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Robin Pierro

A Double-Edged Sword: Benefits and Recommendations for Using Information and Communication Technology to Monitor or Investigate Human Rights

European Master's Programme
in Human Rights and Democratisation



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EIUC gracefully acknowledges
the contribution of the European
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FOREWORD

The *European Master's Programme in Human Rights and Democratisation* (EMA) was launched in 1997 as a joint initiative of universities in all EU Member States with support from the European Commission. The aim from the outset was to prepare young professionals to respond to the requirements and challenges of work in international organisations, field operations, governmental and non-governmental bodies, and academia. As a measure of its success, EMA soon came to serve as a model of inspiration for the establishment of other EU-sponsored regional master's programmes in the area of human rights and democratisation in different parts of the world. Since 2013 these are all connected and managed by the *European Inter-University Centre for Human Rights and Democratisation* (EIUC) in the framework of the *Global Campus of Human Rights*.

EMA is a one-year intensive master's degree devoted to the study of human rights and democratisation. Based on an action- and policy-oriented approach to learning, it combines legal, political, historical, anthropological, and philosophical perspectives with targeted skill-building activities. The interdisciplinarity and wide-ranging scope of EMA is testimony to the benefits of European inter-university cooperation and reflects the indivisible links between human rights, democracy, peace and development.

90 students are admitted to the EMA programme each year. During the first semester in Venice, students have the opportunity to meet and learn from leading academics, experts and representatives of international and non-governmental organisations. During the second semester, they relocate to one of the 41 *participating universities* to

follow additional courses in an area of specialisation of their own choice and to write their thesis under the supervision of the EMA Director or other academic staff. After successfully passing exams and completing a master's thesis, students are awarded the *European Master's Degree in Human Rights and Democratisation*, which is jointly conferred by a group of EMA universities.

Each year the EMA Council of Directors selects five theses, which stand out not only for their formal academic qualities but also for the originality of topic, innovative character of methodology and approach, and potential usefulness in raising awareness about neglected issues and capacity for contributing to the promotion of the values underlying human rights and democracy.

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- Pierro, Robin, *A double-edged sword: benefits, challenges and recommendations for using information and communication technology to monitor or investigate human rights*, Supervisor: Prof. Paolo De Stefani, University of Padua

Like past editions, the selected theses demonstrate the richness and diversity of the EMA programme and the outstanding quality of the work performed by its students. On behalf of the Governing Bodies of EIUC and EMA and of all participating universities, we congratulate the authors.

Prof. Manfred Nowak
EIUC Secretary General

Prof. Ria Wolleswinkel
EMA Chairperson

Prof. George Ulrich
EMA Programme Director

This publication includes the thesis *A double-edged sword: benefits, challenges and recommendations for using information and communication technology to monitor or investigate human rights* by Robin Pierro, and supervised by Prof. Paolo De Stefani, University of Padua

BIOGRAPHY

Robin Pierro is a human rights and communications specialist from Toronto, Canada. Prior to completing her E.MA Robin worked as the Senior Program Manager with Journalists for Human Rights, overseeing large-scale media development projects in conflict and post-conflict countries. Robin has also worked as a journalist, journalism trainer and documentary filmmaker in various countries around the globe. Her work has brought light to pressing human rights issues and has ensured authorities are held to account.

ABSTRACT

Human rights monitors and investigators have developed rigorous research methodologies to ensure the data they collect is reliable, accurate, and holds human rights abusers accountable. These methods have changed little over time, until recently through the proliferation of Information and Communication Technology (ICT). Researchers are increasingly relying on ICT tools to collect information, connect with sources, and further their access.

While these tools present numerous benefits, they also pose practical and ethical challenges to the researchers utilising them. ICT tools are now a double-edged sword in the fact-finders' toolbox, and they are changing the way research is conducted. Given this evolution, there is a need for the human rights documentation community to develop standards on how to utilise ICT tools effectively and ethically.

This thesis highlights the benefits and challenges posed by using ICT tools for fact-finding and fills the gap in practical guidance for researchers by providing recommendations for best practice. Additionally, this work examines the impact ICT tools are having on traditional research methods.

The author relied primarily on research derived from 33 interviews and a survey with 66 human rights researchers, to ensure that the expertise of the practitioners themselves was featured and this thesis remained practical and relevant.

ROBIN PIERRO

A DOUBLE-EDGED SWORD:
BENEFITS, CHALLENGES AND RECOMMENDATIONS
FOR USING INFORMATION AND COMMUNICATION
TECHNOLOGY TO MONITOR OR INVESTIGATE
HUMAN RIGHTS

ACKNOWLEDGEMENTS

First, I'd like to thank my family and friends, who encouraged me to return to university to complete my MA. It's thanks to this encouragement that I took a break from my career and seized the opportunity to further my skills and experience in human rights and democratisation. I'm grateful for the knowledge I've gained and the opportunity I now have to advance my career. Second, I'd like to thank Paolo Stefani, for his supervision and support throughout the thesis writing process. His feedback in our meetings, phone calls, and emails has contributed to a final product I'm proud of. Third, I'd like to thank the human rights researchers and experts I interviewed or surveyed while conducting my research. I'm beyond grateful for the time, support, and input they've made to this thesis, and I hope the final product can, in turn, support their work. Finally, I'd like to thank Lesley Forbes Whitmore, who made the final phase of writing this thesis a true pleasure with her company, laughter and damn-good cups of tea; thank you for welcoming me into your beautiful home and for always remembering the Jaffa Cakes.

TABLE OF ABBREVIATIONS

AAAS	American Association for the Advancement of Science
AI	Amnesty International
CAR	Central African Republic
CGM	Citizen-Generated Media
COI	Commission of Inquiry
COO	Chief Operating Officer
DRC	Democratic Republic of the Congo
GIS	Geographic Information Systems
GPS	Global Positioning System
GT	Geospatial Technology
HRC	Human Rights Council
HRO	Human Rights Organisation
HRW	Human Rights Watch
ICC	International Criminal Court
ICT	Information and Communication Technology
IDF	Israeli Defence Force
IFES	International Federation of Elections Systems
IGO	Intergovernmental Organization
IHL	International Humanitarian Law
IHRL	International Human Rights Law
INGO	International Non-Governmental Organization
LGBT	Lesbian, Gay, Bisexual and transgender
LRA	Lord's Resistance Army
METS	Methodology, Education and Training Section
NGO	Non-Governmental Organisation
OHCHR	Office of the High Commission for Human Rights
RS	Remote Sensing
SMS	Short Message Service
UNOSAT	United Nations Operational Satellite Applications Program

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1.

ESTABLISHING THE RESEARCH FRAMEWORK

1.1. RESEARCH QUESTION AND OBJECTIVES

The world has been gripped by Information and Communication Technology (ICT); never have humans more easily been able to document events, communicate ideas, share information, and connect with each other globally. The rapid advancements provided by ICT have impacted most industries, including the field of human rights monitoring and investigation. New ICT tools are allowing human rights researchers to track events in real time, gain access to remote or inaccessible locations, connect with sources of information, and collect evidence they would otherwise not be able to access.¹ However, despite these benefits, ICT tools also present new practical and ethical challenges for researchers, which could jeopardise the accuracy and credibility of human rights documentation, if not overcome.

Given the double-edged nature of using ICT tools for human rights documentation, this thesis will examine both sides of the issue; first, by highlighting how new ICT tools are currently being used by fact-finders and the advancements they provide, and then, through exploring the new practical challenges and ethical debates researchers face when using them. This work will also provide recommendations for researchers and Human Rights Organisations (HROs) on how to overcome the practical and ethical barriers they face. Following an examination of the positive and negative aspects of using ICT for fact-finding, this work will conclude with a deliberation on what impact ICT tools are having

¹ Survey conducted by author with 66 human rights researchers, available at: surveymonkey.com/ict4hr (Last retrieved 1 June 2016). Hereinafter the survey will be referred to as 'Survey' in footnotes.

on traditional research methods overall, answering the fundamental question of whether new ICT tools have the potential to one day replace traditional research methods.

