placed significant importance on determining the whereabouts of Zelenskyj, the Ukrainian president. Following the release of the video news publications like The Washington Post and the Associated Press reported that the American government had offered President Zelenskyj a safe escape route out of the capital Kyiv when the war started, but that he refused to leave and had stated that "the fight is here" (Harris et al., 2022; Karmanau et al., 2022).

In this phase of the war, information about where Zelenskyj and other members of the Ukrainian government were holding office, was considered highly newsworthy and sought after by various news outlets. To address this task, Martin Gundersen, this time working remotely from his home office, was entrusted by NRK to analyze and verify the content of the Zelenskyj-video. His use of digital tools and verification approach would later serve as a blueprint and model for the methodology and mindset in the Faktisk Verifiserbar project.

6.2.2. Mapping Historical Buildings

To verify the information in the video Gundersen went through several analytical steps, many of which weren't obvious from the start. One of the first things he did was to consider the angle of the camera filming the president. When looking at how the camera moved and

the quality of the pictures, he figured it was likely that the video was filmed with a mobile phone and that the phone was held by President Zelenskyj himself. As a computer journalist specializing in internet technologies and digital tools, Gundersen's expertise includes a strong familiarity with Google infrastructures. When presented with the Zelenskyj video, he immediately focused on the surrounding buildings in the footage. Though he was aware that Kyiv was an old city with a rich history of architectural landmarks, he had limited background knowledge of the city's layout, which made it difficult to identify the buildings in the video. To narrow his search and possibly determine the location of the video, Gundersen decided to make use of Google's resources by searching for lists and images of the most known architectural buildings in Kyiv. He explains that he focused his investigation on the two buildings featured in the video, paying attention to the pillars on the left side, which he believed had a Greek or Latin influence, and the gothic features of the building on the right.

Based on his first observations of the features in the video, Gundersen thought that the men might be standing on a pedestrian street or in a somewhat secluded area.

> "You have an idea that there are two quite distinct buildings as it is unlikely there are several places in the world that will have exactly that type of building right next to each other, but I was not so local-known, that I could say, of course, this building, this place, but it could say something about how likely where this is filmed. My first idea was that it is probably in Kyiv because it was where Zelensky was just before the invasion and where he stayed. If he is in Ukraine, he is probably in Kyiv, he may be in other cities, but he is likely to be in Kyiv. It was also what some media wrote without specifying where in Kyiv" (Gundersen).

Using the standard Google Search engine, Gundersen then continued tracing the buildings, hoping he might find something to geolocate the president.

> "I used the Google search engine to search for architectural buildings just to find out if they could be one of the buildings we see. This is because Kyiv is an old city with a rich architectural history, and it is likely that there are some who have compiled lists with pictures and buildings. When I browsed through them, I didn't see any building

> that resembled it completely. So, I thought spending time on Google Maps would be just as good" (Gundersen).

Following a partly intuitive path, Gundersen went on to search Google Street View for pictures and landmarks in the Old Town area of Kyiv. By then he was almost certain that the president was filming himself in Kyiv, but some of the details still didn't match exactly with the buildings you could see in the video material.

> "What I did then was to broaden my search again. I went back to Twitter and Google and did more targeted searches on what the video was trying to show. I searched for variations of "the Zelenskyj video Kyiv" to see if others had written about a street or an area to get a more specific understanding" (Gundersen).

Through the broader search, Gundersen recalls that he found an article in the Belarusian opposition newspaper called Nexta, saying that the president was filming himself in Bankova Street in Kyiv.

> "It didn't mean much to me at first, but Bankova Street is a bit like Karl Johan in Oslo, just a little smaller. The president's residence is located there. The Gothic building and the building with the columns is his offices. The office of the President of Ukraine. So, with that as a starting point, I could verify it by going into street view myself. By selecting the same point on the map in Bankova Street, I could drop a pin and get the same camera angle in Google Street View as he had. It was almost as if Google Street View was a few meters away from where he was standing and filming. And then you can see that the office is to the left and the residence is to the right" (Gundersen).

Since it took time to confirm its authenticity, NRK only published a brief story on their digital platform about the Zelenskyj video. Nevertheless, Martin Gundersen still refers to the video case from Kyiv as an example of how creative thinking and digital verification tools can be used in combination. When I asked during our interview, if he had doubts about the authenticity of the video, Gundersen answered that the timing of the publication and the quality of the pictures made it difficult to believe that it was fake in the first place:

> "We eventually discovered that this is Bankova Street and that the video was shot in the evening. There is no sun visible, so it is difficult to determine the exact time, but based on the overall look of the clip, it is more likely to have been filmed on a Friday evening than on Thursday or earlier. I was never really in doubt that the video was real" (Gundersen).

6.3. Workflow: Building Cyberinfrastructures for Verification Journalism

This section partly draws on the work of STS researcher Susan Leigh Star (e.g., Star, 2016) to describe the digital infrastructure in Faktisk Verifiserbar and the journalist's daily workflow. Star and other central researchers within the field of STS have emphasized the importance of studying *boring things*, saying that the material and organizational, non-human structures might enable specific work practices (e.g., Latour & Woolgar, 1986; Law, 2007; Star, 2016).

More specifically, the chapter provides a detailed account of the digital verification system that was put in place to facilitate the registration, categorization, and sharing of verification documentation processes in the Faktisk Verifiserbar newsroom. This system not only allowed journalists to work collaboratively and in real-time but also enabled the project to maintain a complete record of its own verification activities.

By documenting the structures and processes of the cyberinfrastructure in the Faktisk Verifiserbar-project, this chapter will hopefully contribute to a deeper understanding of how systematic and creative use of technology in media practices can support and strengthen the work of verification journalists.

6.3.1. Building a Digital Verification Structure

In the early phase of the Verifiserbar project at Pressens Hus in April 2022, journalists and IT engineers Martin Gundersen and Ruben Solvang from NRK were given the responsibility to create a sustainable workflow system for the new verification hub. As we have come to learn, the Verifiserbar project was designed to serve as a collaborative hub, providing a shared space and newsroom for journalists from various news outlets in Norway, such as NRK, TV2, VG, Aftenposten, Dagbladet, NTB, and Forsvarets Forum. From his time working with war coverage in NRK, Solvang had been bothered by the verification system, which consisted of a plain document with only two tables: One detailing the NRK video desk's requirements for the content, and a second table outlining the verification team, including Solvang, tasks. As a

result of this simplified system, a significant amount of communication between the verification team and other journalists was expressed verbally. According to Solvang, this meant that there was almost no real documentation of what the verification team had actually done with the information and media content. When setting up the future practices of verification in Faktisk Verifiserbar, Solvang wanted to make the verification work both more visible and more shareable. He was also concerned that the verification reports had to reflect the actual amount of work that went into each of the verification processes. When it comes to understanding the role of digital tools in the workplace, Star and Ruhleder (1996) argue against the use of metaphors that portray infrastructures as background systems, such as for example railroad tracks. According to them, infrastructure is a relational concept with the potential to significantly shape work practices (Star & Ruhleder, 1996, p. 113). This perspective challenges the notion that digital tools function as passive and unnoticeable elements within a work environment. Solvang and his colleagues in Verifserbar in many ways exemplify the transformative power of digital infrastructures. They used schematic spreadsheets and recipes as a safety net. With time, rigorous practices ensured that the journalists followed established templates and thus avoided taking shortcuts that could compromise the quality of their verifications. Solvang and Gundersen were inspired by various verification lectures at the SKUP-conference, an annual journalist event in Tønsberg arranged by the Norwegian Foundation for a Critical and Investigative Press. When they started systematizing the workflow in Verifserbar, they copied some of the best practices from fact-checkers from The New York Times, Aftenposten, Bellingcat, and the Centre for Information Resilience.

