

Citizen OSINT Analysts

Motivations of Open-Source Intelligence Volunteers



Stock image, Microsoft Word 2022

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Abstract

The amount of open-source information – that is, data, images, and footage that is openly available to the public - is growing exponentially. With it, so is the number of citizens analysing this data to form open-source intelligence (OSINT). Using the 2022 invasion of Ukraine as a case study, this study highlights the motivations behind the citizen OSINT analysts who are uncovering events on the frontline and verifying significant amounts of data from such events. Through interviews with 10 citizen OSINT analysts – all voluntarily contributing to OSINT in relation to the invasion of Ukraine, as well as other major OSINT projects – this study demonstrates the motivations behind this growing community. The findings reflect a new era of participation and advocacy and are a demonstration of self-determination theory. The findings demonstrate citizens' sceptic views towards traditional media but also, that with a more analytical approach, with improved transparency and collaboration there is reason to be optimistic about the future of journalism and audience engagement.

Keywords: open-source intelligence, citizen journalism, self-determination theory, social media, Russia-Ukraine war, fact-checking, activist journalism

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Introduction

Satellite images show 64 kilometres of tanks heading towards Kyiv. On the social media platform Discord, citizens monitor airspace activity to help Ukrainians safely escape their hometowns. On Twitter, trending videos show evidence of cluster bombs being used in civilian areas, almost definitely a war crime. Journalists did not source these critical findings and yet they are shared by global news platforms. Instead, these contributions have come from citizens documenting their findings using open-source intelligence (OSINT). This openly available data has been collected and analysed by skilled volunteers investing their time, often alongside full-time occupations. Whether a college student or a former weapons expert, they are contributing time and knowledge to a cause, often without recognition or obvious benefit.

OSINT is any data openly available on the wider internet, including photos, anything public on social media and geospatial data (Higgins, 2021; Nieman, 2022). Analysts then use the findings to provide actionable intelligence, which can influence journalistic work, legal cases and global fact-checking efforts. This may be by verifying the data/footage through analytical methods or by bringing pieces of intelligence together to uncover a detailed situation. The ‘OSINT citizen analyst’, as I have chosen to refer to them from here on, is a citizen who uses their time and skills to analyse this publicly-available data voluntarily. I have used this term to differentiate between ‘OSINT analyst’, now a paid occupation, and ‘citizen journalist’, which has a much broader remit.

Citizen OSINT analysts often spend long periods assessing, analysing and interpreting information. Sometimes they write publicly about their work, through blogs or social media, but the majority of time is spent verifying content online, analysing data and contributing to international investigations (Higgins, 2021; Nieman, 2022). Their work often involves being a volunteer for large OSINT organisations. Individuals, such as Eliot Higgins, who started as a citizen OSINT analyst before launching the open-source collective Bellingcat, have contributed to significant investigations such as identifying who downed flight MH17 (Bellingcat, 2022). Other organisations include Trace Labs, which focusses on finding missing people, and the Syrian Archive, which documents the crimes and human rights violations committed by all parties in the Syrian conflict, for use in advocacy, justice and accountability (Syrian Archive, 2022; Trace Labs, 2022). Most recently, OSINT analysts are committed to the situation in Ukraine, providing real-time insight (Moran, 2022).

Focussing on Ukraine as a central case study of today's OSINT efforts, this thesis will explore what motivates citizen OSINT analysts and what drives them to contribute to today's news stories, or if they do at all; it will seek to examine the motivations of citizen OSINT analysts who are doing such work unpaid, alongside other occupations. The examination of motivation and commitment amongst this community is particularly relevant in academia today, with global issues surrounding misinformation, disinformation, and media distrust. Previous work has similarly examined motivations amongst the fact-checking community and amongst those in employment with OSINT investigative organisations, such as Bellingcat (Higgins, 2021; Lewis & Usher, 2013; Müller & Wiik, 2021).

As journalism deals with a crisis of trust, citizens now have access to more information than ever (Newman et al., 2021). As has always been the case, journalists and media must adapt.

Research aim

The thesis will explore how citizens contribute to open-source intelligence and what motivates them to do so. It will look at whether they collaborate with journalists and how. This thesis will look at the motivation for utilising the relationship between journalist and citizen – from the citizens' perspective.

The research questions are:

- How do citizen OSINT analysts contribute to investigations, either with or without collaboration with the media?
- What are the motivations behind citizen OSINT analysts committing to this work?

The thesis will explore why these individuals choose to submit to open-source intelligence platforms or publish their findings on social media instead of submitting evidence to authorities, for example. Do they want to be paid? Do they want to remain anonymous? Are they seeking to be activists? It will consider what benefit the citizen feels is made from working with mainstream media, and the academia around what has motivated citizens to work with mainstream media in the past.

Background

This section will give an overview of the work of OSINT analysts, including examples of recent OSINT investigations and collaborations with the media. For the purposes of this research, finding citizen OSINT analysts who were not focussed on the war in Ukraine proved particularly difficult. For this reason, and to provide a productive discussion platform to begin research interviews, the invasion of Ukraine in February 2022 will be a case study incorporated into this thesis. I will share a brief background on the case study to begin with.

Case Study: Ukraine

This is not a study about Ukraine or how the crisis developed. However, a basic understanding of the Russia-Ukraine war and the 2022 Russian invasion of Ukraine is necessary due to the nature of much of the work conducted by citizen OSINT analysts at the time of this research – from correcting misinformation related to the war, to uncovering the impact of the conflict when communications and media access is so limited.

In February 2022, Russian forces invaded Ukraine, led by Russian President Vladimir Putin (Bigg, 2022). After months of building up troops on the Russian-Ukraine border and denying any intention to invade Ukraine, Putin invaded Ukraine from its eastern and northern borders. Putin reasoned that he saw NATO's growing influence as a threat to Russian security, wanted Ukraine barred from ever joining, and questioned Ukraine's right to exist in a post-Soviet era (Kirby, 2022). Within the first two months of the invasion, at least 7,000 Ukrainian civilians have died as a result, and 13 million have been displaced, with 5.8 million of them leaving Ukraine, triggering the most significant refugee crisis in Europe since World War II (Reuters, 2022; UNHCR, 2022). The invasion has been condemned by much of the international community, resulting in sanctions against Russia.

Within weeks of the invasion, Russia passed a law threatening up to 15 years imprisonment for anyone publishing what it considers to be false information about the Kremlin's "special military operation"; this law would cover much of the reports coming from international journalists (Simmons & Bruell, 2022). In response, many international journalists left Russia.

The law could also include citizens spreading such reports on social media. In response, some social media platforms, claiming to protect users, blocked new content from being uploaded from within Russia and removed much of the existing misinformation and disinformation (Oremus, 2022). However, coordinated campaigns, allegedly led by the Kremlin, meant that

disinformation continued to reach many users, mainly through Tiktok, which became a tool for propaganda within Russia (Gilbert, 2022). This issue has exacerbated international concerns regarding online content and the unregulated nature of social media platforms.

With such impact over a short period, it led to a rise in online and offline activism, with many users attempting to influence online communities alongside further state control of media, both within Russia and internationally (Access Now, 2022). Russian state news channels have been blocked within the European Union and the UK, while Roskomnadzor, the Russian media regulator, has banned YouTube. Such events are likely to influence the regulation of online media, which is taking place in much of the Western world today.

Open-Source Intelligence Analysis

As highlighted, open-source data covers all information openly available to the public, from magazines and public reports to social media content and satellite footage available online. It is precisely the information and data which has been actively made available for the public, not that which requires hacking or otherwise. For example, a person's publicly available photos or information on a social media profile is open-source, but it is not open-source if their login details were used to gather private information. Likewise, viewing someone's property on Google Earth is open-source but illegally entering someone's property is not. Despite the reliance on internet tools to conduct OSINT today, open-source intelligence does long predate the internet.

During World War II, the Office of Strategic Services in the US, the precursor to the Central Intelligence Agency, had a division dedicated to collecting newspaper clippings, radio reports, photos and articles – all openly available to the public – to gather intelligence (Colquhoun, 2016). Such is today's media environment, that this same openly available information is all on the internet, amongst an exponentially growing amount of other data. After World War II, the discipline of OSINT as a form of intelligence was demoted in favour of the more secretive world of signals intelligence, spies and investigative journalism.

The situation remained relatively consistent until the 2009 protests in Iran, ahead of the 'Green Revolution', when a young generation of Iranians – citizen journalists – flooded social media platforms with first-hand footage, photos and blogs regarding Iranian politics. Discontent with the lack of media coverage on the situation in Iran, alongside vast amounts of high-quality user-generated content on social media, has clarified the power of OSINT – in terms of its ability to

provide a more analytical approach than traditional citizen journalism – as well as its potential to empower individuals.

Since then, the OSINT field has grown amongst citizens, government, and the media. The ‘OSINT Analyst’ is now a paid profession. Below are examples of ongoing projects involving OSINT. The participants of these projects often include both paid and volunteer citizen OSINT analysts.

OSINT Projects

The following projects demonstrate the nature of the collaborative OSINT projects which citizen OSINT analysts have contributed to in recent years. The list is not exhaustive but illustrates the global, investigative nature of their work, which is actively used by journalists today.

Global Authentication Project and the Russia-Ukraine Monitor Map: a crowdsourced effort by the Centre for Information Resilience and the wider open-source community to map, document and verify significant incidents during the conflict in Ukraine

Bellingcat: a Netherlands-based investigative journalism team, made up of OSINT analyst volunteers and full-time staff and run as a non-profit. The team identified who was to blame for the downing of MH17 and has since run hundreds of investigations which have been recognised by the media.

Trace Labs: a non-profit organisation which aims to reunite families and missing persons while training individuals in the OSINT skills.

Airwards: a non-profit based in the UK, which tracks air incidences during the war against the Islamic State and groups in Iraq, Syria, and Libya, aiming to hold those to account who have caused civilian casualties as a result of airstrikes.

Literature Review

Journalism is facing a crisis of trust, and, alongside an increasingly polarised society, readers question the legitimacy of media stories and the motivations of those who write them (N. Tejkalová et al., 2017; Newman et al., 2021; Smith Reilly, 2020). While it varies across the globe, trust rankings consistently demonstrate that citizens question the intentions, values, and transparency of journalists; banking, automotive and pharmaceutical companies are seen as more trustworthy than the media, and the level of trust in journalists does not appear to have significantly improved during the crisis of the COVID-19 pandemic (Clemence et al., 2021). Trust levels have been shown to contribute to whether we maintain a democratic society (N. Tejkalová et al., 2017; Smith Reilly, 2020).

At the same time, the internet continues to evolve. Web 1.0 refers to the internet before approximately 2004 when most internet users were consumers, not producers of content. As we know it today, Web 2.0 is where users, including citizen journalists, upload content, much of which is moderated. But Web 3.0 is on the way – one which differs in that we could see users create and control the internet, its content and the way it operates, with cryptocurrency being just one example (Rudman & Bruwer, 2016). Whether a part of this change, or a development of the present internet as we know it, we may see users becoming even more divided, particularly in terms of political views (Benkler et al., 2018).