Specifically, this thesis will examine how monitors and investigators working for Intergovernmental organisations (IGOs), International Non-Governmental Organisations (INGOs) and Non-Governmental Organisations (NGOs) are using *satellite imagery*, *social media*, and *crowdsourcing platforms* to collect information for the purposes of advocacy and human rights reporting. How both human rights *monitors* and *investigators* are using these three tools will be explored. Monitoring refers to the collection of information on a range of human rights issues over a long period of time, and investigation refers to the collection of information to prove specific violations of human rights.² Throughout this work, the terms *fact-finder* and *researcher* will be used interchangeably to refer to both monitors and investigators.

The objective of this thesis is two-fold: it aims to provide an academic overview of the benefits and challenges posed by using ICT tools for fact-finding, while simultaneously aiming to provide practical guidance to human rights researchers currently using, or wanting to use, ICT tools in their documentation work. The dual objective of this work derives from the need to fill a literature gap in two areas; first, the gap in academic literature examining ICT's impact on human rights fact-finding,³ and second, the gap in manuals providing practical guidance to researchers on how to effectively and ethically use ICT tools for documentation.⁴

The author has taken a unique and deliberate approach to the research, by relying predominantly on information drawn from 33 interviews and a survey with 66 human rights monitors and investigators. These sources have provided the foundation for this thesis; first, because of the limited literature in this area, and second, because the author felt it was essential that the experiences and expertise of fact-finders be included in this work that focuses specifically on their craft. In order to understand how researchers are using ICT tools, the benefits they provide, the challenges they pose, and to develop relevant recommendations for other researchers, it was essential to collect information from the practitioners themselves. The research methodology applied by the author is detailed further in section 1.4.

² Guzman & Verstappen, 2003, p. 13.

³ Alston & Gillespie, 2012, pp. 1110–1111.

⁴ Survey.

1.2. A CRITICAL TIME: THE RELEVANCE OF THIS RESEARCH IN 2016

This section will demonstrate why it is a critical time for research in this area, through highlighting: 1) the gap in academic research and practical guidance on the use of ICT for documentation,⁵ and why this gap is problematic given the growing frequency in which researchers rely on ICT tools;⁶ 2) how research focused on the benefits ICT tools provide fact-finders will ensure the tools are more effectively utilised;⁷ and 3) why analysing the practical and ethical challenges posed by using ICT tools in documentation is essential to helping researchers circumvent these challenges in future.⁸

As Philip Alston and Colin Gillespie noted in *Global Human Rights Monitoring, New Technologies, and the Politics of Information* in 2012, the human rights community has yet to fully embrace the use of ICTs, or study their potential uses and harms.⁹ This lack of study has led to a gap in academic literature that could have, in turn, helped practitioners and HROs to develop practical manuals establishing ethical standards and best practice for ICT use in fact-finding. The lack of practical guidance for fact-finders poses a problem, as researchers are not applying consistent methods when collecting data, and do not fully understand the risks posed by using ICT tools for documentation,¹⁰ as noted by Jennifer Easterday, the Executive Director of JustpeaceLabs:

If you're using these tools, you need to understand what's at stake and you need to understand privacy and informed consent. Yes, I might have been trained in that if I'm a UN field researcher in an analogue format, but there's a whole different set of questions when I then take that onto the web.¹¹

Without clear guidelines establishing standards, fact-finders are left

⁵ Survey.

⁶ Survey.

⁷ Crook & Landman, 2013, pp. 16–17.

⁸ McPherson, 2015, pp. 2–3.

⁹ Alston & Gillespie [n 3] pp. 1110–1111. 'Only in the past couple of years has sustained work been undertaken by the human rights community to apply existing technologies or to study their potential uses and problems, and far too little attention has been given to the research and development of ICTs with specific human rights applications. As a result, the use of ICTs in human rights work remains at a relatively early stage.'

¹⁰ Survey.

¹¹ Interview with Jennifer Easterday, Executive Director, JustpeaceLabs (Phone, 18 April 2016).

to develop their own methods. Specifically, for researchers collecting data on human rights issues from afar, therefore utilising ICT tools more often, guidelines are becoming increasingly important. Shawky Seif El Nasr, a Human Rights Officer in the Office of the High Commission for Human Rights (OHCHR) Syria Team, is currently working remotely to collect evidence on human rights violations in Syria, and feels monitoring manuals should be updated to include guidance on the new approaches to research that he, and other fact-finders, are now utilising:

There is definitely a need to update UN human rights monitoring manuals with information on the use of technology. Recent conflicts, including Syria, show us that we need to go beyond the classical in-person one-on-one interview with a victim or witness. We need to rely on new communication technology, and we need to be more comfortable using it and aware of the security surrounding such technology.¹²

As outlined above, due to the lack of academic research on the benefits and challenges of the use of ICT in human rights fact-finding, it remains difficult for practitioners to begin developing manuals or other training opportunities for researchers, as this academic work is needed to establish a foundation of knowledge that practical guidelines can build upon. Mara Steccazzini, a Human Rights Officer with the Methodology, Education and Training Section of the OHCHR (responsible for producing guidelines and training to OHCHR staff) believes that before the OHCHR can move forward in training staff in the use of ICT for fact-finding, they must better understand it themselves:

We need to move a bit more into developing our own understanding, and then we can do training. If we don't have clarity ourselves on what some of the principles are, and what some of the challenges are, and how to address them, then [how does one] develop guidance around them, there's not much we can train people on.¹³

Although a literature gap in academic work and practical guidelines exists in the area of ICT use for human rights fact-finding, the human rights community has, in the past few years, started to catch up. In

¹² Interview with Shawky Seif El Nasr, Human Rights Officer, Syria Team, OHCHR (Phone, 27 April 2016).

¹³ Interview with Mara Steccazzini, Human Rights Officer, Methodology, Education and Training, OHCHR (Phone, 19 April 2016).

particular, INGOs such as Amnesty International (AI) and Human Rights Watch (HRW) are further ahead in developing internal guidelines and training opportunities for researchers concerning the use of ICT tools for fact-finding.¹⁴ Although many INGO researchers still face challenges in fully understanding and utilising these tools in a systematic way.¹⁵ Smaller local human rights monitoring NGOs have the furthest to go in terms of developing standard practice concerning the use of ICT for fact-finding.¹⁶

Developing standard practice is essential to ensuring an HROs credibility. Without this, the perpetrators of human rights violations can more easily dispute the allegations made against them.¹⁷ As Ella McPherson, of the Cambridge Centre of Governance and Human Rights, outlined in her 2014 paper *ICTs and Human Rights Practice*, this is the reason so much emphasis has been put on developing research methodology in the past.¹⁸ With the growth in use of ICT tools for fact-finding, there is an even greater need for updated guidelines and academic study dissecting how these new tools are being used and/or potentially weakening standards, opening HROs up to questions over credibility.¹⁹

There are divergent views on why the human rights community has been slow to establish guidelines around the use of ICT for fact-finding. Some believe that due to the rapid development of technology it is unnecessary to continuously update monitoring manuals, and that 'there are dangers setting, in black and white, processes that are as much in flux as these are. They date almost as quickly as the document you're

¹⁴ Survey.

¹⁵ Survey.

¹⁶ Survey.

¹⁷ McPherson [n 8] pp. 12–13.

¹⁸ Ibid. Of particular note in McPherson's paper, she argues, 'Human rights organizations have developed rigorous fact-finding methodologies to protect the credibility of their evidence and thus its effectiveness in advocacy and courts...This reputational resource is key to human rights organizations' persuasiveness in the context of the counterclaims and discrediting discourses that are often among the reactions to their work.'