Based on his experience with Word and Excel, Solvang then decided to build the system using a Google Infrastructure. The registration system was based on a large spreadsheet in Google Sheets, a system Solvang himself refers to as a *Multiplayer Excel program*. He also calls it a setup that is both easy to use and also easy to share when used for verification purposes.

The predefined formatting of the Google spreadsheet also enables a more seamless transformation of the verification processes.

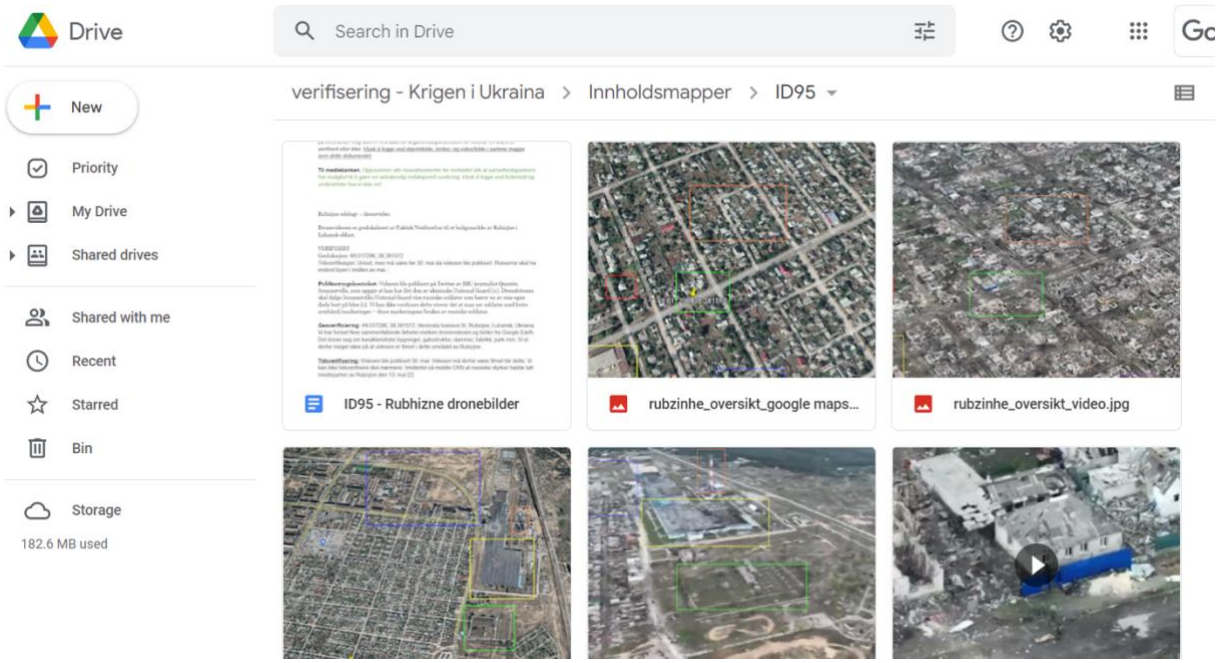


Figure 5: Screenshot of the Google Drive used by the Faktisk Verifiserbar-team. Photo: Faktisk Verifiserbar

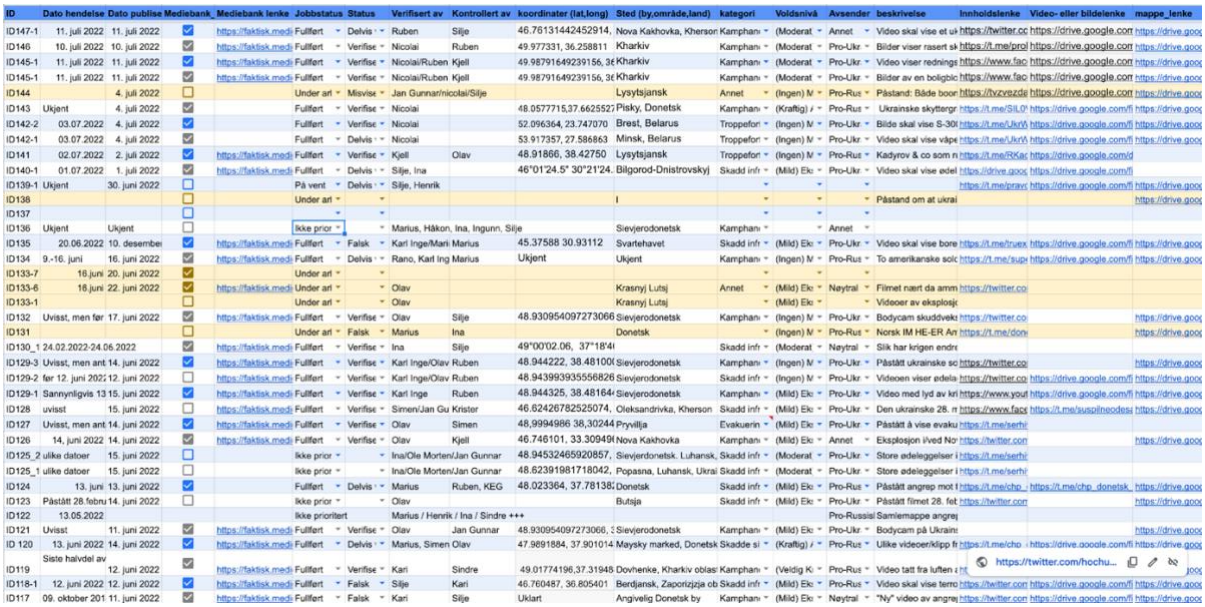


Figure 6: The spreadsheet provides an overview and structures for the journalists. It is also made for sharing. Photo: Faktisk Verifiserbar

6.3.2. The Verification Workflow

At the start of each verification process, the content, often a video or picture is logged in the Google spreadsheet. Each event is assigned a separate spreadsheet line and assigned its own ID-number.

If an event has multiple videos that need verification, the spreadsheet reflects this by assigning additional lines to the same event. For instance, if an event identified as ID100 is supported by two distinct videos that require analysis and reporting, the spreadsheet would indicate them as ID 100-1 and ID 100-2, signifying the two videos.

This tracing and categorization of events and their corresponding videos within the spreadsheet and folder system inside Google Drive ensure a thorough and organized verification process, which again enables the journalists to effectively manage and evaluate the information they are working with.

Solvang explains that each Information ID in the spreadsheet is used to connect the documentation related to a particular event with a corresponding folder. Looking at this notion through the lenses of Science and Technology Studies, STS, you might say that the ID and spreadsheet system in Faktisk Verifiserbar serves as a boundary object that establishes a clear link between the journalists, the piece of information, and the digital tools. (Doganova, 2009; Star & Griesemer, 1989). Liliana Doganova and Marie Eyquem-Renault study business models and their powers to circulate and transform narratives. As a digital document that is constantly updated, it's plausible to say that the digital spreadsheet in Faktisk Verifiserbar moves around the different actors in the newsroom. By keeping track of the verification processes the spreadsheet and folder system coordinates the actions in the newsroom.

Apart from facilitating effective sharing and organization of verification processes, the spreadsheet also functions as an efficient database for learning purposes, collaboration, and archiving. Journalist Ruben Solvang explains that the spreadsheet also is used to document metadata from the original content.

> “The ID is used to tie all the documentation around an event together in a folder, so it is important to have an ID that links the spreadsheet to the folder. If there are multiple videos, each event has at least one line in the spreadsheet, but if there are multiple videos, they each get their own line. On that line, we take note of metadata about when the story was published, which category it belongs to, who is working on the case, and who is fact-checking the case. Whether the event is verified, unverified, partially verified, etc.” (Solvang).