The Role of Citizens

Citizen journalism refers to the use of digital media by “ordinary individuals [who] temporarily adopt the role of a journalist to participate in news-making, often spontaneously during a time of crisis, accident, tragedy or disaster when they happen to be present on the scene” (Allan, 2013, p. 9). The growth of citizen journalism, intentionally or not, has been rapid in recent years. Whether providing commentary to a story or writing a blog, or posting videos and photos on social media, for many, citizen journalism is conducted accidentally. The term is generally used vaguely to encapsulate the digitalisation of media, the growing contribution ‘ordinary’ people make, and the varied motivations of those involved – from accidental witnesses to activists making a point (Allan, 2013).

The naming of ‘citizen journalist’ has been criticised for the Westernised focus the value of ‘citizenship’ has and its simplification of the digital era we are in. Reflecting on the narrative of citizen journalism used during the Arab Spring, Al-Ghazzi (2014) highlights flaws in the concept

due to the assumption of a global understanding of citizenship. Assumptions around the relationship between individual and state varies globally, and assuming journalism is a pillar of deliberate democracy is problematic (Clemence et al., 2021). Therefore, being a good citizen means different things to different people, depending on political views, views of patriotism and one's individual circumstances. Research should specify whom we are referring to as a 'citizen' and clarify it further with the specific contribution they are making to journalism, if relevant. Additionally, consideration should be given to individuals' trust in government, media and authority when talking about citizen journalism.

Participatory journalism is a term used interchangeably with citizen journalism, though it is quite distinguishable. The term refers to the nature of direct connection with media platforms and the varying degrees of oversight that go with each (Borger et al., 2013; Deuze et al., 2007). For example, the early Independent Media Centre (Indymedia) network publishes most stories submitted to its platform. At the same time, OhMyNews in Korea has thousands of citizen contributors overseen by a small team of professional content editors (Deuze et al., 2007). Other, more recent models include those that embrace citizens' participation but have more oversight, such as the UK's BBC 'Have Your Say' initiative, which encourages citizens to contribute to stories relevant to their communities (Steensen, 2011). Participatory journalism, while it started as a hopeful model for journalism and an opportunity to engage with new audiences, has generally been a disappointment for those in journalism because of the amount of extreme content, which therefore requires dealing with increasingly divided views (Deuze et al., 2007; Holt & Karlsson, 2015).

While participatory journalism is situated within the traditional frameworks of journalism, citizen journalism lives outside of such a remit. While citizen journalism has developed significantly, specifically in social media and where the state controls the media, certain factors have complicated research into the model (Sheen et al., 2021). For example, in terms of social media and citizen journalism, and the motivation of those claiming to speak truth to power – there are concerns that some citizens are more motivated by seeking more followers (Meadows, 2013). Arguing that some may be seeking a “celebrity status”, Meadows (2013) highlights that much of what is missing in the research and the rhetoric about citizen journalism is “the importance of the ‘ordinary’”. He says it is “precisely the work of the ‘ordinary’ [volunteer]” who put the citizen back into journalism” (Meadows, 2013, p. 50). While many terms are used, the processes involved in citizen journalism are the most important aspect to focus on – rather than an empirical indicator such as the content type or the number of ‘clicks’ - to understand how

it relates to journalism as a whole (Meadows, 2013). Reflecting on this, a greater understanding is needed of how these processes work, such as when an OSINT citizen analyst finds important data, how this gets picked up by the media and what motivates the citizen to share it in the first place. Qualitative research, including interviews and perhaps participant observation, is needed to achieve this understanding.

Open-source Intelligence (OSINT)

In recent years, there has been a push for “open data” across many government entities (Janssen, 2012; Scott et al., 2015). Demonstrating progress towards openness, at least in terms of statistics, governments are expected to make data available to the public (Shadbolt & O’Hara, 2013). Scott et al. (2015) argue that this, alongside citizen involvement in the processes that concern them, is the same trend that has led to citizen journalism today. When reflecting on citizen OSINT analysis, this is a development of the same processes, recognising citizens’ demand to access information that concerns them and their fellow citizens. Scholars see this as a positive development toward transparency during a conflict and for upholding democracy (Hauter, 2021; Janssen, 2012).

OSINT in journalism has been studied to a limited extent, as it is such a new field. Many OSINT analysis actors would have previously been considered sources (Müller & Wiik, 2021). Müller & Wiik (2021) highlight that as well as eager enthusiasts, software developers, architects and military personnel are becoming increasingly involved and can be crucial for both the presentation and analysis of investigations. Social scientists have already recognised the benefit of OSINT methodology in gathering reliable findings during conflicts (Hauter, 2021). OSINT organisations were started by, and continue to be heavily supported by, independent volunteers committed to skill sharing and building expertise (Ahmad, 2019; Lewis & Usher, 2013; Müller & Wiik, 2021). This suggests the motivation is potentially reflected in the self-determination theory (Ryan & Deci, 2020). With the development of this style of open-source analysis, it is reasonable to expect more professions to become valuable contributors in the future.

There has been minimal research on the motivations behind players in this space. However, Müller & Wiik (2021) explored the motivations, perceptions, and experiences of a small number of representatives from the most influential organisations in the open-source space. Interviewees included Bellingcat and Syrian Archives, discussed earlier, as well as individuals behind Airwars, which assesses the civilian impact of airstrikes in conflict, and Forensic Architecture, an organisation using architectural expertise and OSINT to investigate conflict and

environmental destruction (Lewis & Usher, 2013; Müller & Wiik, 2021). Müller & Wiik (2021) interviewed those professionally involved in these organisations. However, they were not the ‘citizen’ contributing to OSINT, and all the interviewees were formerly journalists or investigators. There is a gap in understanding why citizen analysts contribute to this work voluntarily and often alongside other professions.

There has always been a need for evidence in investigative journalism. Still, in an era where fake news spreads “further and faster through digital technologies”, trust and credibility are always at stake (Carson & Farhall, 2018, p. 1899). OSINT analysts appear committed to understanding the truth (Müller & Wiik, 2021). One perspective on a piece of data is not enough to get a rounded understanding of something, and OSINT has value here as a form of collective intelligence in that it relies on other analysts to conduct intelligence on the same piece of data (Jenkins, 2006; Müller & Wiik, 2021). Early research shows that many issues identified in media organisations’ uptake of citizen journalism are addressed by balancing the line between transparency and control (Deuze et al., 2007). OSINT enables this to a certain extent, even if it does not quite have complete media uptake. This is, I suspect, a result of scepticism of citizen journalism as a whole.

The concept and idea of citizen journalism as an alternative to traditional journalism—at least as construed by media scholars—has clearly not caught on with the Swedish public. (Holt & Karlsson, 2015)

The OSINT field appears to reflect a thought space of innovation and collaboration, quite different to traditional journalism. This is done through conventional methods, such as communicating directly with each other, as well as through technology; the Syrian Archive team, for example, according to Müller & Wiik (2021), works with a technology called SugarCube, open-source software that “automatically scrapes YouTube, Facebook, Instagram and Telegram for preidentified content”. Similarly, in the growing ‘fact-checking’ movement, which purely focuses on verifying news online, there is a commitment to collaboration (Graves, 2018). The lack of competition in open-source analysis is unique when, in journalism, there is usually competition for breaking a story first; in OSINT, however, it remains a core principle, with best practices shared and international collaboration encouraged (Müller & Wiik, 2021).. Academically, however, there is little research on exactly how efficient sharing is maximised across OSINT professionals and journalists.

Motivation behind OSINT

Motivation does not have a single meaning. Motivation has been described as a system of parts that function together, factors that “energise, channel, and sustain human behaviour”, to set the direction, the intensity and the duration of one’s energy (Porter et al., 2002; Steers et al., 2004, p. 379). Perception is the way in which something is interpreted by the individual and therefore influences motivation (Gil de Zúñiga et al., 2011). But it is a blurry line between motivation and perception, and often, the literature groups them due to the challenge of telling them apart.

Research into bloggers’ motivations and perceptions of their work found that those who saw their work as journalism were more likely to engage in journalistic behaviours, such as quoting sources, fact-checking, and publishing corrections (Gil de Zúñiga et al., 2011). Their perception of themselves leads them to act as journalists “via activation of a motivation to inform and influence readers” (Gil de Zúñiga et al., 2011, p. 591). Many OSINT analysts also run their own blogs or publish findings on social media. Like research on early blog writers, understanding OSINT analysts’ motivations for doing this could help clarify the blurred line between the investigative journalist and the OSINT analyst (Gil de Zúñiga et al., 2011).

Research on the motivations of citizen OSINT analysts to work with the media is scarce. While Müller & Wiik (2021) interviewed representatives of organisations committed to OSINT work, such as Bellingcat and Airwars, the research was focused on how working with such organisations is changing the ideology and methodology of investigative journalism. Writings on the development of Bellingcat have indirectly hinted at how autonomy, developing expertise and working towards a greater cause are motivators for the OSINT community (Higgins, 2021). This could be an early indicator of the self-determination theory, which suggests that motivation comes from three innate desires to have connection, autonomy and to be skilled (Ryan & Deci, 2020). But no literature has addressed what has motivated individuals’ interest in OSINT at an early stage when there is no public recognition, financial benefit, or otherwise.

Early research on bloggers described them as lacking the skills and training of traditional journalists but instead regarded them as committed to the role of observation, analysis, and interpretation (Andrews, 2003; Lasica, 2003). This is how citizen OSINT analysts are now described. While some blogs analyse issues of the day, others can almost be compared to a diary (Andrews, 2003). OSINT differs here, intending to declare the facts – as much as can be offered by openly accessible data (Ahmad, 2019; Janssen, 2012). Conflicting with the intention of OSINT analysts, blogs give importance to opinions and personal interpretation of current affairs, and often this can lead to encouragement of strong opinions and even extreme views (Gil de

Zúñiga et al., 2011). However, distinct from blogging is the precise removal of sharing opinions on their work in OSINT, offering quite a development in just a couple of decades.

Müller & Wiik's (2021) study highlights the need to understand how future collaboration can be facilitated and how we enhance professional identities for those who contributed to such important work. Progress of skills has been seen to be the biggest motivator in the workplace field, again contributing to an element of self-determination theory (Amabile & Kramer, 2011). Considering the minimal number of experts in the OSINT field and how few citizens would be deemed highly skilled, this could apply. When also considering the availability of actual data and metrics with OSINT findings, and how 'gamification' (the creation of competition in the newsroom using the metrics of news clicks) has motivated some journalists, there is an additional potential motivator for individuals to demonstrate their skills through highlighting their progress in comparison to others (Amabile & Kramer, 2011; Ferrer-Conill, 2017). Whether there is a competitive element amongst citizen analysts to find the truth first or to correct untruths first, is yet unknown.