¹⁹ Alston & Knuckey, 2016. Abstract: When rationalising the need for their publication, Alston and Knuckey note, 'In recent years, human rights fact-finding has greatly proliferated and become more sophisticated and complex, while also being subjected to stronger scrutiny from governments. Nevertheless, despite the prominence of fact-finding, it remains strikingly under-studied and under-theorized. Too little has been done to bring forth the assumptions, methodologies, and techniques of this rapidly developing field, or to open human rights fact-finding to critical and constructive scrutiny.'

updating.²⁰ While others feel it is simply hesitancy on the side of HROs and individual researchers to understand new technology; ‘There’s an adaption challenge and learning curve for experienced field researchers to want use this technology.’²¹ Or, as argued by Alston and Gillespie, it is due to reluctance on the side of HROs to innovate, driven by their complacency in traditional methods and a lack of competition between each other.²²

Beyond the need to fill a literature gap, research in this area is also critically needed because HROs must begin to understand the benefits of using ICT tools or they will miss out on the opportunities they provide. As outlined by Todd Landman and Jonathan Crook in their paper for the Annual Convention of the International Studies Association in 2013, ‘We need to understand how these tools are being used in order to fully embrace them.’²³

For example, through a better understanding of how to source and verify Citizen-Generated Media (CGM),²⁴ researchers could further utilise this content as potential evidence, Yvette Alberdingk Thijm, Executive Director of WITNESS explains further:

[CGM] is the democratisation of human rights, but we are completely under utilising the incredible potential of a large number of people. Imagine all the people that have a smart phone in their pockets, all those monitors and researchers.²⁵

Due to the slow adaption of the human rights community to utilise CGM, other industries have moved ahead in learning the skills to work with and benefit from witness-produced content. In particular, the journalism community has led the way in developing guidelines for how to source and verify CGM, ultimately making it a more useful resource for news stories. The human rights community has relied heavily on these guidelines,²⁶ which poses a danger to HROs, which risk lowering

²⁰ Interview with Thomas Probert, Research Associate, Centre of Governance and Human Rights, University of Cambridge and Research Consultant, UN Special Rapporteur on extrajudicial, summary or arbitrary executions (Phone, 15 April 2016).

²¹ Easterday [n 11].

²² Alston & Gillespie [n 3] p. 1123.

²³ Landman & Crook [n 7] pp. 16–17.

²⁴ CGM refers to videos and photos taken by civilian witnesses.

²⁵ Interview with Yvette Alberdingk Thijm, Executive Director, WITNESS (Phone, 26 May 2016).

²⁶ Christoph Koettl, 2016, p. 3.

their own standards when relying on guidelines developed by journalists with differing priorities and witness protection standards.²⁷ Beyond the example of CGM, other data derived from ICT tools also provide benefits to researchers, which will be detailed in chapter two. Through more research on these benefits, human rights fact-finders can begin to ‘catch-up’ with other industries, and ultimately better understand and utilise the ICT tools at their disposal.

The third reason why this research is so critically needed is that HROs must begin to understand the practical challenges and ethical issues that arise from using ICT tools for documentation in order to overcome them. As outlined by the Responsible Data Forum, ‘the use of these tools and strategies also introduces new risks and challenges, which are little understood in practice or in theory’.²⁸ Researchers using ICT tools are facing new challenges and ethical issues, that will be elaborated on in detail throughout chapters three to five, and it is through research such as this, that they can begin to recognise what these challenges and ethical issues are, and in turn, circumvent them.

1.3 WHY SATELLITE IMAGERY, SOCIAL MEDIA, AND CROWDSOURCING PLATFORMS?

This thesis will specifically examine how fact-finders are using *satellite imagery*, *social media*, and *crowdsourcing platforms* to collect data. These tools, although being utilised in different ways and posing unique sets of benefits and challenges, all share two common features. First, they are instruments that can be used to collect data remotely. A researcher can refer to satellite imagery, social media, or a crowdsourcing platform to collect information from a desk anywhere in the world. Second, these three tools have the ability to collect Big Data, defined as ‘any voluminous amount of structured, semi-structured and unstructured data that has the potential to be mined for information’.²⁹ Satellite imagery, social media, and crowdsourcing platforms all take in large amounts of information that can then be analysed and mined for evidence by human rights researchers, manually or through other

²⁷ Koettl Practitioners Guide [n 26] p. 3.

²⁸ ‘Human Rights Documentation’, Responsible Data Forum, 2016.

²⁹ ‘What Is Big Data ? - Definition From Whatis.Com’, SearchCloudComputing, 2016.

technological tools. These two common features pose new benefits and challenges to researchers and were the reason the author selected these tools as the focus of this study.

It is important to distinguish what the author considers ICT *tools* versus ICT *devices*, such as smartphones or video and photo recording devices. *Devices*, although also utilised by human rights researchers to collect data, require a researcher to be physically present ‘in the field’ in order to use them. Research conducted using social media and crowdsourcing platforms relies heavily on CGM that is captured on *devices* before being uploaded online. However, a fact-finder collecting CGM from social media and crowdsourcing platforms does not need to be present in the place where an alleged abuse is taking place in order to access the information.

Before moving forward, it is also important to understand the author’s definitions of *satellite imagery*, *social media*, *crowdsourcing platforms* and *traditional research methods*, as these terms can take on different meanings for technical versus non-technical individuals. Brief explanations are provided below:

1) *Satellite Imagery*, also known as Remote Sensing is ‘imagery and data collected from space—or airborne camera and sensor platforms’.³⁰ Satellite imagery is a form of Geospatial Technology (GT), ‘a term used to describe the range of modern tools contributing to the geographic mapping and analysis of the Earth and human societies’.³¹ It is of note that other GTs are also utilised by HROs for fact-finding, including Geographic Information Systems (GIS), Global Positioning Systems (GPS) and Internet Mapping Technologies.³² However, for the purposes of this thesis, when using the term *satellite imagery*, the author is referring specifically to remote sensing, essentially the collection of data through images captured by satellites.

2) *Social Media* refers to ‘forms of electronic communication (such as Web sites for social networking and microblogging) through which users create online communities to share information, ideas, personal

³⁰ ‘What Are Geospatial Technologies?’, The American Association for the Advancement of Science, 2008.

³¹ Ibid.

³² ‘What Are Geospatial Technologies?’, AAAS [n 30].

messages, and other content (such as videos)'.³³ For the purposes of this thesis, the author will focus on the social media platforms most commonly used by researchers, identified through the author's survey, including the following: Facebook, Twitter, YouTube, and WhatsApp Messenger.

3) *Crowdsourcing Platforms* refers to online websites that host aggregated data from a number of online and offline sources. Online sources can include social media, blogs, traditional news media websites, and other websites. Offline sources can include information sent directly to the platform by citizens, trained volunteers, or hired staff, who are collecting and sharing information to the platform through Short Message Services (SMSs), phone calls, or other direct methods.³⁴ Crowdsourcing platforms are essentially a host for information derived from a large number of people. For example, Wikipedia is a form of crowdsourcing.³⁵ In some cases, crowdsourcing platforms rely on digital volunteers to collect, manage, and post the information coming in from the online and offline sources, and in other cases, the platforms are managed by a particular group of administrators or a single administrator, who collect, verify, and post the data to the platform. The verification process crowdsourced data undergoes before being posted varies greatly, depending on the platform and who is managing it.³⁶

For the purposes of this thesis, the author will focus solely on crowdsourcing platforms that include a mapping element, where the offline and online data are aggregated, verified to some degree (by online volunteers or an administrator), geo-located, and subsequently pinned to an online map, showing the location the data derived from, or the location where an event took place. Although crowdsourcing could arguably fall under the definition of social media, for the purposes of this thesis crowdsourcing platforms will be treated separately, because their ability to solicit information from offline contributors poses a unique set of benefits, challenges, and ethical issues.

³³ 'Definition of Social Media', Merriam-webster.com, 2016.

³⁴ Bott & Young, 2012, pp. 48–49.

³⁵ Bratvold, 2016.

³⁶ Interview with Nathaniel Manning, Chief Operating Officer, Ushahidi, (Phone, 9 May 2016).

4) *Traditional Research Methodology* refers to research requiring the physical presence of a fact-finder in the place where alleged human rights abuses have taken place, and/or direct in-person interaction with sources. The author acknowledges there are a number of activities undertaken by fact-finders in traditional research investigations. However, for the purposes of this thesis, *traditional research methodology* refers specifically to the following activities: the collection of witness or victim testimony through in-person interviews, site visits and field investigations to locations where alleged events have taken place, documenting events through video and photography or soliciting and collecting this material *directly* from witnesses or victims, interviews with alleged perpetrators of violations, monitoring traditional news media, legal research and the collection of reports or data from official sources, such as police or government agencies.³⁷

1.4 RESEARCH METHODS

The author chose to take a unique and intensive approach to the research, through relying primarily on data derived from 33 interviews and a survey with 66 human rights fact-finders. This methodology was selected because of the literature gap in this area, and because the author felt it would result in the collection of the most accurate, practical, and timely information possible. Through focusing on data gathered from the researchers themselves, the author was able to understand the *current* trends in the usage of ICT by fact-finders, the *real-world* benefits they gain, and the *actual* challenges they face. Ultimately, through this research, the author was also able to formulate realistic and practical recommendations to overcome the challenges.