6.3.3. How Information Travels inside Faktisk Verifiserbar

> "Determining where a photo or video is taken is essential for the purpose of verification. Regardless of the content we had access to, we searched for the geocoordinates" (Furuly et al., 2023, p. 7).

In the first phase of the Verifiserbar-project in April 2022, the verification process typically began with a news desk reaching out for assistance, either through phone or email. Alternatively, one of the team's own journalists came across information on social media platforms that called for further investigation.

Once a case of verification emerges, the specific piece of information, often a picture or video, is assigned a unique ID number within the Google Drive sheet. This sheet then serves as the team's primary digital database, accessible to all of the journalists, including the chief editor of the Faktisk Foundation, Kristoffer Egeberg. The information, often a picture or a video, is systematically tagged and classified using predefined columns in the spreadsheet. Then a dedicated written document is created for each piece of information, wherein the journalists thoroughly record the tracing process in detail.

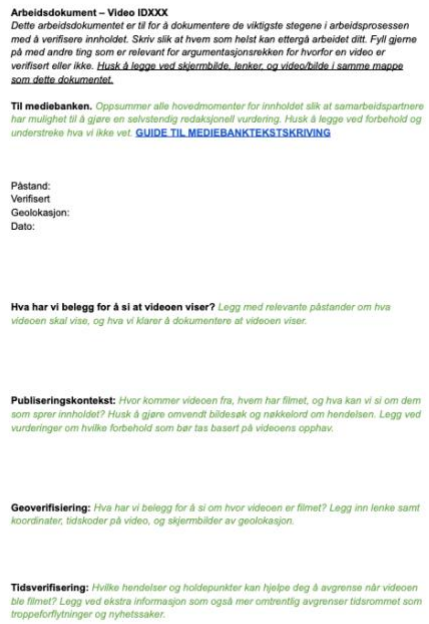
Following the completion of all tracing and verification steps, a second journalist reviews the document to ensure the accuracy of the process. Finally, if the information is considered accurate, the picture or video and an explanatory text are published in a media bank managed by the Norwegian news agency, NTB, and distributed to all media partners in Faktisk Verifiserbar:

> "The first part of the process is to take a screenshot and download the raw file. Once that's done, you can start filling in the line in the spreadsheet. There are many columns that you can't fill out initially, such as whether the information is false or not, and you may not have found the location yet. You fill out a description of the video and that you're working on the case, and you can also add a tentative publication date" (Solvang).

While the tracing process is logged in the main spreadsheet, the texts that ensure the publication is produced in the template document that is later added to the folder system in

Google Drive. This template is built to ensure that the verification process meets a certain standard, both in terms of quality, but also in terms of a certain standardization, according to Solvang.

The written document streamlines the process for the journalists, making it easier for them to collaborate and seamlessly hand over work between different shifts. The template document employed by the journalists in Faktisk Verifiserbar is a blueprint of the Bellingcat recipe for documentation.



Arbeidsdokument – Video IDXXX
Dette arbeidsdokumentet er til for å dokumentere de viktigste stegene i arbeidsprosessen med å verifisere innholdet. Skriv slik at hvem som helst kan ettergå arbeidet ditt. Fyll gjerne på med andre ting som er relevant for argumentasjonsrekken for hvorfor en video er verifisert eller ikke. Husk å legge ved skjermbilde, lenker, og video/bilde i samme mappe som dette dokumentet.

Til mediebanken. *Oppsummer alle hovedmomenter for innholdet slik at samarbeidspartnere har mulighet til å gjøre en selvstendig redaksjonell vurdering. Husk å legge ved forbehold og understreke hva vi ikke vet.* **GUIDE TIL MEDIEBANKTEKSTSKRIVING**

Påstand:
Verifisert
Geolokasjon:
Dato:

Hva har vi belegg for å si at videoen viser? *Legg med relevante påstander om hva videoen skal vise, og hva vi klarer å dokumentere at videoen viser.*

Publiseringskontekst: *Hvor kommer videoen fra, hvem har filmet, og hva kan vi si om dem som sprer innholdet? Husk å gjøre omvendt bildesøk og nøkkelord om hendelsen. Legg ved vurderinger om hvilke forbehold som bør tas basert på videoens opphav.*

Geoverifisiering: *Hva har vi belegg for å si om hvor videoen er filmet? Legg inn lenke samt koordinater, tidskoder på video, og skjermbilder av geolokasjon.*

Tidsverifisering: *Hvilke hendelser og holdepunkter kan hjelpe deg å avgrense når videoen ble filmet? Legg ved ekstra informasjon som også mer omtrentlig avgrenser tidsrommet som troppeforflytninger og nyhetssaker.*

Figure 7: The Template Document in Faktisk Verifiserbar shown in Norwegian. Screenshot: Faktisk Verifiserbar

The document is structured around four distinct verification steps:

- Context Verification
- Visual Verification,
- Geo Verification
- Time Verification.

The template also has a designated column wherein journalists can write text that has the potential to be published in a media bank. This is a digital platform administered by NTB that allows for a seamless sharing of verified information provided by the Faktisk Verifiserbar journalists.

By navigating war content, the journalists at Faktisk Verifiserbar continuously move around in a partly challenging and complex information environment. However, they have a valuable safety net in the form of a shareable, systematic infrastructure that makes the work more transparent. When engaging with the spreadsheet, the journalists must carefully record the extent of the verification they have achieved through their individual tracing processes. In the end, the content is classified into one of five pre-defined categories within the Google spreadsheet:

- Verified: Information that has undergone rigorous verification processes and is labeled accurate.
- False: Content that has been debunked and found incorrect.
- Misleading: Information that may possess elements of truth but is presented in a manner that manipulates its intended meaning.
- Partly verified: Content that has undergone initial verification efforts, yet additional corroboration is required.
- Not able to verify: Information that, despite efforts, cannot be definitively confirmed or disproven.

6.3.4. Valuation of Information

In this process of manual verification and a systematic classification of content in digital infrastructures, the journalists in Faktisk Verifiserbar use their own personal skills and knowledge to determine whether information can be labeled true or false. From an STS perspective, this can be read as actions, or practices that constantly transforms the information and in the end shape new realities.

6.4. Inscription Devices in the Newsroom

The last chapter has elaborated on how a detailed, shareable cyberinfrastructure based on an ID system in Google Drive and pre-defined template documents allows journalists with different skill sets and backgrounds to collaborate and work more seamlessly with digital verification processes. In the following sections, the thesis provides more detailed examples of how the journalists in Faktisk Verifiserbar use different forms of digital tools to trace and verify information.

As we have already learned in the theory chapter, Bruno Latour defines inscription devices as tools or apparatuses with *transformative abilities.* Latour's approach was to become part of the laboratory in question and follow the scientific work closely. The focus of the studies was often the routine work carried out by the scientists. (Latour & Woolgar, 1986, p. 27). In this thesis, the laboratory in question is the Faktisk Verifiserbar newsroom. The previous chapter described in detail how digital ID systems and advanced cyberinfrastructures control and coordinates the journalist's everyday workflow. The system in many ways functions as a boundary object, a digital infrastructure that allows for the journalists inside Faktisk Verifserbar to verify information in a systematic and rigorous way.

The next sections of the thesis are examples of how digital tools become inscription devices in the newsroom when they are woven into the journalist's verification practices.