There are concerns amongst some scholars that collaborative journalism is market-driven rather than orientated around the citizen and that readers, acting as citizen journalists, could be exploited for content, enabling news organisations to cut back on staff (Banks & Humphreys, 2008; Moretzsohn, 2014; Örnebring, 2008). Assessing how this influences the citizen analysts and recognising the close relationship between perception and motivation, research must explore how these individuals feel about their contributions and whether the motivations come from a place of doubt in news organisations' abilities and commitment to truth.

Education levels can affect motivation. Bergström (2017) highlights the different education levels can have on whether someone is a 'good' internet user or not. Less-educated people are more inclined to use the commenting function on news sites than those with higher education Fields (Bergström, 2017). And there is little evidence of commenting functions providing constructive contributions to journalism, and the availability of a commenting function offers minimal improvements to engagement with a news platform (Lischka & Messerli, 2016). Sharing news stories requires even less effort than writing a comment but improves loyalty to a platform (Lischka & Messerli, 2016). Those with higher education are reportedly 'good' internet users and likely to seek more views from various sources and are less likely to comment on stories (Bergström, 2017).

Being an OSINT analyst would likely require high levels of education, considering the professions often involved. The educational levels of OSINT analysts, either volunteer citizens or professionals, have not been assessed. This could be studied through close ethnographic scrutiny, or at least by measuring education levels in future research on OSINT analysts. Contributing to OSINT, fact-checking news, or even analysing one's daily news intake requires significantly more time than writing a comment on a news article; research comparing the effort one puts into responding to or correcting media and one's political views and/or motivations would be helpful here.

Theoretical Review

The literature has demonstrated some of the connections OSINT has with journalism and engaging the public with the journalistic profession. Stokes (2021, p. 77) says that using theories “is purely pragmatic: theories provide us with ways of thinking about our object of analysis. The purpose of theory is to help us.” With this, and reflecting on the literature review, the theoretical frameworks most relevant and useful to this research are self-determination theory, citizen journalism, activist journalism, and participatory journalism.

Evolving Journalism Genres in the Digital Age

The below are developing theories in a digital age, often discussed in relation to the traditional frameworks but with differing levels of agreement on whether such behaviours constitute ‘journalism’. Either way, the theories prove useful for this paper’s research purposes in analysing the individuals’ behaviours and motivations behind such activity.

Citizen Journalism

The theory of citizen journalism covers multiple dimensions. Still, the primary concerns are the passive vs active nature of citizenship, depending on whether it relates to citizenship through the state or participating in other institutions. The second dimension concerns the relationship between the public and private spheres of society (Andrews, 2003). According to Lister, (2003, p. 41):

In the legal and sociological sense, to be a citizen means to enjoy the rights of citizenship necessary for agency and social and political participation. To act as a citizen involves fulfilling the full potential of the status. Those who do not fulfil that potential do not cease to be citizens; moreover, in practice, participation tends to be more of a continuum than an all-or-nothing affair, and people might participate more or less at different points in the life course.

There is considerable agreement amongst the academic community that alternative media, including in the form of citizen journalism, can contribute to active citizenship, including as recently as the COVID-19 pandemic, where citizen journalism proved to be particularly useful in disseminating information in authoritarian regimes (Sheen et al., 2021). However, there is less agreement on whether citizen journalism should be considered journalism, arguing that there are not the same expectations of ethics or objectivity (Min, 2016).

Citizen journalism will be applied to the ongoing research and future thesis as a framework to ascertain how the model, which can be both complex and an asset to journalism, applies to the behaviours of the citizen analyst and how the model reflects the motivations of the citizen analyst.

Activist Journalism

The idea of ‘objective journalism’ is a flawed concept (Powers, 2015). Attempts to be objective are marred by the individual experiences of journalists, particularly those with local, lived experience of a conflict. To respond to this, in some places, for example in Cyprus, which has a long history of conflict, journalists may self-identify as activists *and* journalists (Camaj, 2018). For those in Ukraine, as their country is being invaded, there could be a similar sentiment. With this, the current situation in Ukraine will be applied to the ongoing research as a case study.

Social media has brought activists and journalists closer than they have ever been (Poell & Rajagopalan, 2015). Ethical concerns exist that activist journalism could impact journalistic independence (Fenton, 2010). But Poell & Rajagopalan (2015) say both journalists and activists have seen it as an opportunity for open communication and debate, allowing for dialogue between activists, journalists, policy professionals and politicians. Twitter users also appear to have improved political engagement (Poell & Rajagopalan, 2015). For the OSINT community, the situation may be no different – enabling OSINT analysts to collaborate with specialists, journalists and influential policymakers.

At the risk of damaging the progress made by other journalistic advances, strict editorial codes of factual reporting and accountability should be prioritised when media organisations promote the work of citizen journalists, including citizen analysts. This research aims to understand whether these citizen OSINT analysts consider activism motivations in publishing their work or whether these motives in fact exist. Poell & Rajagopalan (2015) say social media has brought activists and journalists closer together. However, it is worth assessing whether the motivations behind OSINT citizen-analysts are similar to other users, even self-proclaimed ‘truth-seekers’, on social media.

Participatory Journalism

As discussed earlier in this paper, participatory journalism is used interchangeably with citizen journalism, though it is different. While participatory journalism operates within the traditional

frameworks of journalism and with much more oversight by editors, citizen journalism lives outside of such a remit (Borger et al., 2013; Scott et al., 2015).

Participatory journalism has generally been a disappointment for those in the media industry because it invites such broad, divisive opinions that do not add to journalistic findings (Deuze et al., 2007; Holt & Karlsson, 2015). However, when applied to citizen OSINT analysts and their motivations for working with media and journalists, there could be significant differences in the work processes here. At least, at first glance, OSINT analysis involves deeper scrutiny than previously referenced participatory journalism.

The OSINT community claims to provide evidence and actional intelligence, which influences journalistic work, legal cases and global fact-checking efforts (Higgins, 2021). If this is the goal of OSINT, then how these analysts are participating with mainstream media should be examined, alongside whether they feel media organisations are using this intelligence and, if so, whether this model is a motivating factor in itself.

Motivation and Self-Determination Theory

Self-determination theory (SDT) is a theory of human motivation (Ryan & Deci, 2020).

SDT assumes that motivation is positively affected by intrinsic motivators, specifically, mastery or skill enhancement, acting with autonomy, and relatedness – that is, social connection and concern for others. Several studies have identified links between SDT and employee motivation, teacher and student motivation, and open-source software developers' motivations (Chris Zhao & Zhu, 2014; Ryan & Deci, 2020; Sun et al., 2019). For those with extrinsic motivators, as in another person is enforcing the behaviour or offering a reward, the opposite result occurs; there is poorer performance, more absenteeism, and a lower quality of work. As such, people are, according to SDT, more motivated for longer periods when their reasoning for doing something comes from their own wants and needs rather than someone else's.

Autonomy includes self-initiation and the desire to direct our own work and lives, meaning the individual has a complete choice in what they are doing (Ryan & Deci, 2020). Mastery covers the development of a skill, building expertise, and the desire to improve one's competence (Ryan & Deci, 2020). Examples of this include learning an instrument for the pure joy of improving or people who spend hours on developing a piece of software, only to give it away rather than sell it. As will be assessed in this research, individuals within the OSINT community could potentially be another example; through fact-checking and conducting complicated

investigations, while many of them already have reliable forms of income, they are doing sophisticated work for free, not for their employer, but to a community of people, many of whom are anonymous. The potential influence of SDT on the motivations of their efforts is possible – stimulated by challenge and mastery, alongside making contributions to causes they care about.

Methodology

This chapter outlines the qualitative methodology used in this study, which is a semi-structured interview approach. This chapter also describes the processes used to recruit research participants, the data collection and analysis method, and the evaluation of the study.

Research Design

Individuals are increasingly contributing to news in different ways, be it through open-source analysis, fact-checking or otherwise. Citizens' contributions to journalism are changing, but there is a lack of recent research on the motivations behind their work.

To address this gap, citizen OSINT analysts were interviewed to understand why individuals choose to contribute to this work and to explore how citizens use OSINT to contribute to investigations and to journalism and what motivates them to do this.

Research Design

Ten citizen OSINT analysts were interviewed for this study using a qualitative approach. Qualitative research using interviews as a primary source was particularly useful for a topic where understanding and insight is limited. This method facilitated a more in-depth understanding of the topic, enabling us to better understand the motivations behind citizen OSINT analysts' work.

A semi-structured interview framework was used which encourages free-flowing conversation and flexibility in the interview while maintaining focus on the relevant questions (Stokes, 2021).

Following the model used by (Mortensen et al., 2019) when looking at the motivations of photojournalism subjects, the semi-structured interview contained two sections; the first exploring how the analyst's background, experience and contributions, and the second exploring the individual's motivations, perceptions of their work, and reasons for collaborating (or not) with other individuals, OSINT organisations or the media (Mortensen et al., 2019).

The research interviews were conducted in April 2022 either over the Zoom platform or through Discord audio calls and then transcribed. Appendix 1 provides an outline of the semi-structured interview questions.

Sample

The sample is ten people meeting the criteria to be considered a ‘citizen OSINT analyst’. In qualitative interviews, the majority of concepts are identified within the first five to six interviews, and up to 92% of concepts, or themes, are identified within ten interviews (Guest et al., 2006, 2020). A citizen OSINT analyst, for the purposes of this research, is defined as a person who uses their time and/or skills to contribute to open-source information gathering and intelligence analysis, and who has voluntarily made such contributions outside of their day job during the last 12 months. This differentiates them from an ‘OSINT analyst’ which is now a paid occupation, for those involved in the intelligence profession. The sample has worked in collaboration with journalists or media organisations or in a participatory format with other OSINT organisations.

This sample was found through convenience sampling, first seeking individuals on social media platforms including Twitter, Discord and LinkedIn, and then by approaching organisations operating in the field, such as Bellingcat, to request the invitation be passed on. Convenience sampling is a non-probability research method relying on finding participants through readily-available methods (Brodaty et al., 2014). Individuals on LinkedIn and Twitter were found through searching the #OSINT or #opensource hashtag, and those on Discord were found through the ‘Project Owl’ or ‘Bellingcat’ channels, which I was invited to through my interactions with OSINT analysts on Twitter. Channel members who had recently been online were messaged. Once a response was received from either the individual or organisation, the specific criteria to interview them were checked, confirming that they had made active contributions to the OSINT community and that they were not paid for their work, and consent forms were sent. A copy of the consent form, which was agreed to over email, can be found in appendix 2. Once consent had been given, 45-minute Zoom interviews were arranged with the relevant individuals and recorded. The sample was intentionally sought from a variety of locations and geographies, and with a combination of male and female participants.

While the number of citizen OSINT analysts is not known, due to the varying degree of involvement each individual has in the OSINT community, there are some indicators of the size of the population. ‘Project Owl’ and ‘Bellingcat’ are two of the biggest online communities, through Discord; Project Owl has 30,000 members, and Bellingcat has 10,000, with a significant proportion of Bellingcat members also being a part of Project Owl. For this reason, we can assume that there are at least 30,000 citizen OSINT analysts.