1.4.1. *Interviews with practitioners and experts*

The author conducted interviews with 33 individuals, listed in the bibliography, falling into three categories:

1) *Practitioners*, working as human rights monitors or investigators. The

³⁷ Human Rights Watch, 2016.

author felt it was essential to speak with the individuals who are the focus of this study, the researchers themselves. The practitioner interviews included individuals working with IGOs, INGOs and NGOs globally, including former and current Special Rapporteurs, OHCHR Human Rights Officers, Amnesty International (AI) and HRW Researchers, and monitors and investigators working with local NGOs in Asia, Africa and the Americas.

2) *Technical experts* in satellite imagery, social media or crowdsourcing platforms. The experts were individuals with specialised skills and knowledge on the tools being examined. Expert interviews included individuals working with DigitalGlobe, the United Nations Operational Satellite Applications Programme (UNOSAT), The American Association for the Advancement of Science (AAAS), HRW, AI, OHCHR, Ushahidi, The Lord's Resistance Army (LRA) Crisis Tracker, and the eyeWitness to Atrocities App.

3) *Experts in human rights documentation and academics* provided the theoretical framework for the thesis and helped the author elaborate on some of the ethical debates around ICT use for fact-finding. These interviews included individuals working for HURIDOCS, The Human Rights Documentation Analysis Group (HRDAG), The Engine Room, the Methodology, Education and Training Section (METS) of the OHCHR, The Danish Institute for Human Rights, Carnegie Mellon University, and the University of Cambridge.

1.4.2. *Survey with human rights fact-finders*

The author conducted a survey aimed at gathering quantitative data to support the qualitative data collected through interviews and the literature review. In order to effectively analyse the impact of ICT on human rights fact-finding, and trends in how ICT tools are being used, the author felt it was essential to gather quantitative information. The survey was completed by 66 human rights monitors or investigators: 35% of respondents worked for IGOs, 48% worked for INGOs, and 17% worked for NGOs. The author spent significant time connecting with human rights researchers directly and requesting them to complete the survey through utilising linkedin.com, human rights documentation groups, and online research. The survey, running for 45 days, was hosted on the online platform Survey Monkey.

The survey had three specific sections, focusing on satellite imagery, social media, and crowdsourcing platforms. The questions, 52 in total, focused on the researchers' day-to-day use of each tool, the benefits gained from using them, the challenges posed, and the researchers' recommendations for best practice. The survey also provided questions for respondents who have not used these tools, for example, if a respondent answered *no* to using a specific tool in their research work, a different set of follow-up questions were generated, focusing on why they did not use that specific tool. This was important in gathering data on the barriers preventing researchers from using ICT tools. The survey was predominantly multiple-choice, with most questions allowing for more than one option to be selected, providing hierarchal responses; however, some questions required only one response, providing much clearer statistics. Each multiple-choice question provided for an 'other' option to be selected and explained, in case the suggested responses did not include the desired response. Some questions were qualitative in nature and asked researchers to explain their responses in more detail.

The survey initially generated 74 responses from human rights practitioners; however, not all respondents met the strict criteria for inclusion in this study, therefore particular responses were removed from the final data set. For example, academic researchers or researchers working with think-tanks who completed the survey were removed, as they are not staff of an HRO collecting data for the purposes of advocacy or human rights reporting. Initially, the focus of the survey was solely for field researchers; however, the author acknowledges that some respondents are staff based in the headquarters of HROs. For example, researchers unable to obtain ground access to the region in which they are researching or fact-finders based in headquarters that conduct regular field visits to the regions on which they focus, were included in the final tally of responses. Additionally, respondents who did not complete all three sections of the survey were removed from the final data set, in order to ensure that the data remained consistent when compared to the total number of respondents. After ensuring all respondents met the research criteria and had completed the survey in full, the final number of respondents was 66.

1.4.3. *Literature review*

Literature reviewed for this thesis included academic literature around the use of satellite imagery, social media, and crowdsourcing platforms

for human rights fact-finding. However, there is limited research in this area, with the majority focusing on the use of these tools for human rights *advocacy*, or its use during humanitarian disasters. Additionally, research included reviewing HROs' publications, including websites, articles, blog posts, and published reports that referenced evidence collected through ICT tools. The research also included a thorough review of monitoring manuals produced by the UN, the ICRC, HROs, and other authorities on human rights documentation, specifically to examine their focus, or lack thereof, on ICT use for fact-finding.

The Citizen Evidence Lab,³⁸ launched by AI in 2014, and driven largely by AI's Senior Analyst and in-house digital forensics expert, Christoph Koettl, provided useful resources on the verification of CGM. The Responsible Data Forum, launched in 2014, as a 'collaborative effort to develop useful tools and strategies for dealing with the ethical, security and privacy challenges facing data-driven advocacy,'³⁹ provided useful resources to the author on human rights documentation best practice. Christof Heyns, Special Rapporteur on extrajudicial killing, summary and arbitrary executions, authored an innovative report in 2015 on the use of ICTs to secure the right to life,⁴⁰ that was a vital source for the author. Heyns' report relied heavily on research conducted by the Centre of Governance and Human Rights at the University of Cambridge,⁴¹ that has recently published several relevant and useful reports on ICT and human rights, which were also utilised by the author. The AAAS⁴² has published numerous guidelines for researchers wanting to use satellite imagery, which are also referenced throughout this work. The blog posts and publications by Patrick Meier, of iRevolution and an expert in crowdsourcing during humanitarian crisis, were particularly useful to the author when researching crowdsourcing platforms. Additionally,

³⁸ Useful resources for practitioners in CGM verification have been produced and/or collected by the Citizen Evidence Lab and can be accessed here: <https://citizenevidence.org/>

³⁹ The Responsible Data Forum has produced guidelines on human rights documentation and ethical standards for data collection, storage, and sharing, that can be found at: <https://responsibledata.io/>

⁴⁰ Christof Heyn's ground-breaking report can be accessed directly at: <https://documents-dds-ny.un.org/doc/UNDOC/GEN/G15/082/34/PDF/G1508234.pdf?OpenElement>

⁴¹ A number of publications and resources for practitioners from The Centre of Governance and Human Rights at the University of Cambridge can be found at: <http://www.cghr.polis.cam.ac.uk/research-themes/human-rights-in-the-digital-age-1>

⁴² The AAAS has produced numerous useful resources for fact-finders on Geospatial Technology that can be found at: <http://www.aaas.org/program/geospatial-technologies-project>

the published work of Philip Alston, Patrick Ball, John Lannon and Todd Landman were also vital resources for this thesis.

1.4.4. *Limits to research*

This thesis does not explore the differences in the use of ICT tools by researchers depending on their region or human rights issue of focus, nor does it distinguish between the unique benefits, challenges, or ethical debates researchers face based on the type of HRO they work for, e.g. IGO, INGO versus NGO. The author acknowledges that unique benefits and challenges apply when utilising ICT tools for fact-finding in certain regions, for specific human rights issues, or depending on the type of HRO a researcher works for. However, the goal of this research is to determine larger trends in ICT usage by researchers generally, and the *common* benefits and challenges they face.

Although this thesis does provide some insight into the additional requirements necessary for data to be used as evidence in a trial, it does not focus on the collection of data solely for the purposes of human rights legal proceedings. The focus of this thesis is on human rights evidence collected through ICT tools for the purposes of advocacy and human rights reporting.

This thesis will focus solely on the use of satellite imagery, social media, and crowdsourcing platforms to collect data, and will not focus on the use of *physical ICT devices*, such as smartphones, recording equipment, or aerial photography such as drones. The author recognises that these tools are also used for fact-finding and pose their own benefits and challenges; however, given that these tools rely on a physical presence in the field, they will not be examined in this thesis.

1.5 DIVERGENT IDEOLOGIES ON USING ICT TOOLS FOR FACT-FINDING

There are divergent views on the benefits of using satellite imagery, social media, and crowdsourcing platforms to collect data on human rights and the overall impact these tools are having on traditional research methods. Through the author's research, it is evident that there are three primary ideologies, defined by the author as traditionalists, futurists, and moderates.