Table 2: Digital tools at play in the Verifiserbar Newsroom. Source: Faktisk Verifiserbar

Verification Practice	**Digital Tools**
Reverse Image Search	Google Images, Google Lens, Yandex Images, Bing Images, TinEye
Facial Recognition	PimEyes, Search4Faces.com
Image Verification	ImgOps, inVID
Social Media Monitoring	Dataminr, Tweetdeck
Geolocation	Google Maps/Streetview, Yandex Maps/Streetview, Bing Maps, Apple Maps
Chrono location	NASA FIRMS, SunCalc, Yr.no, Weather.com
Satellite Imaging	NASA FIRMS, Planet.com, Google Earth Pro, Sentinel Hub Playground

6.4.1. Tracing Information with Social Media Tools

Rano Tahseen is a social media expert and journalist for TV2 in Bergen. She joined Faktisk Verifiserbar in April 2022 as one of the first external journalists after Ruben Solvang and Martin Gundersen from NRK. Because of her background, Tahseen explains that she was quickly given the task to trace content related to the war on social media platforms. To monitor different platforms, she used a digital subscription tool called Dataminr, a private technology platform that offers real-time insights into events and public data. With Dataminr, Tahseen was able to automatically analyze social media feeds, to detect breaking news, events, and trending content from the warzone.

The tool in many ways functions as a dashboard that allows journalists to create their own setup of stories or themes they wish to follow:

> "The nice thing about Dataminr is that it picks up when someone in the public witnesses something and writes a message about it on Twitter. Let´s say there was a shooting in Paris. People turn to social media to share images and videos. Then Dataminr can alert us that something is happening in Paris. We did the same with Ukraine, by choosing to limit the search to a geographic area in Ukraine, which meant that we received a notification every time something happened" (Tahseen).

In TV2, Tahseen normally covers breaking news. In Faktisk Verifiserbar she combined this experience with social media tracking. With the help of Dataminr and Tahseen's skills, the Verifiserbar-team traced videos and pictures from Ukraine on social media. The news alerts in the program often allowed them to be some of the first to detect breaking news:

> "If we suddenly saw that all the messages came from Kyiv or Lviv or from the same place, then we knew that there must be a reason why there are many messages from the same place. It gave us a basis for how we should start our day in Verifiserbar. We started by looking at the content to see if things were verifiable or not" (Tahseen).

6.4.2. Tracing Information with Satellite Images

From the start of the invasion, visual information provided by various international satellite services proved to be critical verification tools for journalists around the world (Browne et al., 2022).

Like Tahseen, Jan Gunnar Furuly from the Norwegian newspaper Aftenposten joined the Faktisk Verifserbar project as one of the first working journalists in April 2022. Furuly, a skilled investigative journalist with a broad data competence, soon started to observe a recurring pattern; Prominent global satellite companies consistently released images that held significant potential for digital verification and documentation of the war situation on the ground. During the first two months of the project, Furuly realized that more exclusive satellite access would help make the verification work in Faktisk Verifiserbar more rigorous. He was also convinced that a paid satellite deal would make it a lot easier for Verifiserbar journalists to provide more breaking news to their followers and digital subscribers.

In October 2022 Furuly with the help of colleagues, managed to close an exclusive deal for Verifiserbar-journalists with the private American satellite company, Planet Labs. Through the agreement, the Verifiserbar newsroom suddenly had access to a substantial collection of high-resolution satellite images, where each of the pixels in the image corresponded to a ground area of 0.5 meters.

Jan Gunnar Furuly and his colleagues in Faktisk Verifiserbar write in their 2023 report to SKUP, The Norwegian Foundation for Critical and Investigative Press, that the satellite deal gave them unique access to information from the ground both in Ukraine and Russia:

> "The agreement provided us with access to a vast archive of high-resolution satellite images, where each pixel in the image represented 0.5 meters on the ground. We had a monthly quota of 500 square kilometers of such images. Additionally, we had the capability to request Planet to capture new, up-to-date images of up to 10 geographic points each month. Placing such an order allowed us to obtain 25 square kilometers of imagery centered around the specified geocoordinates" (Furuly et al., 2023, p. 14).

Shortly after the satellite agreement, the team made international headlines when they used images to trace several Russian planes that had recently been moved closer to the Norwegian

border (Furuly & Persen, 2022). The images revealed the presence of 11 strategic bombers located 20 miles from Norway. To optimize the satellite agreement the Verifserbar-team interviewed a number of Norwegian military experts and did extensive manual research until they had created a spreadsheet containing a long list of strategic military locations in Russia, Belarus, and Ukraine.

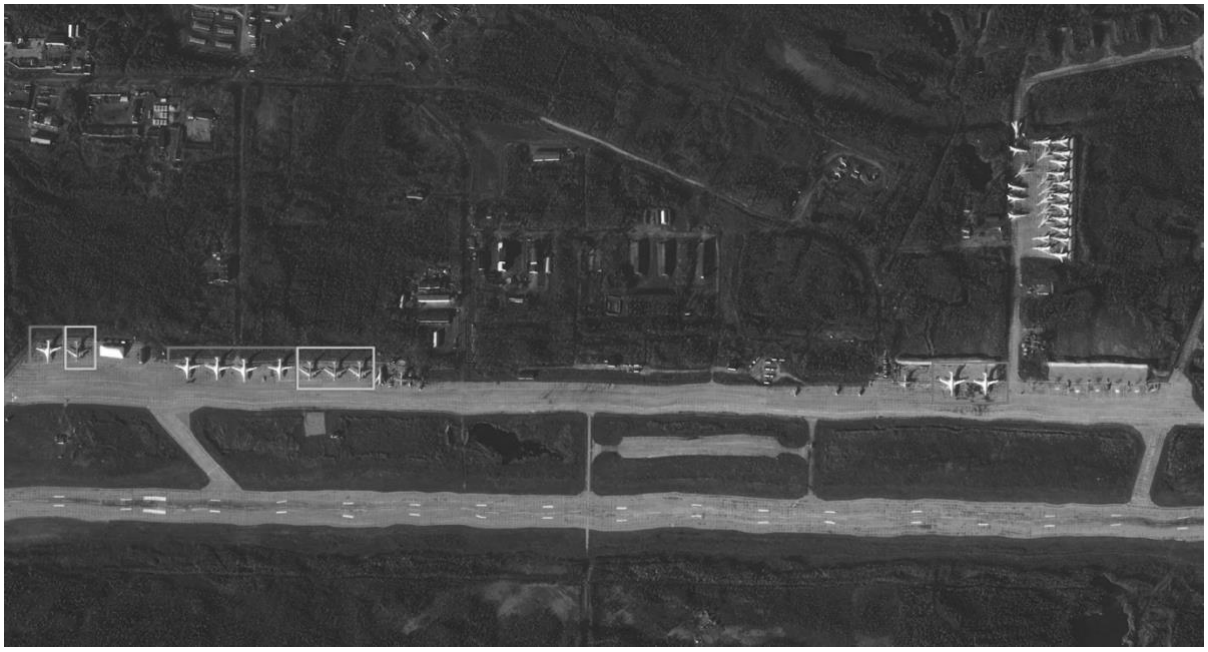


Figure 8: A satellite image taken on October 7th, 2022, shows seven strategic bombers of the Tu-160 type and four Tu-95 aircraft at the Olenya airbase on the Kola Peninsula. Photo: Planet Labs. Distributed by Faktisk Verifiserbar

To illustrate how important satellite information can be to verify information, Furuly provides a detailed example from the team's verification work in early December 2022. The case happened on a day when I as a researcher was present in the newsroom and could sense the hectic activity that occurred.