The majority of the sample is, as a result of the war in Ukraine, contributing to open-source intelligence on the Ukrainian invasion. As such, this will be reflected upon as a case study.

Case study

Due to the challenges of finding research participants for this study with varied interests, just as the invasion of Ukraine began in February 2022, Ukraine is a case study within this research. This is based on the global significance of the war in Ukraine as I conduct this research, but also based on practical reasons; all OSINT citizen journalists approached, who would be appropriate for this research, are heavily focused on what is occurring in Ukraine and how they can support OSINT investigations there.

Analysing the findings alongside the case study enables a pertinent conversation base for the research interviews, makes this research particularly relevant today and builds on earlier research in this domain, such as Hauter (2021) and Müller & Wiik's (2021) findings.

Data Analysis

After the interviews were complete, audio recordings were transcribed, excluding irrelevant filler speech. Filler speech, such as “umm” or “but”, was kept in the transcripts when it was deemed relevant. Furthermore, relevant verbal and non-verbal cues, particularly intonation and pauses in speech, were noted in italics and round brackets.

Information intended to give context or clarify the interviewee's comments is included in square brackets. For example, if the interviewee used an acronym, the full name will be noted in square brackets. To protect confidentiality, when an interviewee has used a term specific to their job title or a colleague's name, for example, a generalised term replaces it in square brackets.

Coding

An inductive approach was used for this project. After transcription, each transcript was analysed to better understand participants' perceptions and motivations. The interviews were analysed using thematic analysis, with each transcript read multiple times, and then patterns were withdrawn from the data using inductive coding to categorise themes and identify patterns (Evans & Lewis, 2018). As Evans and Lewis (2018) highlight, a theme is determined by considering first the semantic level of analysis and then the latent level – where one moves from purely describing what interviewees say to considering what their statements mean, for example, their assumptions beliefs, or motivations. This involved adding comments to the transcripts

identifying initial codes, sometimes multiple codes per statement, and assessing these codes to develop themes in line with the theoretical review.

Throughout the analysis process, I refined the codes and used them to re-code the data. The transcripts were reread, and links were made between codes, with new codes added where relevant. The themes and examples for each can be found in appendix 3.

Evaluation

Reliability and validity

Interview questions were developed in full consideration of the purpose of the study and research questions. The invitations, interview guide and consent form, are attached in the appendices, so the reliability regarding replicability, should be considered high.

Influential factors on any replicability would likely be based on external factors related to current events; for example, the case study of the war in Ukraine was particularly influential for the period of this study in terms of the focus and potential motivation of citizen OSINT analysts. Future research must modify such factors, such as assessing the motivators during different crises.

The interview guide allows for flexibility in the way questions are asked and at what stage of the interview and, while this may compromise the replicability of the interviews, this is often the case with qualitative research and remains reliable due to the deeper insight gained overall (Stokes, 2021, p. 200). The research is considered reliable if, over time or with different methods or in different environments, the observations are stable. To address some of the reliability issues with content analysis, tests of inter-coder reliability were conducted by a second researcher who assessed the categorisation and codes (Stokes, 2021, p. 141). When coding themselves, there was at least an 80% match to my coding.

Ethical considerations

The interview will involve the disclosure of personal information, which, depending on the motivations of interviewees and the investigations they have been involved in, could be highly sensitive. All data will be stored and held in accordance with European GDPR legislation, alongside informed consent forms, which were sent by email and then consent was confirmed

again in the interview. Recordings were deleted securely following transcription, and only pseudonyms have been used.

Reflexivity

It was important to consider the effect my identity has on the research process. As a journalism researcher with experience in journalism, media relations, and the intelligence field, I tried to mitigate this by not focussing on my background. Interviewees may be more guarded in their reflections on journalism as a profession and their motivations for working with some media or investigative organisations and not others when they did not know who exactly I have worked for.

Additionally, the citizen OSINT analysts were volunteering their time for the majority of the work they conducted. As a long-term volunteer for various organisations, my motivations for why I volunteer or why I believe one might volunteer could have influenced my perception of others' thoughts during the coding process. And while I did not disclose my volunteering experiences, there may have been an element of the participants seeing me as an 'outsider' for not being part of the OSINT analyst community.

Gair (2012) discusses the “insider” and “outsider” position of a research interviewer and how the ability to cultivate empathy in an interview can facilitate more insightful findings – but that one must also be mindful of how one may be an insider, an outsider, or in between (Gair, 2012). To the analysts interviewed, I was an insider because I am interested in the field of OSINT and understand a field that is not necessarily understood by the general population. I was an insider because I have conducted open-source intelligence work before and made that clear through using shared language with participants. For those working closely with journalism organisations, I was an insider because I have been a journalist, which they could have easily discovered from searching my name online. I attempted to maintain this status during the interviews by not explicitly talking about my background, but by listening closely and adapting the terminology, they used, as well as focussing the interview on the OSINT topics, which interested them.

I was an outsider in other ways. I have not had the same jobs, responsibilities, or training as the interviewees, nor participated in OSINT in the intense manner they have, or during the Ukraine war; my former intelligence experience was paid, and I have never done such work voluntarily. There were also occasions in which I could sense some hesitation in disclosing details of the

work individuals were involved in due to my status as an outsider and my ulterior motive to conduct and publish research rather than work on OSINT investigations.

Finally, I chose what questions to ask, how to analyse the data, and what to include and exclude in the analysis. Another researcher could make different decisions in this process and come to different conclusions. The interviewees were given a chance to speak and encouraged to follow up questions with issues paramount to them. But I have conducted the research and have the platform to write the paper, so there is a limitation in how accurately I portray participants' motivations and interests.

Limitations

With all this said, the following could still be considered limitations for the research.

Semi-structured interviews proved to be a time-consuming method, particularly in relation to finding interviewees who meet the sample criteria and respond to requests promptly. Due to time constraints, the survey size of ten interviewees will only provide most perspectives, but indeed not all views, as discussed earlier. However, as the sample size is selective – specifically only choosing citizens who are engaged with open source investigative research and who have worked directly with media organisations, journalists or fact-checking non-profits – this research will offer unique, in-depth insight into this specific group.

In terms of finding the research participants, convenience sampling was conducted by searching for relevant individuals engaging in OSINT activity on social media. Fifty citizen OSINT analysts were contacted directly through Twitter and LinkedIn. While this will not represent all available citizen OSINT analysts, it was a significant number for the sample size. As all participants are relevant representatives of the sample, the validity should be considered high.

Additionally, the algorithms of my own Twitter and LinkedIn accounts, and privacy restrictions on which analysts make themselves contactable, would have influenced who I was able to find. Typical of convenience sampling, this means the findings are only applicable to the sample studied (Brodaty et al., 2014); only English speakers, whether the native language or otherwise, were interviewed and only those reachable through social media platforms.

Finally, the conflict in Ukraine has ignited a vast activism movement globally and may add to the activist motivation OSINT analysts could have. For this reason, while I will be using Ukraine as a case study, interviewees will be encouraged to discuss their involvement in OSINT before the Ukraine war and aside from the war.

In the next chapter, I present the findings produced from this process.

Results

Three broad themes emerged during the analysis process and several sub-themes developed under each category. This chapter will first introduce the interviewees and then will be divided into three different sections, one for each central theme. The first covers participants' perceptions of OSINT, covering their own investigative work, how the community operates, the challenges, and the work which inspires them. The second theme discusses participants' views of the media, journalism and authority. The third looks at the self-described motivations of participants, including sub-topics such as the desire to advocate, gain recognition, and the desire to correct misinformation. The results will then be discussed and analysed in the next chapter, reflecting on the literature review and theoretical framework.

While these categories are most relevant to the research questions, themes often overlapped. See appendix 3 for themes, subthemes and examples of indicators.

The Participants

Ten participants were interviewed and pseudonyms have been used for all. The participants were seven men and three women from different backgrounds and countries and with varying degrees of involvement and skills in OSINT, although they were all part-time volunteers. Their educational experiences varied, but three participants were studying at the postgraduate level during the interviews, indicating a higher level of education than the general population. Participants were mostly in their 20s and 30s.

Adam has a background in journalism but is now studying towards his PhD while in Taiwan, with most of his spare time spent on OSINT projects. He is originally from the USA.

Anya is in her thirties and considers herself a learner in the OSINT field, though spends at least a few hours per week on volunteer OSINT work. She has a background in working for the government and advanced computer skills.

Dean has 20 years of experience in government intelligence, including OSINT work, and consults professionally on OSINT projects full-time. He contributes approximately seven hours per week as a citizen OSINT analyst. He has worked closely with the media, including training organisations in OSINT.

Hannah is in her late 30s and accelerated her OSINT contributions at the start of the Ukraine war after it was merely a topic of interest beforehand. Within weeks of volunteering, she was employed full-time as an OSINT analyst for the Centre for Information Resilience on a project

verifying open-source footage from Afghanistan. She volunteers an additional three hours per weekday and eight hours per weekend day on projects focused on Ukraine.

Stephan is 22, studying while working in a minimum wage retail job. He is particularly interested in aerospace security, with less than one year's OSINT experience and voluntarily contributing approximately 10 hours per week.

Jamie is in his 30s and is a quality inspector based in the US, with a background in security work and computer studies. He volunteers approximately 20 hours per week to OSINT.

Max is 31 and works in geospatial prototyping while completing his postgraduate study in Germany. He has some experience in collaborating with media directly and outside of his study, spends approximately seven hours contributing to OSINT communities.

Tim is in his mid-20s and works as a programmer in Finland while volunteering for Bellingcat's Global Authentication Project as an OSINT analyst.

Quentin is still studying at school, is age 16, and is based in England. He has approximately one year's experience with OSINT and contributes 5 hours weekly.

Yana is a self-taught product designer working for a technology company. She is in her mid-30s, Ukrainian but left for Germany ten years ago. All her family are still in Ukraine.

Perceptions of OSINT

Interviewees were asked about their involvement in OSINT investigations, their skills, and how they came to be involved in any investigations. They were asked how they discovered the term 'OSINT', what prompted them to research such work further, and what they thought the aim of their work in this area was.

Intentions

Interviewees consistently perceived their OSINT roles as requiring a scientific approach, which required a commitment to truth, with every finding replicable by another analyst. New to the OSINT community as both a professional and volunteer, Hannah says:

“I was analysing a bombing yesterday... I cannot write about how the Taliban are horrible, that they are bad. I can only put the facts down that someone else can interpret when they are reading.”

They discussed the need for upskilling in specific techniques and the need for persistence. They all perceived themselves primarily as OSINT analysts or aspired to be OSINT analysts, though

they may have felt they lacked the experience for the title just yet. When asked about whether they saw themselves as activists, two of the participants said they were closer to being journalists as they wanted objectivity, while two others preferred the term ‘advocate’. The others said only the analyst appeared to suit them.