1) *Traditionalists* predominantly believe that fact-finders must rely on traditional research methods in order for their research to have merit. Traditionalists are not opposed to the use of ICT entirely, but feel that its best use is for information management, data organisation, and data storage, rather than as a tool for data collection. Traditionalists often question the accuracy of information collected through ICT tools. For example, Patrick Ball, founder of HRDAG, has argued that crowdsourcing platforms do not generate accurate statistics, and by relying on amateur submitters, they generate amateur results, leading to the spread of rumours and contradictory information.⁴³ Other traditionalists argue that the proliferation of ICT tools is jeopardising traditional methodology, and in turn, an HROs credibility. For example, in 2014 Andrew Herscher argued that the growth in use of satellite imagery by HROs was becoming damaging to their on-the-ground research, and by using satellite imagery HROs were no longer conducting as extensive field investigations.⁴⁴

2) *Moderates* believe that ICT tools offer a number of advantages to human rights researchers, and strengthen the data collection process, but only when used in conjunction with traditional research methods. Some moderates argue that these new tools not only enhance the abilities of researchers to collect more, but also support and reinforce traditional research methodology. For example, Josh Lyons, lead Satellite Imagery Analyst with HRW's Emergencies Division noted, 'The satellite imagery facilitates and enables a better set of planning tools for doing field assessments; we use it also for confirmation purposes,'⁴⁵ for example when deciding if a field investigation is worthwhile.

3) *Futurists* believe that ICT tools are the future of human rights fact-finding, and researchers or HROs that do not currently utilise technology are missing out on great opportunities. Futurists do not believe there is no merit in traditional fact-finding, they understand and acknowledge the work of traditional human rights researchers; however, they feel ICT tools provide more efficient data collection

⁴³ Heinzelman & Meier, 2013, p. 130.

⁴⁴ Herscher, 2014.

⁴⁵ Interview with Josh Lyons, Satellite Imagery Analyst, Emergencies Division, HRW (Phone, 23 March 2016).

methods. For example, Nathaniel Manning, the Chief Operating Officer of the open-source crowdsourcing software provider Ushahidi stated, ‘I believe crowdsourcing allows you to gather testimony more efficiently at a lower cost than sending people around doing first-hand interviews, it lets you get a larger reach.’⁴⁶ Yvette Alberdingk Thijm, Executive Director of WITNESS, agreed, ‘The model is a little lopsided, if you think about the time and resources it takes to send researchers all over the world, the evidence may have been destroyed by the time they get there.’⁴⁷

In order to determine which ideology is most reasonable, and to answer the fundamental question of ‘what impact are ICT tools having on traditional research methods?’ the author must first examine how exactly the tools are being used and their benefits, which is the focus of chapter two, and also examine the practical and ethical challenges posed by using these tools, the focus of chapters three to five. It is then in the examination of how to *overcome the challenges* posed by using these tools that the author will be able to determine the impact ICT tools are having on traditional research methods, and in turn, which ideology is most logical. For example, if the suggested solutions require researchers to stop using the examined technology in order to conduct effective research, then it will be clear that traditional research methods reign supreme and traditionalists are correct in their view. If the recommendations do not require any reliance on traditional research methods, it will be evident that the new tools are superior to traditional research methods and may eventually replace them, meaning the futurist perspective prevails. And finally, if the recommendations illustrate that it is possible to overcome the challenges posed by these tools through utilising them in conjunction with traditional research methods, then a more moderate conclusion will be made.

The concluding chapter of this thesis will determine the impact ICT tools are having on traditional research methods, and which ideology is most accurate; however, it is the hypothesis of the author that a moderate perspective is most logical.

⁴⁶ Manning [n 36].

⁴⁷ Thijm [n 25].

1.6 THESIS STRUCTURE

In chapter two, this thesis will begin outlining how satellite imagery, social media, and crowdsourcing platforms have evolved to become part of the human rights researchers' toolkit. Following this, the benefits provided by each instrument will be discussed and illustrated through real-world examples.

Chapters three to five will focus on each tool uniquely and examine the specific practical challenges researchers face when using the technology, as well as the larger ethical debates surrounding the instrument's use. Each chapter will conclude with recommendations and possible solutions, for researchers and HROs, to overcome the challenges outlined.

This work will conclude with a determination of the impact ICT tools are having on traditional research methods, a final recommendation to the human rights community, specific suggestions for further research in this area, and finally, a cautionary note from the author.

2.

EVOLUTION, CURRENT USES, AND BENEFITS
OF SATELLITE IMAGERY, SOCIAL MEDIA,
AND CROWDSOURCING PLATFORMS AS TOOLS
FOR DOCUMENTATION

2.1 SATELLITE IMAGERY

2.1.1. *Evolution over time and current uses*

Satellite imagery started being used by human rights monitors and investigators more frequently in the early 2000s, when satellite companies began to privatise. Prior to this, satellites were owned and operated by governments, making it difficult for HROs to gain access to the images captured,⁴⁸ ‘The first ever commercial high-resolution satellite went up in 1999 and became operational by 2000. And NGOs for the most part only make use of commercial satellites. Government satellites deal with classified imagery and are hence off limits to the outside world.’⁴⁹ When the satellite market opened up to HROs, AI and HRW were amongst the first to begin utilising satellite imagery in their investigations. One of the first investigations to rely heavily on satellite imagery was AI’s *Eyes on Darfur* project, a collaboration between AI and the AAAS, ‘Not only was this project important in documenting abuses, but also in fostering a community of concerned global citizens that could bear witness to and take action to cede the destruction caused in Darfur by the Sudanese government.’⁵⁰ The *Eyes on Darfur* project was a monumental shift forward, illustrating the power of satellite imagery for human rights research.

Since the early 2000s more HROs have jumped on the satellite imagery bandwagon, with HRW now arguably leading the charge, with

⁴⁸ Larsson, 2016.

⁴⁹ Nerenberg, 2010.

⁵⁰ Zelizer, 2015.

their own team of staff dedicated to procuring and analysing satellite images.⁵¹ Although AI has conducted many investigations using satellite imagery, they do not have a dedicated satellite analyst on staff, although they were making steps towards filling such a post at the time of writing this thesis.⁵² Human Rights Organisations, such as AI, who do not have in-house experts in satellite imagery have two procedures for procuring and analysing satellite imagery. First, they sometimes rely on intermediary partners, such as the AAAS, who procure images from a satellite company, conduct an analysis of them and produce a report of their findings that is then referenced in the human rights report.⁵³ The advantage of HROs partnering with the AAAS is that they produce a stand-alone scientific report that is published independently of the human rights report, helping to build credibility for the HROs.⁵⁴ Beyond relying on intermediary partners such as the AAAS, HROs without in-house satellite analysts, most often rely on the satellite companies themselves, to source the required images, conduct the analysis of them and produce a report that is commissioned by the HRO. For the OHCHR, and other United Nations (UN) agencies, the process involves approaching UNOSAT, who will source the raw image data from a satellite provider, conduct the imagery analysis themselves in-house, and produce a report that is referenced by the UN agency requesting the images.⁵⁵ It is only in the last year that UNOSAT has started working closely with the OHCHR, on around eight investigations to date, previously UNOSAT's human rights work was primarily for Commissions of Inquiry (COI) or the International Criminal Court (ICC).⁵⁶ There are several practical and ethical challenges related to in-house versus out-sourced satellite imagery analysis that will be detailed further in chapter three; however,

⁵¹ Lyons [n 45].

⁵² Interview with Christoph Koettl, Senior Analyst, Amnesty International (Phone, 16 February 2016).

⁵³ Interview with Susan Wolfenbarger, Project Director, Geospatial Technologies Project at AAAS (Phone, 11 April 2016).

⁵⁴ In an interview with the author, Wolfenbarger provided an explanation of how AAASs partnerships with HROs work, 'We purchase imagery, conduct analyses, and produce a report based on our research. What makes these partnerships so strong, is that the HRO has important information about events on the ground that should be documented, but we can publish an independent report. That report can then be cited by the human rights groups, but you have a stand-alone scientific report on the topic.'

⁵⁵ Interview with Lars Bromley, Principal Analyst and Senior Advisor, Human Rights and Security, UNOSAT (Phone, 8 April 2016).

⁵⁶ Bromley [n 55].

in order to establish context, it is important to understand the varied ways HROs procure and analyse satellite images.