When the team in Faktisk Verifiserbar came to work on the morning of December 5th, there were news reports about a possible attack on the Engels Air Base, a strategic Russian military base, 720 kilometers southeast of Moscow. The base is home to a large number of strategic warplanes, more specifically the TU-95 and TU-160 models, according to Jan Gunnar Furuly. These bombers are considered critical components of Russia's air defense, and both plane types have the capability to be equipped with nuclear weapons (Furuly et al., 2023).

As a first step in the verification process, the Verifiserbar team tried to identify if the bombing was real by tracing two different videos that were already circulating on social media platforms like Telegram and Twitter. The videos showed what appeared to be residential blocks close to the Engels Airbase:

> "In one of the videos, a woman appeared in front of the camera, humming softly, while the recording took place in the middle of the night. Suddenly, a distinct whoosh, a high-pitched sound, was heard, followed by a tremendous lightning flash approximately 22 seconds later" (Furuly).

To determine the location of the camera during the recording, the journalists used Google Earth to identify the direction of the airport based on the positioning of the surrounding buildings. This methodology made the perspective presented in the video appear plausible. Furthermore, Furuly also conducted a time analysis by measuring the duration between the lightning flash and the subsequent sound:

> "It is important to note that the speed of sound varies depending on environmental conditions, ranging from 330 to 344 meters per second in different contexts. By employing a method of visual observation and temporal measurement, we engaged in the process of verifying the authenticity of the video footage" (Furuly).

After the initial verification work, Furuly and his colleagues used satellite services to trace if there were any physical damage to the airbase. On December 5th they were still unable to identify details on the ground. A day and a half later, on December 6th, more detailed satellite images started to emerge. Furuly describes this specific case as a technical patchwork where the journalists had to compare satellite footage from several different satellite services. In addition to Planet Labs, the team used a partly free satellite service called Sentinel Hub, an online platform that provides access to satellite imagery from the European Union's Copernicus program.

Figure 9: A damaged Tu-95 bomber aircraft at the Russian Engels Airbase, located 720 kilometers southeast of Moscow. Surrounding it are numerous personnel and what appears to be two fire trucks. Photo: Planet Labs. Distributed by Faktisk Verifiserbar

> "There were many that tweeted that the explosion had not caused any damage to the airport. But we were not sure. We had to wait for high-resolution images. So finally, quite early on the 6th, the picture came, which shows that there is a plane there and there is foam under the plane. And there is also a black hole, something that has hit the runway. We also knew that there were two similar planes here days before the explosion. This is a TU-95, a propeller-driven bomber. They are made to fly far out into the Atlantic" (Furuly).

According to Furuly, the Russian government tried to control the narrative about the planes by saying nothing had happened and that they had shot down the drones before they reached the airbase. For the Faktisk-team the satellite images became the final proof that something had actually happened at the Engels airbase (Furuly, 2022).

6.4.3. Bringing in Fire Maps: An Example of Tracing Explosions

A significant finding, while studying the work practices in Faktisk Verifiserbar, is that journalists very often use numerous digital technologies to gather enough evidence and possibly establish the authenticity of videos or pictures.

By combining different tools and methods, they aim to create as much evidence about an event as possible. As this thesis has already demonstrated journalists can employ a range of techniques such as image analysis, geolocation, and timestamp verification. One example shows how the Verifiserbar-journalists combined NASA's satellite network FIRMS with Google Earth. FIRMS, which monitors the entire planet for heat development and wildfires has been invaluable on numerous occasions to confirm or debunk claims made on social media in the context of the Ukraine conflict, according to the journalists in Faktisk Verifiserbar.

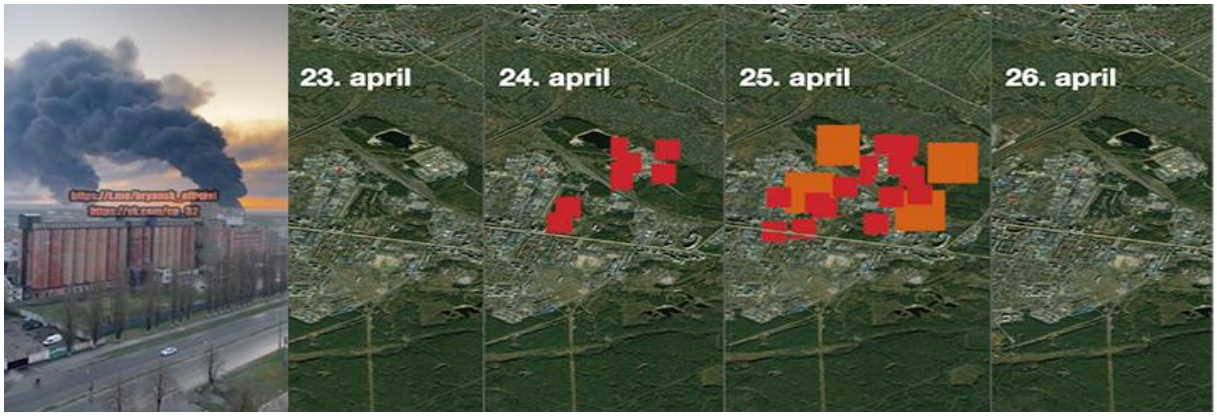


Figure 10: The two different digital tools NASA FIRMS and Google Earth are used in combination to trace what has happened on the ground. Screenshot: Faktisk Verifiserbar

The picture above is an example of how FIRMS and Google Earth can be used in verification work. The combined pictures with information from both Google Earth and NASA FIRMS show the heat development in the Russian city of Bryant over the course of four days in late April 2022.

According to Russian officials Ukraine claimed to have launched an attack on two fuel depots in the city(Sauer, 2022). The videos that were published from the event were dramatic, but the images were difficult to verify due to the dark. If the information was correct, this would be remarkable because it would have been the first Ukrainian counterattack on Russian soil during the war. By combining Google Earth with the FIRMS images, the journalists in Faktisk Verifiserbar were able to confirm the heat development close to the fuel depots. This again provided sufficient information to confirm the authenticity of the fires and videos before they could access images and videos taken in daylight.

6.4.4. Visual Effects in Verification: The Use of Colored Crutches

To visualize the verification processes the journalists in Faktisk Verifiserbar use so-called crutches, an OSINT methodology they have adapted from several international fact-checking initiatives, like the Bellingcat Foundation.

The process involves applying colored boxes to visual content. By incorporating various colored square markers, and so-called crutches, the journalists in Faktisk Verifiserbar identify important verification indicators within images and video. For instance, they can be used to measure the distance between two buildings or other relevant surroundings, as exemplified in the case of the Kyiv video mentioned at the start of this chapter. According to Ruben Solvang, the implementation of crutches enables journalists to establish connections between images captured from different angles, aiding in the verification process.