Participants gave an overview of the investigations they were involved in. As well as regularly analysing information coming out of Ukraine and involvement in the investigations referred to in the ‘background’ section of this thesis, they described contributions to:

- **Helping people get out of Ukraine:** working with analysts to support a party to safely exit Ukraine, analysing Russian troop movements and air traffic over the party’s route out of Ukraine. The work was highlighted in Vice in April 2022 (Geiger, 2022).
- **Climate change investigation:** OSINT is used to uncover various climate-related issues, with analysts able to monitor fires, crop damage, emissions, or landscape changes. One participant was analysing whether harm due to climate change influenced local protest activity, for example.
- **Global Authentication Project:** a collaboration between Bellingcat and the Centre for Information Resilience, volunteers verify data, including video footage, on a shared database of the war in Ukraine. The confirmed findings are then shared on either the public map, accessible by anyone or on a secured database if the privacy of individuals on the footage is of concern. Yana, a contributor to this project, says:
“So this map is online and is being used by many different media and journalists, but it's also going to be used in any further investigation in the International Criminal Court or further justice-seeking.”

Asked what first appealed about OSINT work, participants referred to a combination of reading about other impactful investigations, such as those conducted by Bellingcat. At least participants referred to the MH17 crash and how Bellingcat contributed to identifying the culprit. Adam referred to being specifically first motivated to support the work of military OSINT analysts when reading a report about the Indian government calling for the suspension of OSINT accounts on Twitter; his interest here could reflect a degree of mistrust in government more generally. Five of the other participants said that the Ukrainian war had triggered their involvement or escalated their involvement in the OSINT, primarily concerned about misinformation and injustice, as highlighted later in the results.

Challenges

The challenges of OSINT work covered three sub-themes; the time needed to learn specific OSINT skills and tools, the disturbing nature of much open-source content and the mental health challenges which comes with this, and the coordination of large groups of volunteers working on one piece of OSINT.

The skills and tools required vary from project to project, but participants described an overall need for tenacity. Participants used a number of methods to develop their initial geo-location skills early on in their OSINT work, such as the geo-location game GeoGuesser. Geolocation is where locates where a photo or video is taken based on identifying features within an image.

Participants believed that the reason some volunteers do not carry on their work with the OSINT community long-term is either underestimating the time required to successfully verify something or a lack of tenacity to learn the tools. There are also issues, particularly as the OSINT field grows, with managing large volumes of information from many volunteers. Yana, in particular, recognised her skill set in “volunteer management” was in demand amongst the OSINT community, particularly as the field grows. As an example, Bellingcat can manage the amount of data it has because of its well-managed structure; the ability for other organisations to do the same is dependent on funding the right people to manage volunteers effectively. Therefore funding could impact some OSINT community’s developments, particularly those working at the scale of Bellingcat, for example.

Specific skills helped engagement; for example, meteorology or spatial analysis skills are helpful for developing OSINT on satellite imagery. Basic language skills appear to improve geo-location skills. Because of the effectiveness of online translation tools, even a basic ability to read foreign language symbols is useful. For example, Max described his basic ability to read Chinese symbols, which enabled him to type them on a keyboard, put the symbols into a translator and then translate the text.

Local cultural knowledge can help identify certain locations. For example, Yana’s knowledge of Ukrainian culture helped her identify where a video, showing alleged war crimes, was taken:

In the background, there was a blurry storefront and I saw it and I thought, I definitely have seen this somewhere before. And I realised that it was a character from a 1969 cartoon, Soviet cartoon that we used to watch as kids. It's kind of like a Soviet Winnie the

Pooh character. So like, I googled that, and a children's hairdresser salon came up, and it was this location [I was looking for].

As reflected in self-determination theory, topic or culture-specific expertise appears to help motivate individuals to continue their work, as well as being useful for the OSINT community.

Mental resilience is required, with participants referring to the mental health impact of their work when viewing disturbing images and videos. They often had to view them repeatedly to conduct a thorough analysis and this took its toll in different ways depending on the relatability each of the participants felt. For example, for those with personal connections to Ukraine, they found their work a means of “coping” instead of “just watching” the news on repeat; for those with children, regardless of their connections to Ukraine, they found footage of children exceptionally difficult to watch.

Participants involved in the Global Authentication Project all said that it was not the images of dead bodies or an execution that stuck in their minds or particularly disturbed them. Rather, it was the findings from their verification work that disturbed them, when they discovered the background story to individuals, or any references to individuals having families or children. Another participant discussed the difficulties she found when verifying or geo-locating schools or children’s playgrounds because, in order to verify a photo or a video, she must find images or videos from before the war, to confirm the alleged location in the video or photo is, in fact, the exact same spot. She says she finds it particularly hard to watch videos of children or families playing in the parks, and then mentally processing that that same location is no more.

I think, I’m not sure if it was my first geolocation, my second, it was a bombing of a zoo, a small animal park. I found footage on YouTube of a family having a day out and everyone was so happy and laughing. And then there’s just, it just breaks my heart because that’s gone, those memories stayed somewhere. [Those families] cannot go back.

- Hannah

Another participant, Adam, who worked on verifying child sexual exploitation content for prosecution purposes highlighted the long-term impact such footage had had on him, and that there is little which can be done about it. He reflected on it as important work, which “someone has to do”, but that even years later, he struggles with the impact of such footage.

Community

Participants described the openness within the OSINT community as promoting the sharing of information, inviting scrutiny and always being done with the intention of contributing to a collective purpose. They demonstrated pride in their efforts and relished in being a part of the OSINT community, reflecting a need for contributing to a cause or finding belonging.

I think that an interesting aspect is that this community is that it's incredibly welcoming. As a person who spends a lot of time on Twitter where a lot of hate speech and harassment happens. I was a target of this harassment at times. But on the servers, I always felt like people are very friendly and very open and they want to help each other. I think that maybe some people find their sense of belonging in these communities.

- Yana

Views of Media, Journalism and Authority

Participants' views of the media, journalism, government agencies and authority were highlighted as a result of indirect and direct questions. They were asked about their willingness and desire to influence media stories, but the majority of perspectives regarding government or journalism today were shared freely without being directly asked. For example, for some, when asked 'why do you think your OSINT contributions are useful today?', participants would refer to their desire to correct misinformation, inaccurate journalism, or to hold a government to account for actions not being openly shared.

Trust Levels

Trust in government and or state agencies varied across participants. While two participants described being openly "anti-police" or not trusting their own government, others did not disclose such obvious disdain for authority. Rather, they were more doubtful of government and authority agencies' *ability* to conduct investigations at the speed of their fellow OSINT analysts, or with the same innovative approaches. Dean, with 20 years of government intelligence experience behind him said, "The reason why I left about government was not that I didn't like it, but I wanted to move faster than most governments get to."

When asked about their desire to share OSINT findings with the government, rather than working with independent organisations, participants were generally open to the idea but felt their participation in the OSINT community was more effective through shared intelligence – be

it through social media tools or otherwise. There was also a sense of distance from one's personal responsibility to share findings with government, as most participants felt they were contributing to a reputable organisation who, where relevant, would share such information with the relevant authority. This question and the findings from it could be attributed to both trust levels in authority and personal motivations for public recognition, or not. As Max said:

“once you publish something publicly, you can always just contact a contact at an activist organisation or in a government department or something like that, and highlight, I found this, you might want to check this out.”

The overall view of journalism and the media industry was met with scepticism, referring to a perceived lack of resources within today's newsrooms, a lack of thorough verification of the footage shared by journalists, and the “biased” nature of media today, as referred to by some particularly. There were consistent references to the emotive nature of news, from how it can impact how a story is told, to the mental health impacts of emotional news stories on the viewer.

I can actually not watch the news. It's too depressing ... But I can read things on [Discord] because it's all very neutral there and I can pick and choose what I want to read and I can then stay very on top of information - without accidentally being subjected to distressing information, images, sounds and so on.

- Anya

Other than the two who had a history of journalism work themselves, participants were doubtful of the objectivity of the media, and therefore their trust was impacted. Those with a background in journalism, however, or who had actively sought to work with journalists, were content with the emotive nature of journalism and did not express distrust in the industry. Rather, the belief of OSINT being objective and/or scientific appealed to them.

Comparing Journalism and OSINT

Participants felt there was a misunderstanding of the difference between open-source information and open-source intelligence (OSINT), particularly when used by journalists. They described footage and images used by journalists, specifically when pulled from social media, as lacking in the analytic aspect, therefore perpetuating misinformation.

[OSINT] is not just simply finding something online. That's the easy part. That's open-source information. So open-source intelligence it's a different skill set. And in my experience, 95% of all news outlets around the world will collect information from the internet, but lack that intelligence department – that proper analysis to make sure that you validate and weigh every piece of information for its first worthiness and validity.

- Dean

Participants had consistent views of the role of journalism and what it should be. They believed the aim of journalism should be to hold authority to account and to seek truth. They referred to journalism as being comparable to OSINT in that openly available information is used to formulate facts and sequences of events. However, they felt journalism today often falls short of expectations; participants felt journalism generally lacks the 'intelligence' requirement of OSINT; open-source information is used, but without sufficient analysis, it fails to be OSINT.

When you're doing analysis, that's just the facts. You don't argue about them. No, no, like, I was analysing bombing yesterday, there was massive bombings in Afghanistan. And then I cannot write about how the Taliban are horrible, they are bad. I can only put the facts down that someone else can interpret them when they reading.

- Hannah

Journalism was described as being a gatekeeper to information. In contrast, OSINT was described as empowering the audience, or “ordinary people”, to follow the story and each individual step of an investigation themselves. This was discussed in relation to tackling misinformation and disinformation issues, audience engagement, and individual responsibility when faced with injustices. With specific references to anti-vaxxers, climate change deniers, and being able to follow COVID-19 news directly during the pandemic, sharing the full OSINT methodology on an investigation, was discussed as potentially, more so than traditional journalism, a way to reason with those who are sceptical of the media:

So, in this context, you are providing the story, not like in a series of unnamed sources, or a series of allegedly leaked documents. Instead, what you're doing is, you're taking all this stuff that's already out there, you're saying, actually, we don't need additional information. Instead, we've got all this open data, we can combine them in this way, and we can prove this to be true. And *you* can do this too. And you can follow it through in the same way that a scientific experiment and a scientific paper must have

reproducibility. This also should be reproducible. Anyone can do it. Anyone can check it. There's no trust that's needed. It stands on its own. And I think in many ways, this is probably the core part of why this is so important. And why this could be so much of a paradigm shift for journalism.

- Max

This quote came from a participant with some background in journalism, which may indicate why they were able to make such a poignant remark comparing journalism and OSINT. Other participants appeared to have less investment in the future of media.

Collaboration

Though all participants saw media uptake of OSINT as a positive idea, views on one's collaboration with journalists vastly differed. Though there were exceptions, the desire to collaborate appeared to align with participants' desire for anonymity and/or their trust or respect for media.

I try not to collaborate with media most of the time. Why? Because most media will lack context ... in open source intelligence, it's an entire process. It's based upon a methodology research question, proper analysis. In my experience, most media outlets will lack the analysis part because they always want to bring the news to scoop now.