The leading providers of satellite imagery for HROs include DigitalGlobe, a company based in the United States (US), and Airbus, a French satellite company.⁵⁷ There are also a number of smaller satellite imagery providers; however, without the high-resolution cameras and substantial imagery archives that DigitalGlobe and Airbus provide, they are not yet major competitors in the satellite imagery market. The longer a satellite company has been operational, the more their imagery archives have built up over time. According to Susan Wolfinbarger, Project Director of the Geospatial Technologies Project at the AAAS, these archives are helpful to human rights investigations:

The archives of the satellite companies are also useful. This has changed so much, early on there just wasn't any imagery, sometimes at all, but every time an image gets collected it goes into the archives, so we're getting access to this build-up of imagery.⁵⁸

Satellite imagery is becoming more commonly used in human rights investigations; however, some barriers are preventing HROs from fully embracing this new tool. The author's survey indicated that 39% of 66 respondents have used, or their HRO has used, satellite imagery for an investigation at least once. Of these respondents, 35% indicated that they use satellite imagery often or very often, while 38% indicated that they do not frequently use it in an investigation. Of the 61% of respondents who indicated that they have never relied on satellite imagery in an investigation, 50% reported that this was due to a lack of training or understanding in how to source and analyse the images. This barrier will be addressed further in chapter three. Of the respondents who have utilised satellite imagery, the majority indicated they began doing so in the last five years.⁵⁹

⁵⁷ Interview with Heath Rasco, Director, Technical Programs, DigitalGlobe (Phone, 6 April 2016).

⁵⁸ Wolfinbarger [n 53].

⁵⁹ Survey.

2.1.2. *Benefits of satellite imagery for fact-finding*

The primary benefits of using satellite imagery for human rights monitoring and investigations include the following: 1) it allows human rights monitors and investigators to gain access to remote locations and restricted countries they cannot gain access to in-person; 2) it can help determine when an event took place; 3) it provides a level of detail that can only be gained through imagery; 4) it provides evidence that cannot be refuted through intimidation by human rights abusers; 5) it helps researchers track events that have taken place over a vast area of land, and; 6) it can enhance field research by providing a ‘road map’ for researchers and help HROs determine when investigations into allegations are worthwhile.

2.1.2.1. *Access to non-permissive environments*

Satellite imagery allows researchers to gain access to restricted and remote locations. As outlined by Wolfinbarger of the AAAS, ‘The first [benefit] is access, it gives us access to non-permissive environments, maybe because they’re dangerous, like conflict zones, or maybe they are very remote, or researchers are denied permission to do their work on the ground.’⁶⁰ Satellites can provide this access because they are essentially, ‘above the law’ and therefore can legally image almost any place in the world, ‘There’s international law that covers this, the Outer Space Treaty...It boils down to the fact that the satellites are outside of domestic airspace. Sovereignty only goes so far up in the air and satellites are above that.’⁶¹ There are some caveats to the broad access satellites provide, such as national legislation that restricts imaging certain places or groups,⁶² which will be discussed further in chapter three. However, for the most part, satellites can legally capture images of nearly any place on the globe. Thomas Probert, a research consultant for Special Rapporteur Christof Heyns, who works within the Special Procedures section of the UN Human Rights Council (HRC), believes this access has greatly improved certain HRC sanctioned investigations:

⁶⁰ Wolfinbarger [n 53].

⁶¹ Ibid.

⁶² Ibid.

Some of the evidence collected for the COI reports, [such as] the satellite imagery in the North Korea COI report. There is no other way an investigation of that nature could have made those kind of claims, so it does allow you to do robust human rights investigations in places where you can't send a team.⁶³

2.1.2.2. *Time machine factor*

Satellite images provide several advantages when it comes to time. First, is the ability to collect imagery before and after an event has taken place, 'Most [HROs] use the satellites as a giant digital camera in the sky to show a basic before and after of the event in question.'⁶⁴ An example of this comes from the 2008 investigation conducted by HRW and AAAS, into allegations over the Ethiopian Military burning and destroying villages in the Somali Region of Eastern Ethiopia. HRW and AAAS obtained before and after images of a selection of the villages that were alleged to have been attacked, and the 'images were reviewed for signs consistent with the reporting provided by Human Rights Watch, and in eight cases the imagery did provide indications of structural removal and, sometimes, burning'.⁶⁵

Through reviewing imagery from the archives of satellite companies, investigators can not only establish when a single event took place years before, but can also track a series of events that took place over a long period of time, as noted by Wolfinbarger of the AAAS, 'It's great for putting together timelines of events and being able to timestamp the events, because sometimes it's the time something happened that is being contested'.⁶⁶ This ability to time-stamp events and create timelines can play an essential role in human rights legal proceedings, often happening many years after the fact. Josh Lyons, Lead Satellite Analyst with HRW, explains further:

It's the time machine factor. I'm able to go back and provide very good information, from an objective source, about events that took place seven, ten, twelve years ago. This is especially useful for something like the ICC, where the court case may take place ten or fifteen years after the events in question.⁶⁷

⁶³ Probert [n 20].

⁶⁴ Wolfinbarger [n 53].

⁶⁵ Human Rights Watch, 2008.

⁶⁶ Wolfinbarger [n 53].

⁶⁷ Bromley [n 55].

2.1.2.3. *A picture is worth a thousand words*

The saying, ‘a picture is worth a thousand words’ is certainly true for satellite imagery, ‘there are details available in the image not available in other evidence’.⁶⁸ Satellite imagery has a tendency to drive media attention to particular investigations⁶⁹ and can help make certain points stand out within human rights reports, as Marlene Urscheler, the liaison between OHCHR Human Rights Officers and UNOSAT, has noticed:

It can transmit information that is hard to transmit in words, for communication purposes, you can show what is happening. With two pictures, you can say much more than in an analysis. The OHCHR [reports are] very heavy on writing, and there are not a lot of pictures...many people when they look at reports they read them quickly, but pictures help draw their attention.⁷⁰

Beyond catching people’s attention, the imagery itself can capture detailed information that provides useful clues for investigations. In the case of Syria, the COI has relied heavily on satellite imagery to monitor events taking place on the ground.⁷¹ In one instance, this imagery provided so much detail it helped the COI determine violations in International Humanitarian Law (IHL). Urscheler of the OHCHR explains further:

They were looking at satellite pictures for a specific area where there was lots of shelling, and they were actually able to identify the weapons that were deployed in this area. And from the type of weapon, they could determine the shooting range that it probably came from. These weapons could then be traced back to the Syrian army.⁷²

2.1.2.4. *Cannot be intimidated by abusers*

One of the risks when gathering evidence through testimony is the potential for witnesses to change or adapt their stories, often after being intimidated or threatened by the perpetrators of human rights abuses. However, ‘These relatively new data - such as remote sensing data and

⁶⁸ Ibid.

⁶⁹ Interview with Nicholas McGeehan, Bahrain, Qatar, and UAE Researcher, HRW (Phone, 20 April 2016).

⁷⁰ Interview with Marlene Urscheler, Human Rights Officer and UNOSAT liaison, Emergency Response Section, OHCHR (Phone, 7 April 2016).

⁷¹ Bromley [n 55].

⁷² Urscheler [n 70].

corresponding analysis - cannot be intimidated or threatened, and enjoy permanence that allows for even retrospective documentation.⁷³ Beyond not being able to be intimidated, satellite imagery evidence is also more difficult to disprove by the perpetrators of human rights abuses, 'If you have images that were analysed in a proper way, the evidence is hard to brush away.'⁷⁴ Given the strength of satellite imagery in corroborating witness testimony, the ICC has begun to re-organise the way it collects evidence, to focus more on the use of satellite imagery and other digital evidence.⁷⁵

2.1.2.5. *Can track events in a large area*

Satellite imagery allows researchers to investigate events across large expanses of land. Wolfinbarger of the AAAS feels this is a primary benefit, 'Being able to look at very large areas is another benefit, whether tracking a phenomena across a large area or covering a very large spatial area. It lets us cover a lot of ground.'⁷⁶ A single satellite image can capture a vast area of land, which would take substantial time to cover in-person by a researcher. An example of this comes from an investigation into the Gaza strip, as observed by Urscheler:

There were allegations over a lot of houses being destroyed, so UNOSAT did a map-out of all the destruction across Gaza, and through one map [image] it could transmit the message of the high percentage of houses that had been destroyed.⁷⁷

For individual researchers to physically travel across Gaza, from building to building, counting the number of destroyed structures would be incredibly difficult to track accurately and in a reasonable amount of time, if not impossible.