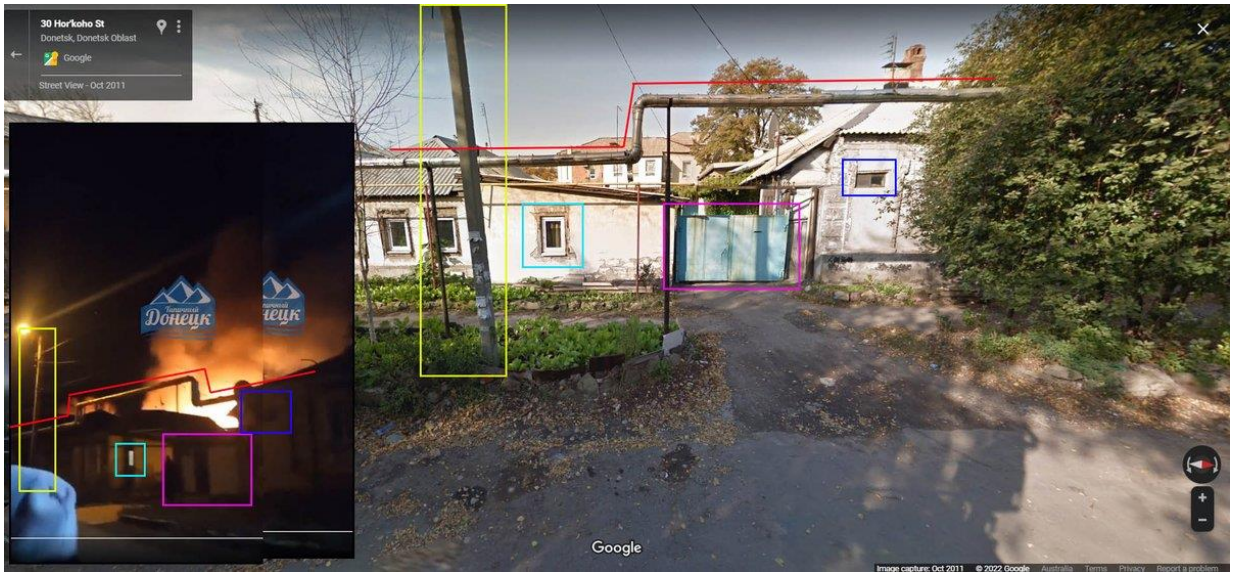


Figure 11: Different examples of how the Faktisk Verifiserbar team has used colored crutches to mark verification findings. Screenshots: Faktisk Verifiserbar

6.4.5. Three Phases of Verification Work

During the project period of Faktisk Verifiserbar in 2022 and 2023 the verification work went through three different phases all of which corresponded with the intensity of the war coverage. At the beginning of the project, from April to the summer of 2022, the Verifiserbar team experienced high pressure and a sense of constant breaking news with an overwhelming workload. When summer hit, the interest in the media for verification and the public's interest in the war was notably lower. The Faktisk Verifiserbar newsroom also became fewer

journalists during this period. Also, during the fall of 2022, the pace of verification practices became less intense. It was during this third and final phase that the Verifserbar-team also decided to redefine their goals and do more standalone news in addition to verification work. For example, many of the journalists started to produce news articles for the Faktisk. no-platform, instead of working with just spreadsheets and templates for the NTB media bank. One of the projects was called "The New Cold War" and discussed how the northern regions had become increasingly important to Putin after Russia's military failures in Ukraine:

> "We wanted the project to have a reason to live. We continued to serve tips, but we didn't have such a large daily production of snippets. There was no need or market for it" (Furuly).

6.4.6. Dependency on Technology

Even though she spends a lot of time in the digital sphere, tracing information on social media platforms, TV 2 journalist Rano Tahseen still considers a large amount of the verification work in Faktisk Verifiserbar to be manual labor. She emphasizes how digital content and the internet have made humans completely dependent on and connected to non-human actors like digital tracing tools. She uses the recent riots in Iran (Gritten, 2023) as an example of how dependent journalists are on technology and internet tools to conduct their work, especially when it comes to distant reporting:

> "We (TV 2) get so many complaints that we don't report on content from Iran and share videos and images, videos that obviously are from Iran, but because Iran has closed Google Street Views, which is part of the verification process for geolocation, it is not possible to find out if a picture or video is actually taken in Iran. It is a bit scary how dependent we are on technology to verify content" (Tahseen).

6.5. Balancing Human and Technological Inputs in News Verification

In this chapter I expand on some of the central findings related to research question number two, focusing on the role of both humans and technologies in the shaping of verification practices in the Faktisk Verifiserbar newsroom. As I observed and interviewed the journalists in the newsroom, and as my empirical findings in the previous chapters demonstrate, it soon became clear during my research that verification practices in modern newsrooms involve both human and non-human entities and actions. As I have already described in the previous

chapters, different journalists use different digital tools when they trace and verify information. This chapter examines how these diverse skills, perspectives, and goals of individual journalists contribute to an overall strengthening of the verification processes.

6.5.1. Building Robust Verification Practices: Embracing Diversity in the Newsroom

As the empirical examples already presented throughout the thesis have demonstrated, one key finding in the research is the personal approaches brought forth by each journalist participating in the Faktisk Verifiserbar-project. The studies reveal the significance of manual human efforts and the influence of personal experiences in the verification processes. The journalists also highlight that the Faktisk Verifiserbar newsroom from the beginning has encouraged an inclusive culture in which journalists actively participate in knowledge sharing, peer review, and constructive feedback processes. Journalist Jan Gunnar Furuly emphasizes that the constant diversity within the newsroom has been crucial for the success of the project and that some of the synergies disappeared when there were fewer journalists in the newsroom at the end of the project period. Effective and accurate verification work demands different skill sets. In addition to strong technological journalists, the verification team also needs people that have a strong visual eye. You will also need good storytellers that can translate geolocations and satellite images into readable news stories.

Depending on the different phases of the war, the group dynamics within the project changed:

> "We can't do this job alone. When we were 10-12 people working, there was a different synergy. In the team, you need someone with a visual eye. In the team, you need a storyteller. If you're just a technologist, you can't really convey the message ideally" (Furuly).

Journalist, Rano Tahseen also describes the importance of networks and collegiality, calling the Verifiserbar-project a unique exchange of journalistic expertise:

> "If it hadn't been for the colleagues I worked with, I wouldn't have had the expertise. What was so nice was that it wasn't about me being from TV2 or them being from VG or Aftenposten. When we were there, everyone shared their expertise in their fields. We just exchanged a lot of knowledge. We became really good at all the things we

> could never have been if it weren't for the project. It was a unique exchange of expertise. I thought it was fantastic" (Tahseen).

Like several other journalists in Faktisk Verifiserbar, Rano Tahseen joined the project without any significant experience in verification work. She credits colleagues Ruben Solvang and Martin Gundersen from NRK for being mentors and facilitators who greatly helped her manage the Verifiserbar workflow:

> "Even though we knew very little, we started with the verification work from day one in a way. We needed guidance in the beginning on how to do this. Most of us who were involved had zero experience with verification. It was something that we learned" (Tahseen).

6.5.2. Bridging Human Creativity and Technological Skills

Another Journalist in Faktisk Verifserbar, Olav Holger Næss, a researcher with broad experience from NRK, brought in another perspective when it comes to analyzing the relationship between human efforts and technological tools. When asked what his most important tool is, Næss quick response is his own brain. Næss is used to working behind the scenes in the newsroom as a researcher for TV documentaries, but ever since journalism school, he has identified himself as someone who is essentially driven by facts and truth. According to Næss, verification work requires personal stamina and motivation to find out what is *really* going on:

> "Having that curiosity and a little creativity. You need a bit of stamina. I've sat in archives and flipped through folders for four days without finding anything. You have to enjoy the hunt" (Næss).

Jan Gunnar Furuly emphasizes that although digital technologies are important tools and highly effective, they can never really replace the human ability to perceive patterns and connections in information. It is the combination of digital tools and trained eyes that enables journalists and others to identify the locations they are searching for example satellite maps.

6.5.3. Personal Motivation for Verification Work

While Rano Tahseen entered the Verifiserbar project with a genuine desire to learn and acquire new verification skills, her colleague Jan Gunnar Furuly, who already had extensive knowledge of Ukraine and Russia prior to the war, gradually perceived the Verifiserbar-project as an opportunity to engage in innovative forms of war reporting. He highlights the unique aspect of the war in Ukraine is so digital, which also makes all sorts of information from the battle zone traceable and verifiable. An essential objective for Furuly during the project period has been to win the news battle. He defines news as a dynamic entity and underlines that the *weight of news* varies depending on one day's concurrent events. For example, he considers satellite images from the warzone to be fresh material that has to be published as soon as they are traced:

> "If something interesting happens, these images will be tweeted, making them public knowledge. I am a news hunter by heart, down to the spine. I like to be first with something that is a significant development, like the picture of the (Russian) plane with the foam underneath and the black impact hole" (Furuly).