- Dean

Apart from two participants who sought to be journalists themselves, participants wanted to keep a barrier between their work and the media. For some, that meant anonymity, for others that meant only sharing their OSINT work on a professional social media account, for example LinkedIn. For the majority, it meant they were supportive of the OSINT organisations they volunteered for to collaborate with them media, but that they did not want to be the face of it.

Hannah, a participant working for the Centre for Information Resilience (CFIR), said that while happy to not be involved in direct media, the participant supported the operations within the organisation which facilitated media collaboration alongside the Business Development team. These would sometimes be in the form of reports released, which get media engagement, or through exclusive partnerships. For the organisation, she said, successful media collaborations help with "visibility" and therefore future funding, financially supporting future investigations.

And while the participant supported such motivations, they were not personally motivated to share work with the media, even though this participant writes a regular blog. As mentioned previously, while she recognises “[journalists] can’t print the full report”, she feels they miss key steps in an investigation.

The main reasons for participants not directly reaching out to the media was because of the desire for anonymity, the belief that most media organisations which miss out significant detail from the OSINT investigation, and that they felt their own time was better spent conducting OSINT. When asked their thoughts on why more media organisations do not collaborate directly with the OSINT community, they referred to the resourcing available, the lack of understanding of OSINT, and the difficulties they thought newsrooms faced with innovating at pace.

A lot of these editors perhaps are a little bit too old to really understand these things, or too rigid, or simply just like, I mean, newsrooms these days are so hollowed out by like budget cuts, etc ... So the idea that they can try to transform the way they're doing journalism is maybe dreaming a little bit too big for them.

- Max

As mentioned previously, trust levels are positively related to participants’ experience in the media industry, and therefore those with journalism experience were much more eager to collaborate with media. The two participants who had done this did so through writing blogs, directly pitching stories to newsrooms, or building a strong social media following in which they would occasionally be approached.

OSINT and Future Impact

Participants were asked how they thought OSINT might influence journalism or the media industry in the future. They were generally optimistic towards both OSINT and journalism itself, and there was mention of how their involvement has given them a means of engaging with current affairs today. They highlighted how attitudes towards OSINT have improved as a result of productive analysis work that has been achieved during the war in Ukraine, as well as other long-term projects such as those covered in the background section of this thesis.

I think that we're in a very interesting place where [media] are realising the value of open-source intelligence. And that traditional journalism actually lacks in these types of

skills when they approach a story from a traditional journalism perspective. And there is just so much to contribute to that.

- Yana

No participants mentioned a desire to directly be employed by a news organisation but participants did want to see budgets allocated towards verifying the information they released, and to recognise that doing so is a “skill set”. Dean, the participant experienced in training organisations in OSINT, referred to the OSINT team hired by a Dutch national broadcaster NOS (Nederlandse Omroep Stichting) as an example of successful future collaboration. The team has their own OSINT analysts now, and much of their work is conducted through collaboration on the platform Telegram, where both local and national investigations are conducted. Dean said:

“[They are] dedicated to doing open source on Telegram ... they work as a group together with the community to try and verify certain more crimes or locations.”

Finally, participants were asked how they think OSINT and media should or could work together in future. They differentiated between the purposes of the two, generally referring to journalism as existing to hold authority to account and to share stories regarding the world we live in; they referred to OSINT as existing to prove and verify events occurred using easily available data, the findings of which anyone could therefore replicate. Citizen OSINT analysts demonstrated value in both, terms of both empowering audiences and in facilitating more investigative journalism:

I would break down journalism into two key things it's trying to do. The first is to share information. And the second is to make people feel something or to make people care about something. And I think open-source intelligence fulfils this first requirement very well, but it does not do the second. So, I think there will always be room for more human-focused journalism or on the ground, like interviewing individuals, photography, videography, etc, people creating stories. Making you feel something, this is hugely important, and this is going to continue. But I could see open-source intelligence, open-source investigations, replacing the information part in the longer-term or at least having a very high prevalence there. But I can't see it, supplanting the rest.

- Max

Self-Described Motivations

While the previous sections have outlined some motivations already, as well as how citizen OSINT analysts are already collaborating with media, the following findings are participants' self-described motivations, beginning to highlighting emerging trends from all three sections.

Enjoyment and Development

Participants referenced hobbies or satisfying curiosity as their reason for being a part of the OSINT community. They talked about how much they had learned through their volunteering and the community they had been able to build, as highlighted earlier. While expressing discomfort, either visually or verbally, with describing their work in joyful terms when the topic was clearly disturbing, more than half of participants referenced either the “thrill” of following a lead, the joy of playing the “game”, or their favourite detective character from their childhood when talking about the OSINT contributions; four participants referred to Sherlock Holmes during their interviews. Hannah said:

“I feel like for some people, this is a bit of a chase a bit of, I don't want to say game, but it's kind of like an adrenaline kind of rush into finding, following the tracks.”

For those with specific niche interests, they felt OSINT analysis gave them the means to use their hobby. Whether it was an interest in planes or satellites, military or investigations.

pretty much everyone interested in the military will be interested in open source intelligence ... This is your hobby. You love reading about these weapons and the systems and you know, bringing manuals, and then you see it being used for real.

- Quentin

For those with children, participants were asked to explain how they described their work to their children. All participants with children described their work as either a puzzle or a game to them, never referencing the full detail or the crimes that their work related to. Dean said:

[I tell my children] I'm trying to keep the world a safer place by finding pieces of a puzzle ... the internet consists of millions and millions of different puzzles. And I need to find the pieces of my puzzle for every new case. And with that, you need to manipulate the internet. That's what I tell them - the Internet and computers are stupid, so you need to exactly tell them what you are interested in.

While all participants referenced the gamification of OSINT, they dismissed any reference to comparing their work to a game when talking about an investigation or topic they had worked on that disturbed them. For example, Tim from Finland, which has been repeatedly under threat from Russia, discussed his work with Bellingcat during the Russia-Ukraine war:

It feels more life and death to me than a game. Even though I understand that it is like a game ... But to me, I don't feel like it's a game at all, because all of my friends, for example, have gone through the refresher [soldier training] now. And all of my friends have been vocal about trying to get back into shape so that they can fight the incoming war. And everyone is like, everyone thinks that yeah, we're going to be next.

- Tim

In addition to satisfying curiosity, some referenced the enjoyment which came as a result of learning and upskilling. They compared it to the satisfaction they get from learning any other skills or that which comes from reading non-fiction, watching documentaries, or enjoying a niche magazine, all of which they enjoyed for the sake of learning. Again, this demonstrates SDT and the motivation which can come from improving competence in a field.

Correcting Misinformation

Concerns about misinformation were raised by all participants, with particular concerns about hearing friends or family speak about events with either incorrect information to hand, or a lack of knowledge regarding the background. They discussed how being able to show the individual steps of their findings, or the findings other media outlets had declared, gave them a way to have less emotional conversations with friends and family about factual information. As Quentin said:

“I'd say it's more of a personal motivation to try and actually keep people I know, informed and then work on people online, because they're slightly bigger stakes of how quickly things can spread.”

Those committed to correcting misinformation about the war in Ukraine were concerned about the impact of misinformation from both sides. Participant Quentin highlighted an example during the early weeks of the war, where Twitter users claimed that egg cartons were being used as armour on Russian tanks instead of the explosive and reactive armour they are supposed to have. This was proven false, but only by those such as Quentin, who had subject-specific knowledge and knew that the ‘egg carton’ appearance was typical for the type of chemical container attached to such tanks.

Unless you had that specific reference, people will just immediately go to mock the Russian army, which is fairly understandable. But at the same time, that's still misinformation doesn't matter what side it is. And it can be damaging as well because you're downplaying the actual successes with Ukraine as well.

- Quentin

Participants sometimes doubted the material they read in the news during the Russia-Ukraine war when significant disinformation was shared from individuals on both sides.

You have an environment where people on both sides are trying to distort things one way or another. And you have to really just make sure you're checking everything. Make sure that you're not falling victim to wanting a certain conclusion to be true when you start the investigation.

- Max

Activism, Advocacy and Justice

All participants were asked whether they saw themselves as activists, and the responses varied depending on the cases, or the potential cause, they were working on. Participants saw the term 'activist' as requiring them to be partial, outspoken, and even out protesting on the street but their motives to conduct OSINT still often aligned with that of an activist journalist. For example, Anya, whose work is primarily verifying footage in Ukraine, said her reason for not being an activist, "out protesting", was that she was pregnant; this is not a reason for not being an activist, merely a difference of definition of what is required of an activist.

As mentioned at the start of this chapter, participants primarily saw themselves as analysts but the term 'advocate' resonated with participants more so than 'activist'. The term advocate seemed to fit self-perceptions because participants felt they were exposing stories and correcting misinformation on those who were not in a position to speak up for themselves, whether it was for child victims of exploitation, citizens in Ukraine, or otherwise. When their focus has been so much on verifying information or correcting misinformation, the 'activist' term appeared to clash.

I feel like a lot of that is me validating what people are going through because the media is picking out this, this Bucha, Mariupol, the big cities, the big dramas, but there's a lot of very small towns that were destroyed, and no one is noticing them ... It needs someone to say 'I see you, I'm trying to help you from here on my chair in Scotland. I'm trying to analyse it. So at some point, maybe in the future, there'll be some accountability ... It's just a bit of justice, I think, the hope for justice.

- Hannah

Purpose and Benevolence

A number of participants felt disturbed by the material they were seeing come out of the invasion in Ukraine, and while they remained deeply interested, they found it disempowering watching the news and much of it distressing when there was little they could do to support those on the ground. For those with personal connections to Ukraine, their contributions gave them a means of 'coping' with the situation at hand, by finding a productive purpose.

I think that I explored many ways to cope. You just see the world move on ... I just feel like I'm one of these Ukrainians that I just don't really know how to move on from this. So for me, it was just really a way to, to cope with a situation, that I know that I'm still doing something, that I have not moved on.

- Yana

Due to hearing difficulties, Tim - the participant in Finland who referenced his friends who are re-training for the army - is unable to join the army and as such, described feeling "useless" during the invasion of Ukraine, before participating in OSINT. Additionally, Yana and Hannah described their efforts as a means of "coping".

Some also knew they had the skills to offer useful insight, and felt they had a duty to support.

I feel like I needed to come to my own personal conclusions ... in these periods, where all of a sudden you have a skill, it's very useful, and could be helpful or could be at least useful, then I feel like in these times, in some ways, we have an obligation to help.

- Max

Influence and Anonymity

Much of the OSINT community, and even much of the OSINT training available, advocate for anonymity online – reasoning that it is to protect analysts’ privacy during sensitive investigations. The term ‘sock puppet’ is often used in training courses to refer to the alternative ‘identity’ created online while being an analyst seeking open-source information.