2.1.2.6. *Enhances ground research*

Despite claims made by some traditionalists, as outlined in section 1.5, that satellite imagery is being used at the peril of ground research,

⁷³ 'Remote Sensing For Human Rights', Amnesty International USA, accessed 13 May 2016.

⁷⁴ Urscheler [n 70].

⁷⁵ Bromley [n 55].

⁷⁶ Wolfinbarger [n 53].

⁷⁷ Urscheler [n 70].

satellite analysts, such as Lyons of HRW, believe it is a tool that actually enhances ground research by helping to determine when investigations into allegations may be worthwhile:

In the past, when there was an unsubstantiated allegation we may not bother with it because it's low probability, but now imagery can be used to do a quick spot verification. Is there any basis to this allegation?⁷⁸

Based on the findings collected through satellite imagery, HROs can then decide if it is worthwhile to allocate resources to fuller investigations. Beyond this, through satellite imagery, fact-finders can be better prepared before entering the field. For example, when Manfred Nowak was investigating allegations over mass graves in Srebrenica, he used satellite imagery as a road map to determine where to focus his field research:

The first time I went to Srebrenica, I was the first international person allowed in after long negotiations with the Bosnians. Before I went to Srebrenica, I already had this map [the satellite imagery]. And I could then very clearly go to where I wanted to go.⁷⁹

2.2 SOCIAL MEDIA

2.2.1. *Evolution over time and current uses*

The Arab Spring was monumental in demonstrating the power of social media to connect people, coordinate collective action, and share information;⁸⁰ it also illustrated how social media could help circumvent the media blackouts imposed by oppressive governments and regimes at the time.⁸¹ This was a decisive moment for the evolution of social media into the human rights fact-finders' toolkit. This was evidenced by the survey conducted by the author, in which 82% of respondents indicated that they currently use social media in their research work, and when

⁷⁸ Lyons [n 45].

⁷⁹ Interview with Manfred Nowak, Director, Ludwig Boltzmann Institute of Human Rights, Vienna and UN Special Rapporteur on Torture 2004–2010 (Lido-Venice, Italy, 23 April 2016).

⁸⁰ Crook & Landman [n 7] p. 2.

⁸¹ Ibid.

asked at what point they began doing so, the majority responded in the last three to five years, following the Arab Spring.⁸²

The rapid growth in access to smartphones and the internet globally has also contributed to the evolution of social media as a research tool, ‘The ubiquity of smartphones enables the capture of visual and auditory information, which can be easily transmitted through digital channels such as social media platforms.’⁸³ The ongoing conflict in Syria is an example of this, dubbed the YouTube War,⁸⁴ because of the massive number of videos depicting events in Syria, which have been uploaded to the social media platform. For a researcher, the ‘hundreds of thousands of videos from the armed conflict in Syria effectively turned the site into a huge evidence locker’.⁸⁵ Social media has allowed citizens to more directly share information they capture on their personal devices, ultimately ‘putting reporting on human rights abuses beyond the control of governments’⁸⁶ and potential evidence more easily into the hands of researchers.

Based on the findings from the author’s survey, it is clear that social media has become a staple tool for fact-finders. Of the 82% of survey respondents who use social media to collect data, 35% indicated that they do so daily, and 30% indicated that they do so a few times a week. The survey also revealed that 80% use Facebook, 70% use Twitter, and 61% use YouTube, while a number of respondents also mentioned using WhatsApp Messenger in the additional comments section of the survey. Researchers are using social media for different purposes; 81.5% indicated that they use it to follow-up on information about an event that has already taken place, and 64% indicated that they use it to discover information on events pre-emptively. Those surveyed had varied responses for what type of data they gather through social media, with 40% indicating they primarily gather information on trends and 20% using it to source videos. The remaining 40% of respondents were split between using it to source photographs, testimonial evidence, or for finding individuals to interview. When questioned about their methods for using social media, 72% of respondents indicated that they

⁸² Survey.

⁸³ Christof Heyns, 2015, p. 13.

⁸⁴ Christoph Koettl, 2014.

⁸⁵ Ibid.

⁸⁶ Koettl [n 84].

visit specific pages or profiles to collect information, and 68% indicated that they use their existing social media networks to conduct research. The least selected option, with only 27% of respondents, was that they use social media as a way for people to contact them directly.⁸⁷

2.2.2. Benefits of social media for fact-finding

The primary benefits of using social media to collect data and evidence on human rights include the following: 1) it facilitates access to people and restricted places; 2) it provides access to CGM; 3) it allows researchers to track events in real time; 4) it provides a new platform, or forum, to communicate directly with sources or conduct interviews through, and; 5) it allows researchers to circumvent controlled information sources.

2.2.2.1. Facilitates access to people and restricted places

One of the primary benefits of using social media for human rights documentation is that it allows researchers to gain access to sources of information, including witnesses, victims, and the perpetrators of human rights violations, often in regions that they do not have direct ground access to. In the author's survey, 87% of social media users indicated that this was the primary advantage.

As Nicholas McGeehan, the Bahrain, Qatar, and United Arab Emirates Researcher for HRW noted, in restricted countries, social media provides a platform to know what is happening, 'I can only get into on one of the countries I research...So the way I keep up to date with what's going on in Bahrain is Twitter. If something's happening in Bahrain, Twitter will let me know quickly what it is.'⁸⁸ Following the identification of a particular event, social media can then help researchers know who was present at an event and who to follow-up with, as explained by an Americas researcher with AI, 'I can find out who was there, at an event, I can then contact that person and review material they have... It's a way to find a witness, and identify potential sources.'⁸⁹

⁸⁷ Survey.

⁸⁸ McGeehan [n 69].

⁸⁹ Interview with anonymous Americas Researcher, Amnesty International (Phone, 18 April 2016).

Beyond using social media as a way to identify sources and follow-up with them to conduct an interview, some researchers rely on social media posts directly for quotes. Patrick Poon, an AI researcher who covers China, Taiwan, Hong Kong, and Macau, explains further:

With social media we can find people that are too dangerous to talk to in person. If they want, they can still have a platform to share their information by posting it on social media, and without giving them too much trouble, we can actually quote their social media platforms.⁹⁰

Furthermore, social media also facilitates access to officials or the perpetrators of human rights abuses, who are often reluctant to speak with researchers directly. As a human rights monitor working in Gaza before and after the 2014 conflict experienced:

The Israeli Defence Force often communicated what they thought through their Facebook page and Twitter... So an airstrike happened, and after a few hours or days you'd find a lot of information on human rights websites, and then the issue became something people would talk about, and eventually, the IDF would respond with an explanation on Twitter or Facebook...In our investigations this helped us tremendously to understand what they thought and why they felt it was justified to act in a certain way.⁹¹

2.2.2.2. *A platform to collect citizen generated media*

The CGM that is uploaded and shared through social media platforms provides seemingly endless content for researchers to investigate and use as potential evidence, 'The availability of camera-enabled cell phones in combination with digital social networks is nothing short of a game changer.'⁹² Citizen-generated media is useful to researchers because, like satellite imagery, it provides a level of detail that cannot always be derived from witness testimony, providing essential clues in an investigation, 'A witness testimony saying, "I saw the soldier shoot this person" can't give you as much detail as a photograph of the soldier.'⁹³ Videos or photos shared to social media platforms can be viewed for specific geographic features that might help identify a location, a street

⁹⁰ Interview with Patrick Poon, China, Taiwan, Hong Kong, Macau Researcher, Amnesty International (Phone, 27 April 2016).

⁹¹ Interview with anonymous human rights monitor working in Gaza in 2014 (Phone, 6 April 2016).

⁹² Koettl, [n 26] p. 2.