Furuly recognizes that satellite images with great public interest are rapidly spread through social media platforms like Twitter. Driven by a passion for hunting down news, Furuly, therefore seeks to be the first to unveil significant events in relation to the war.

6.5.4. Verification Ethics

During my fieldwork, it became clear that one of the biggest ethical dilemmas for verification journalists is when and how to share coordinates and exact locations in their public verification reports. According to data journalist Ruben Solvang, coordinates related to information from the warzone are easy to misuse. Soldiers on both sides of the war can potentially use verified coordinates to hurt their enemy. Early on in the war, it became evident that both Russian and Ukrainian intelligence agencies were using OSINT (Smart, 2022). When soldiers posted videos of artillery strikes, it could lead to the adjustment of artillery targets, potentially endangering the videographers. During fieldwork with Faktisk Verifiserbar, I asked Solvang if this ethical dilemma is an example of verification practices where for example, digital coordinates, can lead to actions in the real world. His answer illustrates the journalist's dilemma:

> “There is an ongoing war on the internet between individuals tracking where things are happening. It's important that we don’t become a part of that war” (Solvang).

In their report for the annual investigative journalism conference, SKUP, the Verifiserbar-team summarizes another key reflection in relation to ethics. Because of the nature of the material, the journalists occasionally encountered intense exposure to suffering and graphic violence.

> “During the Media Days in Bergen, we met Sam Dubberley from Human Rights Watch, who demonstrated how they use OSINT verification to document war crimes in Ukraine. He explained that they also assess the level of violence depicted in the visual material to provide support for those closely working with it. We adopted a similar approach by implementing a grading system for the content we processed in our main database. Each event was categorized based on the level of violence, ranging from "mild" to "very severe." This method, developed by the Centre for Information Resilience, became a crucial tool to prepare ourselves for potentially harmful content” (Furuly et al., 2023, p. 19).

Another strategy was to always work in pairs during shifts. Several journalists also had access to psychological support provided by their respective organizations. Additionally, Verifiserbar tried to follow the Bellingcat Foundations guidelines on how to handle potentially harmful content.

7. Conclusions and Empirical Reflections

Through the in-depth case study with the Faktisk Verifiserbar newsroom in this thesis, I have shown how journalists within a Norwegian verification newsroom employed advanced digital technologies in partly new, disruptive, and innovative ways to track and verify information originating from the warzone in Ukraine.

By using a triangulated set of methods and influenced by important studies and theories within the field of Science and Technology-studies, STS, this master thesis has made an attempt to describe the different actions and actors included in verification practices in journalism in a Norwegian setting. While answering the first research question, it became evident that journalists have used a diverse range of digital tools to effectively trace, verify, and organize information from the warzone in Ukraine. The research has also shown that despite the reliance on digital tools, a significant portion of the verification processes in media practice depend on manual human efforts. The findings in other words illustrate and are an example of the intricate relationship between technology and humans within the newsroom context. This again underlines the importance of human expertise, contextual understanding, and technological experience in verification practices.

In this final chapter, I try to summarize some key reflections by highlighting some overall empirical findings from the research. Finally, this chapter offers a short epilogue about the Faktisk Verifiserbar newsroom and also points to the bigger question of Artificial Intelligence (AI) in journalism practices.

7.1. Hunting Down Facts: Giving Context to the Internet

Journalist and Nobel Peace Prize winner Maria Ressa is known for speaking broadly about facts and shared realities. In several interviews and speeches, Ressa has stated that facts are essential values for democratic societies to function, saying that if we don't try to find the truth, the human shared reality faces the danger of being torn apart (Nieman Lab, 2021).

Through their advanced verification practices and routines, the journalists in Faktisk Verifiserbar are trying to give as accurate accounts of our shared realities in relation to the Russian-Ukrainian war as possible. By expanding the fact-checking efforts through initiatives

like Faktisk Verifiserbar, the Norwegian media has demonstrated its commitment to combating the spread of false information during uncertain times. In many ways, this development and efforts are also a strong signal for the proactive response of journalist to combat disinformation and provide the public with reliable and verified news content.

When reflecting on the dynamic relationship between humans and technology in the context of verification work, journalist, and data expert Martin Gundersen, one of the influential figures in the Verifiserbar project from NRK, emphasizes the crucial role of verification journalism in providing *context* to videos and images circulating on the internet. Gundersen highlights that a core issue of social media platforms is that content is often shared without proper context. He points out that misinterpretation frequently occurs among for example Facebook or Twitter users, leading to a distorted understanding of the actual content that is shown in the videos. As a journalist or a consumer engaged in news, one must approach these visuals with a critical mindset and seek answers to various important questions.

Gundersen emphasizes that it is uncommon for a video on social media to provide understandable information about the recorded footage's sender, location, and timing for example, and that this is one of the most important functions of verification journalism:

> "The issue is that in social media, things are often published without context. One of the most common things is people on Facebook or Twitter misinterpreting what the video actually shows: As a journalistic medium or as a critical news consumer, you have to answer many questions about it. It's very rare for a video to provide information about the sender, the location, and the time of filming" (Gundersen).

Looking at some of the overall findings in the case study of Faktisk Verifiserbar it is also possible to say that by applying a systematic and practical approach to verification processes the journalists translate and transform information on behalf of the Norwegian media community and also the public.

Looking at it this way, the inscription devices, the digital tools, combined with a strong journalistic, human effort becomes might be described as tools of valuation (Asdal, 2008). For example, it is possible to state that bits and pieces of information become part of valuation practices when the journalists in Faktisk Verifiserbar use colored crutches on pictures and

videos to make the verification work visual. When information is traced inside the verification cyberinfrastructure it goes from possibly being information without context on the internet to becoming part of a system that literally might later function as a historical documentation of the war in Ukraine.

7.1.1. Digital Warfare: Bringing Telegram and Cameras to the Trenches

It is also possible to relate the importance of internet context tracing in verification work back to the fact that the Russian-Ukrainian war is so digitally constant that visual content from the battleground never stops emerging on social media platforms. Ruben Solvang in Faktisk Verifiserbar calls this development of digital content emerging from an ongoing war for an extreme reality. He points out that people on the battleground have access to such good camera technologies that almost everything, everywhere is documented in some way or another:

> "What you see in Ukraine now you started to see tendencies towards Syria. The internet access that is still in all of Ukraine is incredible. The first thing you try to control when you invade a country is the internet, which Russia has not succeeded in. This means that the flow of information has never stopped" (Solvang).

On top of that, Solvang adds, there is an ongoing information war on social media where both sides of the war are fighting to own the narrative. As this thesis has demonstrated, regardless of the number of disinformation campaigns, Ukraine has so far largely won the information battle in the West over Russia. According to a recent report from OECD (Audrey, 2022), the Ukrainian government has worked systematically since 2014 with concrete policy responses that in term have strengthened the information environment. In addition, several democratic reforms over the last decade have established a Ukrainian foundation for a stronger and more robust information and media ecosystem.

7.2. Learning Outcomes in Faktisk Verifiserbar

The primary goal of the Faktisk Verifiserbar newsroom project in 2022 and 2023 was to co-practice verification of information from the warzone in Ukraine. The second and more long-term aim of the collaborative project has been to build more robust and diverse journalistic competence across Norwegian newsrooms to make sure that verification practices become more widespread knowledge. The journalists that have contributed to this master thesis all agree that the project has resulted in stronger verification networks and valuable learning

outcomes across different media publications. One key question in journalism for the last decade has been the importance of knowing how to verify digital information.