In response to what participants were seeking when sharing findings online, responses indicate more of an interest in informing friends and family than becoming a particularly recognisable name in the OSINT community, so much so that half of the participants did operate anonymously, or somewhat anonymously, i.e. some were willing to share their name and details with me but others would only speak entirely anonymously over an encrypted phone call.

The reasons for anonymity amongst the participants were primarily related to concerns surrounding safety and conflicts of interest with the individuals’ day jobs. But the responses also varied depending on location, the privacy rights in that location, potential repercussions, and previous experiences of online harassment. A lack of confidence also seemed to be a reason for anonymity for two participants.

I don't really like to share the work that I do. A lot of stuff that I do is more private, or with a very trustworthy group of friends ... If we're doing an identification project, you'd never want to think that you're right and then be wrong in that kind of situation. That's one of the scariest bits for me about OSINT work and doing it kind of like in a public scene is thinking that you're 100% correct.

- Jamie

Hannah, who is supporting an investigation into events in Afghanistan but is based in the UK, does not stay anonymous as she feels “the chances the Taliban are coming to knock on my door” are low. But she reflects on the experiences of a colleague, where repercussions for holding individuals to account, especially publicly, are higher. She says:

“I think a lot of it, is fear of repercussions. I have someone in my team that is originally from Ukraine, and she has family in Ukraine. So it wouldn't take long for someone to track down her family, for example.”

Location influenced participants' concerns about their privacy and therefore, their likelihood of being anonymous. Yana, based in Germany, claims she felt more confident in having certain information about her available online due to the privacy rights she has in her country. She says,

“More than anyone in the US, for example, where you can find personal information very easily. So, first of all, of course, I feel protected.”

All three women were careful about their online identities, choosing only to share parts of their work online, which benefitted their careers, and not disclosing any personal information such as their place of work. Of the three women interviewed, one had a history of being aggressively stalked, and the other two had been repeatedly harassed online repeatedly. None of the male participants shared such experiences.

While all of the participants were cautious about their personal information being shared online, those who were not anonymous did not think the reasons for being anonymous were always reasonable; they either advocated for ‘owning’ one’s work and sharing it with the community, or they do not believe it is possible to completely anonymise yourself online anymore:

I think the idea that keeping this information private or in limited scopes, is against the ethos of open-source intelligence, I think if you find something, make it public, make your proof public, and invite criticism, see if other people agree. And the way that you can make your investigation stronger is with more people looking at it.

- Max

“I’ve been playing this game for so long that I know that it simply makes no sense to try and hide. You’ll only make yourself more interesting for people like me to figure out who you are.”

- Dean

For those working in certain fields, such as journalism or consultancy, promoting their identity alongside their work gave them credibility, and they were very open about their identities. They felt it made them more trustworthy and that their online identities acted as a “portfolio” for future jobs.

The next chapter will analyse and discuss these results.

Discussion and Analysis

This chapter, reflecting on both the literature review and theoretical frameworks, will discuss the results in relation to the research questions; the thesis aimed to examine how citizen OSINT analysts contribute to investigations, and if this involves collaboration with media, and what the motivations are for citizens to volunteer their time to such work. Following a discussion on these questions, the chapter will reflect on the research process and suggestions for future research.

Collaboration on investigations

This research supports the findings from Graves (2018) and Müller and Wiik (2021), indicating that collaboration is a principle of OSINT. Participants all recognised the time demand on verifying small amounts of data, the need to have more than one person verifying such data, and the benefits which come with putting your findings out in public and accepting scrutiny. Though some people did this anonymously, they still valued the process. In addition, the participants valued being a part of a collaborative group, be it an OSINT organisation such as Bellingcat, or the Centre for Information Resilience, or otherwise.

The participants were open about the processes in terms of how they collaborated and organisations, including explaining the processes of how they might verify the location of a piece of data and how large numbers of volunteers are contributing to projects like the Global Authentication Project covering incidences in Ukraine. This demonstrates the commitment the community has to skill sharing and building expertise, and an early demonstration of how self-determination theory may support the motivations of such individuals (Lewis & Usher, 2013; Müller & Wiik, 2021; Ryan & Deci, 2020).

The value of the citizen or the ‘ordinary’ was clear in the findings, with specific examples reflecting how the benefits of the citizen journalist compare to the value of the ‘citizen’ OSINT analyst. Local insight, such as Yana’s insight on the cartoon character, would have been unlikely to have proved useful in such an instance for anyone not from Ukraine; while a foreign analyst may have been able to spot the cartoon character, they may not have immediately recognised it as belonging to a specific location. As Meadows (2013) highlights, understanding these processes will improve our understanding of OSINT and how it can contribute to journalism, rather than gathering quantitative data on work.

While the literature suggests that collaborative journalism may be market-driven, the findings suggest that, at least from the participants’ perspective, this work is societally driven (Banks &

Humphreys, 2008). Individuals are not being exploited, rather, they are using skills and their own desire to learn and improve to contribute to a greater purpose – be it injustice, tackling misinformation, or holding war criminals to account. The participants in this research did not appear to be motivated by their doubts in mainstream media, but instead want to correct the mindsets of those who do have doubts about current events, or even to settle their own doubts. Their motivations were not to significantly highlight the shortfalls of media or authority, and they did not take a particularly censorious view of authorities' work. Even when they did perceive media to be lacking, their core motivations were still down to a desire to uphold democracy and do good.

Working with the media

Based on the motivations and behaviours of the interviewed citizen OSINT analysts, their work appears to be the best of both participatory journalism and citizen journalism; the individuals can use their specific knowledge, background, and diverse cultural experiences to influence investigations but recognising that they are not journalists, they are generally able to hand the role of a narrative to the media organisations. Where there may be a need to give an individual or organisation the right to reply, a journalist can interview those individuals, seek other sources, and, under laws such as freedom of information requests, journalists can ensure a story is told.

Rather than an issue with trust in journalists, there was scepticism of their ability to conduct investigations to a thorough standard due to resourcing issues and the demand for fresh content. While participants hoped their work would positively influence accurate journalism, there was agreement that there is still a need for the professional storytelling element of journalism – from the human angle (Müller & Wiik, 2021). Distinct from Müller & Wiik's (2021) work however is that this is being recognised by the 'ordinary' citizen and not professionals; individuals who are neither trained in journalism nor have the extensive experience of those professionally working in the OSINT field, can articulate the benefits of OSINT to journalism and vice-versa.

Recognising their specific role of verifying information and seeking the truth on a piece of data, the citizen OSINT analyst appears to recognise that their contribution is not the whole story – that by sharing such content on social media, they welcome criticism and alternative viewpoints, they are not seeking to go viral online and they share extensive detail on how they have come to the conclusion they have; something which allows others, however divided their views may be, to follow the investigatory trail. It empowers the audience and enables the citizen OSINT analyst

to contribute to something that they care about, a key feature of motivation according to self-determination theory (Ryan & Deci, 2020).

Motivations

This thesis highlights that, while motivation is complicated and multifaceted, the motivations of the citizens involved in OSINT analysis are implicit. There was no indication of external expectations or pressure; in fact, many chose to do their work anonymously.

The results support SDT as a motivational theory, but it is important to note that tendencies required as part of SDT are not automatic (Ryan & Deci, 2020). Therefore there needs to be an environment where autonomy, competence and connection are fostered; there are issues likely to impede OSINT's development if they aren't addressed, namely volunteer management, and maintaining the OSINT community as autonomous as it currently is. It is unclear how the growth of think tanks and organisations doing their own OSINT work could impact the citizen community here, and there was recognition amongst the participants that there are already similar projects happening in parallel. This could be seen as either inefficient use of people's time, or it could also be seen as a secondary verification process taking place; it is more likely that the information is correct if two separate intelligence teams have come to the same conclusion, but this needs to be made clear to maintain peoples' motivation as doing something worthwhile. In self-determination theory, this would be a part of contributing to something one cares about, although one's likelihood of caring about something will diminish if participants feel work is needlessly replicated elsewhere.

The relatedness need, as referred to in SDT, has been impacted by Covid-19, following two years of social distancing and repeat lockdowns globally, which could have influenced the increase in citizen OSINT activity, making the invasion of Ukraine almost a 'last straw' for those who felt compelled to do something about the global situation they find themselves in. Considering the other needs of OSINT analysts, beyond relatedness or doing something to demonstrate care for others, they also need to develop their skill set consistently, and their work is entirely dependent on them acting with autonomy. Again, evidence of SDT underpinning their motivations.

This research has demonstrated that OSINT analysts advocate for their field more than are activists of a particular cause. According to SDT, people want to reach mastery of a skill and direct their own work; OSINT analysis provides this, and there is a clear purpose for all the

investigations offered in this research. As per SDT, they are motivated by autonomy, connection, and a desire to upskill and learn more about their field. While not a requirement of SDT, the participants also indicate motivation led by justice or the belief that they should do what is 'right'. As such, some participants recognised their active efforts to 'advocate' for individuals in Ukraine, for the rights of protestors to be safe, or for more awareness of climate change to be raised.

Similarly to Müller and Wiik (2021), who only interviewed those in paid roles with OSINT investigatory organisations, citizens are motivated by the opportunity to fulfil curiosity and open the 'gates' to free collaboration. But motives differed in that they were conducting this work for the joy of learning and upskilling and to address injustice and social difficulties such as misinformation. More professions are likely to contribute to this field in future; for example, the product designer had a skillset which proved particularly useful in managing the collaboration of many volunteers and vast amounts of information – she found her work volunteering for Bellingcat as significantly more satisfying than her 'day job'. She perceived her citizen OSINT analysis work to be her most purposeful work.

The results of this study can be widely applied outside of OSINT work related to the Russia-Ukraine war. While it is a highly relevant topic for OSINT analysts today and, for some, the perceived injustice is a significant motivator to do such work; the community is not exclusively focused on this work. Due to the variety of investigations the participants were involved in, the theme of injustice appears to be more of a motivator than any specifically anti-Russian or anti-war feelings.

Until now, the literature failed to understand what motivates the citizen OSINT analyst who spends a significant period analysing a small piece of data compared to the usually known 'citizen journalist' (Min, 2016; Sheen et al., 2021). We now know more about how they share findings and how they collaborate with the media and if this is even intentional; the motive to share findings online appears to be born out of a desire for scrutiny and truth, rather than a desire for 'likes' or popularity as critics have implied (Meadows, 2013). It has not looked at the benefits of this 'ordinary' analyst, who often does their work at a weekend, quite differently from a government analyst, a journalist, or military intelligence. This citizen OSINT analyst has perhaps found a way to unlock the knowledge of the eager hobbyist who knows everything there is to know about Russian military weapons, the Ukrainian who never thought her knowledge of a cartoon would help verify a potential war crime or the passionate young person who, instead of

being groomed by extremists online, may have found a purposeful avenue to direct their passion and social media sleuthing skills.

Challenges and Future Research

While conducting this research, the crossover between participatory, citizen, and activist journalism proved a challenge to contend with. OSINT analysis is not journalism, but the application to these theories is clear once one hears the behaviours and motivations of the participants. Personally, I was surprised by the extent to which participants' language focussed on truth over activism. While I expected those working on footage in Ukraine to want to document their findings for the history book, I was surprised to hear the language focussed almost exclusively on ensuring the right data was documented rather than a desire to see repercussions for those committing criminal offences. There was of course a strong justice motivator, but not to the extent I expected, and this is potentially a result of the concerns around misinformation in which we live in today.

This research could have been more focussed if I interviewed OSINT analysis exclusively focused on Ukraine, but in such early days of the conflict, gathering insight on this specific conflict alone may have quickly been outdated. I had concerns regarding the one-sided nature of those I would have interviewed – and by only seeking those who were conducting OSINT on Ukraine, it would have proved challenging to find OSINT analysts motivated by some view of injustice for Russia. Therefore it seemed more insightful to interview those with a variety of interests and thus motivations which would be more applicable across the entire citizen OSINT community. Future research must consider the behaviour which has come to light during 2022 though, of individuals all over the globe seeking to verify and document the traumatic events unfolding. Additionally, research into non-English speaking OSINT analysts would be useful.

The research highlights the relationship from the citizens' perspectives and how this relationship could be fostered to improve future open-source investigative work between citizens and journalists. Future research could involve interviews with journalists and media producers, seeking the barriers to collaborating with OSINT analysts, the challenge to using OSINT techniques within today's newsrooms, and how they think media is changing in terms of the citizens' involvement. No longer restricted to just sharing first-hand accounts, the citizen has more opportunity than ever to follow the path of the investigated or, indeed, to be the investigator.

There is significant knowledge to be gained in this area, specifically, how media organisations and journalists work with citizen OSINT analysts, from the journalists' perspective, and how the increased hire of 'OSINT analysts' and 'fact-checkers' in newsrooms is impacting the newsroom and the dynamic of the OSINT community. Of interest would be to compare the motivations of these individuals with the motivations of others who critique content online and dispute 'facts' while failing to do anything about it. Is it a matter of not having the skills to verify information? Or is it an inherent difference in the belief of being able to do something about it?

Conclusion

The findings from this research contribute to discovering how we better motivate tomorrow's citizens and how we make individuals active fighters against mis- and disinformation. It showed that there are multiple motivations at any one time when carrying out an activity, but that, at least for the citizen OSINT analyst, the desire was to see greater transparency and a more just society. With no strong indicators of vengeance and a reluctance to be referred to as activists, the analysts saw themselves as advocates of truth and transparency. Ultimately, journalism stands to benefit from active participation and more reader engagement.

The participants in this study believed their work could improve journalism in future and that, through analytical investigations such as theirs, journalism and perceptions of journalistic work could be improved in future. Much research could be done in this area and, amid the challenges of this work, particularly during an unfolding war, empirical evidence of the power of the 'ordinary' citizen should be documented.

For those who do not have the inclination to contribute to journalism in such an active way, this research may be an avenue for encouraging funding for independent investigative news, through subscribers or crowdfunding, for example. Maybe if the work between OSINT analysts and media organisations is promoted, then readers will subscribe to those organisations conducting strong investigative work, and therefore we will see more investigative journalism in future – journalism which can document its processes and its intelligence to regain the trust of today's sceptic audiences.

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Appendices

Appendix 1: Interview Guide

The following questions provided a framework for the semi-structured interviews:

What do you do for a living?

Can you tell me a bit about your background?

What skills do you have which are valued by [investigative or media organisation]?

What sort of OSINT work have you conducted? And please could you go through how this work was done in detail?

How have you contributed to an investigative news story?

How do you support [organisation]'s other work if you work with one?

Why do/did you choose to support [organisation]'s work?

How did this relationship come about?

What role do you consider yourself to be in – is 'OSINT analyst' how you see yourself or is there any other title?

How much time do you spend on this work?

How do you think the organisation you work for benefits from your work? How?

Do you think the media and the OSINT community should collaborate further? How?

Appendix 2a: Information Letter to Participants

This research project is part of my MA in International Journalism thesis at Södertörn University in Sweden. As a former journalist and intelligence analyst, I am fascinated by open-source intelligence, particularly in relation to how individuals from any background can contribute to such investigations. My study will look at how OSINT analysts work with the media and, specifically, the motivations behind those who voluntarily contribute to this work.

I am conducting qualitative research through one-to-one interviews with individuals such as yourself. Regarding the publication of the findings and your information, I intend to only use first names, alongside brief details of your contributions, your day job, and your country of residence.

If you are happy to participate, please read the appended information and consent form carefully and then reply to this email with the following text:

I confirm that I have read the information and consent form appended to an email to me on [date], 2022. I understand how my personal data will be processed. I am aware that my participation is entirely voluntary and that I can withdraw from participation in the study without providing a reason. Through this email, I provide my consent to my personal data being processed as part of Josie Cochrane's Masters of International Journalism thesis.

My availability for us to do the interview over Zoom is very flexible - if you could let me know an evening, or early morning any day of the week, which works for you, I will do my best to be available.

Thank you so much for your support.

Best,

Josie Cochrane

Södertörn University | Masters of International Journalism

+xx xx xxx xxx (WhatsApp / Signal)

Appendix 2b: Information and Consent Form

Consent to processing personal data in student projects at Södertörn University

I consent to Södertörn University processing the following personal data in the Josie Cochrane student project, in accordance with the description below.

What personal data will be processed?

- name
- telephone number
- country of residence
- occupation and voluntary work
- email address

What is the purpose of processing this personal data?

The study is designed to assess the motivations of OSINT analysts who volunteer their time to contribute to journalistic work.

What is the legal basis for processing personal data?

Personal data is processed with **your explicit consent**. Participation in the study is entirely voluntary. You may recall your consent at any time without stating a reason. There will be no negative consequences if you do not consent to the processing of your personal data.

Storage and security: A recording and transcript of the interview will be stored on a OneDrive, affiliated with Södertörn University, and following all security measures as per Södertörn University's storage policies. The recording will be deleted as soon as the transcript is written.

Storage period and deletion: Personal data will be deleted once the thesis is graded and complete.

Transfer of personal data to a third party: Personal data will not be transferred to any third party, though first name, occupation and country of residence will be published as part of the thesis.

Transfers outside the EU: The research student is currently based in New Zealand so that all data will be accessible from New Zealand through the Södertörn University OneDrive account.

What are my rights?

According to the EU's General Data Protection Regulation (GDPR), you are entitled to know what elements of your data are being processed. You are also entitled to have this corrected if it is incorrect. You may also request to have it erased or limit its use or object to the processing of personal data. You are also entitled to data portability, i.e., the right to transfer personal data from one controller (the party legally responsible for processing) to another without being prevented from doing so. You may recall your consent at any time, without stating a reason.

Who do I contact if my data is wrong or if I want to withdraw my consent?

If you need to have incorrect information corrected, add missing information (correction), or withdraw your consent (recall) you should contact the student and/or their supervisor (see contact details below). You can also contact Södertörn University's data protection officer via dataskydd@sh.se.

Data controller: Södertörn University is legally responsible for how the student processes personal data in their essay/project. You can always contact Södertörn University via e-mail: registrator@sh.se or by calling +46 (0)8 608 4000.

Data protection officer: If you have questions or complaints about how your personal data is processed, you can contact Södertörn University's data protection officer.

Complaints: If you are unhappy with how the university has processed your personal data, you can submit a complaint to the Swedish Data Protection Authority. You can contact them by emailing datainspektionen@datainspektionen.se or calling them on +46 (0)8 657 6100.

Contact details for the student(s) and supervisor:

Name of course, academic school.

Supervisor: Walid Al-Saqaf walid.al-saqaf@sh.se

Student: Josie Cochrane, xxx@suni.se

Appendix 3: Themes and indicators

Themes and examples of indicators

| Themes | Indicators |
|--|---|
| Perceptions of OSINT | |
| 1. Descriptions of volunteer OSINT work | Self-described descriptions of OSINT work, its future direction and the skills required. i.e., <i>“I was analysing a bombing yesterday.... And then I cannot write about how the Taliban are horrible, they are bad. I can only put the facts down that someone else can interpret when they are reading.”</i> |
| 2. Examples of OSINT investigations participants have been involved in | Descriptions of investigations and operations the participations have personally been involved in. i.e., <i>“the director mentioned how there were people on the ground in Ukraine, using the map that we've created with all these instances, to know, you know how to get safe, because they were they were on the route. They're trying to get to safety. And they were like seeing on the map where the Russians were because we're tracking military movements as well.”</i> |
| 3. Perceptions of OSINT community operations | References to belonging, to community spirit, or to the challenges of managing such a large group of volunteers. i.e., <i>“And I think that maybe some people find their sense of belonging there in this in these communities”</i> |
| 4. OSINT work which inspires them | Examples of the work or individuals which inspired them to join in OSINT work such as references to Bellingcat’s well-recognised MH17 investigation. |

| | |
|--|---|
| 5. The difficulties of OSINT work | Mental health challenges, exposure to violent/disturbing content, the time investment required. |
| Views of media and authority | |
| 1. Perceptions of accuracy in media and journalism | Comparing the ‘scientific’ nature of OSINT with investigative journalism, comparing OSINT and journalism, and references to newsrooms’ commitment to truth and accountability. |
| 2. Trust in government and/or state agencies | Reference to being anti-government, anti-police, or reference to perceptions of state agencies. Includes participants’ references to having worked for state/government. i.e., <i>“I’m pretty anti cop myself, just a case of living in America.”</i> |
| 3. Desire to work with media | Experiences of collaborating with the media and reflections on such work, and/or descriptions of wanting to collaborate with journalists, or not. |
| 4. Involvement in activism or advocacy work | Responses to whether a participant sees themselves as an activist or not, as well as indicators of advocacy work. |
| Self-described motivations and desires | |
| 1. Curiosity for the sake of knowledge | Referring to want to be a ‘detective’ or having avid curiosity in the world. |
| 2. To upskill / career progression | Reference to desire to get a job in the field, to upskill |
| 3. Desire to influence | Influencing friends, family or on social media i.e. <i>“I’m able to at least spread some light and give people information that wasn’t there and was not readily available.”</i> |
| 4. Seeking recognition | Referring to praise or public acknowledgement of one’s work, wanting a public name instead of anonymity |

| | |
|--|---|
| 5. Desire to advocate | Referencing the concern for parties involved or the need to ‘verify’ others’ experiences i.e. “I see you; I’m trying to help you from here on my chair in Scotland, but I’m trying to analyse it. So, at some point, maybe in the future, there’ll be some accountability.” |
| 6. Desire for privacy | Discussions from those seeking anonymity, or not, and why |
| 7. Righting ‘wrongs’ and fact-checking | Concerns for fake news and misinformation and wanting to right wrongs |
| 8. A means of purpose | References to not knowing what else to do during wartime, to needing purpose, or struggling with “just” watching news – needing a means of coping. Also, includes references to applying career skills to a ‘meaningful’ cause. |
| 9. Enjoyment and fun | References to a hobby, game, or puzzle |