Jan Gunnar Furuly in Faktisk Verifiserbar still sees it as a specialized area with many pitfalls:

> "People are different, and some journalists have some skills that many should have, especially those who work with hard news and are on a digital news desk. Those who work on environmental issues should learn OSINT to analyze what is happening with the environment on our planet. You can use satellite images for that. But it is a specialized area, and it is like saying that all Norwegian journalists should learn, which is not suitable for everyone" (Furuly).

Answering what is the most important takeaway from her time in Faktisk Verifiserbar, journalist Rano Tahseen, considers the long-term effects of the learning processes most valuable, calling it a form of investigative journalism that requires both technical skills and an experimental mind.

> "Just the knowledge of verifying content on social media is something all journalists should know, especially at a time when all the content we see is on social media. I have used a lot of verification knowledge for other news events" (Tahseen).

She says that the verification knowledge has enabled TV2 to publish news content faster and more accurately. Martin Gundersen emphasizes the informal verification networks as a result of broad collaboration across many different newsrooms.

> "Me, journalistically speaking, I feel more equipped now. I have established connections with people in other newsrooms who possess similar expertise. We now have a larger informal network of individuals who can collectively understand what's happening right now. There are several colleagues in NRK who have the expertise and with whom I can communicate. Overall, there are more people to rely on. I believe that this strengthens our position. As these practices become more integrated, whether in ongoing journalism, investigative projects, or during periods of relative inactivity, I think that engaging with them, to a greater or lesser extent, puts us in a much stronger position than if we hadn't been involved for a certain period of time" (Gundersen).

7.3. Engaging in Newsroom Translations

The Actor-Network theory, ANT, and Material Semiotics in STS focus on translation processes, meaning that different actors inside different communities or cultures have a tendency to align their interests and goals inside social settings to form new networks. STS researcher Michel Callon pioneered the idea of translations and offered a new approach to the study of power when he mapped out the actor networks in the scallop farming industry in St Brieuc Bay in France in the 1980s (Callon, 1986). He calls what happened a sociology of translations, dividing the process into four different stages: problematization, interessement, enrolment, and mobilization. According to Callon, translation is the mechanism by which social and natural worlds *progressively take form*.

Without deploying the entire framework of translations in STS this thesis has described empirical findings and analyzed how the Faktisk Verifiserbar newsroom in specific ways has translated and shaped realities on both micro and macro levels. In addition to translating information with the help of digital tools, one of the first translations in the project occurred at an early stage when the founding media actors led by Faktisk.no and NRK, decided to collaborate. Putting away their competitive natures for the sake of a greater cause, the media partners agreed to collectively verify content from the warzone. In response to a global crisis, the media partners set aside their individual editorial cultures to address the urgent need to establish robust verification processes across different newsrooms. This again enabled them to collectively verify images, videos, and other forms of content from the warzone at a much faster speed. From the onset of the war until December 2022, the Verifiserbar newsroom traversed three different stages, each marked by distinct approaches to verification, each of which made valuable contributions to the translations and tracing of information.

The Verifiserbar-project has also demonstrated how translations of diverse human competencies can give way for new fruitful learning outcomes across the Norwegian media landscape.

Working in new disruptive ways, the Verifiserbar-team developed innovative methodologies and collaborated with international fact-checking networks, to share best practices and keep up with potentially emerging verification trends. Through empirical findings and analysis, the thesis has hopefully contributed to a deeper and hopefully more nuanced understanding of the

actor networks in media production and the constantly evolving role of technology in shaping journalistic practices.

7.4. The Future of Faktisk Verifiserbar and The Potential of AI in Verification Work

> "If there had been an AI for verification, our lives would be interesting" (Tahseen).

The coming concluding sections explore the potential impact of Artificial Intelligence (AI) on future news practices. The chapter also sums up the latest news about the Faktisk Verifiserbar newsroom.

7.4.1. What Can AI do For the Media Industry?

The AI scenario changed dramatically during my work with this master's thesis. As journalist Rano Tahseen's AI quote from December 2022 above illustrates, nobody could foresee how quickly the talk of AI would go from being a buzzword in the industry to becoming the top agenda for media actors around the world (Manjoo, 2023). For the next few months, AI-driven tools are likely to engage in media practices like automated news writing, data-driven journalism, audience engagement, and more advanced verification practices.

During my research period in Faktisk Verifiserbar, the newsroom had already hosted Sohail Ahmed Khan, a doctoral candidate from The University of Bergen, for several months. As a part of his doctoral program, Khan was training an AI-based tool to recognize tanks and other armored vehicles in Ukraine and Russia based on the verification work in Faktisk Verifserbar. The plan was to launch the platform as an open search engine.

Without a doubt, artificial intelligence has the potential to change the entire media industry While there will still be a need for human critical thinking, AI tools, and AI-generated content will have an enormous impact on journalist efforts to combat the spread of disinformation in the future. While AI technologies offer benefits and opportunities for journalism, they also raise significant ethical considerations and challenges (Trattner et al., 2022).

7.4.2. Epilogue: The Future of the Faktisk Verifiserbar Newsroom

This thesis has shown how Faktisk Verifiserbar provided the Norwegian public with reliable, trustworthy information by building strong verification processes from the ground up during the Russian invasion of Ukraine in 2022 and 2023. In this chapter, the research explores the future of Faktisk Verifiserbar as a Norwegian media collaboration. Initially, the Verifiserbar newsroom at Pressens Hus was set up to last from April to September 2022, but the project was later extended until December 2022. In February 2023 it was announced that the verification newsroom had to shut down temporarily due to a lack of resources and financial means (Olsen, 2023).

Just before I finished this master's thesis, in late May 2023, the editor of Faktisk.no, Kristoffer Egeberg announced that the project might become permanent (Stjern, 2023). While the initial mandate and first year of the Verifiserbar-project focused on addressing immediate needs, the hope is to build a more sustainable business model with a broader mission. If the decision is made to continue the project, the goal is to resume operations in 2024 and in the meantime keep the current system of journalists on stand-by from different newsrooms. It is estimated that an annual operation of Faktisk Verifiserbar will cost around three million kroner, but according to Egeberg, this is a fair amount put up against the significant challenges the industry will face in association with AI-generated images, deep-fake videos, more general news manipulation, and disinformation campaigns in the coming years (Stjern, 2023). If the Faktisk Verifiserbar newsroom is reestablished, Egeberg also says that the plan is to collaborate with professionals from other fields than the media.

By harnessing OSINT journalism and the creative and practicing explorative use of digital tools and inscription devices, the Faktisk Verifiserbar newsroom together with a broad scope of the Norwegian media landscape has made a collective meaningful impact on fighting back against disinformation in relation to the war in Ukraine. Together, the journalists in Faktisk Verifiserbar created a collaborative workspace that brought colleagues from different publications under one roof, forming a strong foundation for conducting rigorous fact-checking and verification.

Between April 2022 and February 2023, the team verified over 200 different cases from the warzone in Ukraine. The significance of the verification methods extends long beyond the Ukrainian conflict. The methods have already proven useful in addressing diverse topics such

as Nord Stream allegations, reindeer issues in Fosen, and the earthquakes in Turkey and Syria in 2023 (Stjern, 2023).

News stories building on Verifiserbar verification work have been published worldwide(Furuly et al., 2023). In May 2023 the 12 media organizations, and the 32 journalists involved in the project were awarded the Innovation of The Year Prize at the annual Nordic Media Days (NMD) in Bergen, Norway (Grøndalen & Greger, 2023).

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