⁹³ Probert [n 20].

sign for example, or identify features on people, such as a badge number or uniform colour.⁹⁴ Beyond this, CGM creates a record of an event, ‘A human rights researcher can thus go back in time in order to access that record, which in some cases might be more detailed and accurate than witness testimony.’⁹⁵ A recent example of how CGM was used for a human rights investigation, comes from an AI Americas researcher:

There was a developing event in the north [of Mexico], in an isolated part of the country, so there was not an immediate reaction by the press. It was a demonstration by some farm workers, and the police came into the town to repress it. We were trying to establish if police entered and acted violently. Citizens were uploading videos on Twitter, so we used the videos to see if the events were actually happening and to find the correct location. Basically to see if we could claim it was actually happening, and from all of the media we had enough information to contact the authorities.⁹⁶

2.2.2.3. *Tracking events in real time*

The immediacy of social media provides an advantage to human rights researchers, allowing them to track events in real-time, possibly leading to life-saving interventions. For example, after the 2013 chemical weapons attack on the suburbs of Damascus, more than 100 videos were uploaded to YouTube within hours.⁹⁷ These videos ‘allowed human rights researchers to establish basic facts about the attack and the chemical agents used, even before UN investigators were able to produce a comprehensive assessment through direct ground access’.⁹⁸

For Chew Chuan Yang, a researcher working with a local HRO in Malaysia, the greatest benefit of social media is the speed at which he can track on-going events, ‘We mostly use social media during major events, so if there is a major event and you can’t physically be at the event, we use social media to help guide our actions.’⁹⁹

⁹⁴ Koettl, [n 26] p. 7.

⁹⁵ Ibid.

⁹⁶ Americas Researcher [n 89].

⁹⁷ Koettl, [n 26] p. 2.

⁹⁸ Ibid.

⁹⁹ Interview with Chew Chuan Yang, Documentation and Monitoring Coordinator, Suaram Rakyat Malaysia (Phone, 22 April 2016).

2.2.2.4. *Platform to communicate with sources*

Social media platforms that include private or group messaging services, such as WhatsApp Messenger, provide a forum for researchers to connect with sources, victims, activists, and other researchers to conduct interviews, gather facts, or verify data. Patrick Poon, AI researcher, utilises messaging services regularly to communicate with sources, particularly when covering China, ‘Advocates in China are very active on these social media platforms, and it’s much better to connect with them on these channels, because on the phone there is surveillance, so on social media it’s better.’¹⁰⁰ Also in countries like South Sudan, where there is fear of government surveillance, Jerry Locula, a Human Rights Officer with the UN Mission in South Sudan, feels social media messaging enhances his ability to communicate with sources:

These sources sometimes don’t feel comfortable to have conversations on the mobile phone because the phones are being monitored by the government. The best alternative is to use the ICT tools. The information regarding human rights violations and abuses are then passed through one-on-one chats and other messaging capabilities.¹⁰¹

Not only can messaging platforms provide a way to connect with sources directly, they can also help researchers stay connected with other researchers or activists. Questions can be posted easily in group messages and information can quickly be verified through several reliable sources, as experienced by monitoring coordinator, Yang, in Malaysia, ‘The network between civil society and NGOs is quite strong, it’s a close inner circle of a few hundred people or so, so it’s faster communicating in messaging applications to verify facts.’¹⁰²

Social media platforms also facilitate communication by opening up researchers and HROs to being contacted by potential sources; Yang explains, ‘We receive quite a few reports through Facebook, at least one to two cases a month.’¹⁰³

¹⁰⁰ Poon [n 90].

¹⁰¹ Interview with Jerry Locula, Human Rights Officer, UN Mission in South Sudan (Phone, 14 March 2016).

¹⁰² Yang [n 99].

¹⁰³ Ibid.

2.2.2.5. *Circumvents controlled information streams*

Given censorship by authorities over traditional news media and other information streams in many countries, social media provides researchers an alternative way to gather data, allowing them to go beyond state-controlled or bias information. Neela Ghoshal, an HRW researcher focusing on Lesbian, Gay, Bisexual and Transgender (LGBT) rights, a taboo topic in many places, feels social media has helped circumvent the challenges posed by traditional media information gathering:

In Cameroon, it's almost impossible to get the media to pick up anything on LGBT rights because they think it's too controversial, so things that people post on Facebook pages, and other social media, are often the first sources of information.¹⁰⁴

Beyond circumventing bias or censored news media, in countries such as China, where researchers are often not able to trust the data produced in government reports, social media provides an alternative means, as noted by AI researcher Poon:

We used to rely on having to meet the person to get quality data, or rely on other official channels, but now we can really do our own research while avoiding very controlled information.¹⁰⁵

2.3 CROWDSOURCING PLATFORMS

2.3.1. *Evolution over time and current uses*

It was during the 2007/2008 post-election violence in Kenya when the crowdsourcing software developed by Ushahidi was first utilised. This was a monumental moment demonstrating how effective soliciting human rights information from volunteer citizen contributors could be, and the power of crowdsourcing for 'social good'; 'This enabled the 'crowd' to bear witness collectively to the unfolding violence across the country.'¹⁰⁶ According to Nathaniel Manning, Ushahidi Chief Operating

¹⁰⁴ Interview with Neela Ghoshal, LGBT Researcher, Human Rights Watch (Phone, 28 April 2016).

¹⁰⁵ Poon [n 90].

¹⁰⁶ Meier, 2011.

Officer (COO), the ethos behind Ushahidi was simple, the founders wanted to understand what was happening during the Kenyan post-election violence, and through soliciting data from Kenyans themselves, they could collect more information:

The founders, (they were a handful of Kenyans, who knew each other from working as bloggers) wanted to be aware of what was happening, so they were reading everything, checking twitter and reading everyone's blogs. In a traditional world, it's the journalists who are out there, producing good and validated information, but that's only really five pairs of eyes looking at what's going on, and there are so many people who could be out there contributing, texting in everything they knew. And so the founders started thinking, is there a technology that can automate what they were manually doing.¹⁰⁷

Following the first deployment of Ushahidi, the founders decided to make their software open-source, i.e. available to be used by anyone or any organisation. Manning estimates that there have been, to date, over 100,000 deployments of Ushahidi; however, this is difficult to measure given the open-source nature of the platform.¹⁰⁸

Crowdsourcing platforms are often used, in a humanitarian context, following a natural disaster, such as the Haiti Earthquake Crisis Map,¹⁰⁹ or to track events during a conflict, such as the currently on-going Syria Tracker,¹¹⁰ or the Libya Crisis Map¹¹¹ that was active during the Libyan civil war. Crowdsourcing platforms have also been utilised to conduct election monitoring, through soliciting information from observers at various polling stations around a country. Although many crowdsourcing platforms in the humanitarian context collect and host data related to human rights abuses, HROs have yet to fully utilise crowdsourcing platforms for their own data collection.¹¹² This was evident by only 15% of survey respondents stating that their organisation has deployed

¹⁰⁷ Manning [n 36].

¹⁰⁸ Ibid.

¹⁰⁹ The Haiti Earthquake Crisis Map has been highly applauded and highly criticised by many in the humanitarian and human rights documentation communities. Fascinating final reflections on the successes and challenges faced by Ushahidi when deploying the platform can be found here: <https://www.ushahidi.com/blog/2010/04/15/crisis-mapping-haiti-some-final-reflections>

¹¹⁰ The on-going live Syria Tracker can be viewed here: <http://syria.liveuamap.com/>

¹¹¹ An evaluation of the successes and challenges during the deployment of the Libya Crisis Map can be found here: <http://www.standbytaskforce.org/2011/09/01/libya-crisis-map-report/>

¹¹² Heinzelman & Meier [n 43] p. 130.

its own crowdsourcing platform. Deploying a crowdsourcing platform can be labour intensive, often requiring an HRO to hire additional staff to oversee the platform, which many HROs simply do not have the capacity to do.¹¹³ Given this, it is more common for researchers to reference and collect data from crowdsourcing platforms managed by other organisations or volunteers; 24% of survey respondents who use crowdsourcing platforms in their research rely on data from externally managed platforms. Of the respondents who use crowdsourcing platforms to collect data, 69% indicated that they do so to find the locations of where particular events have taken place, given that many crowdsourcing platforms map out where their aggregated data have been derived from. Additionally, 63% of respondents selected that they use crowdsourcing platforms to corroborate evidence that they have collected independently, and 63% also indicated that they use these platforms to examine trends on a specific topic or region.

2.3.2. Benefits of crowdsourcing platforms for fact-finding

Many of the benefits derived from using social media to collect data are also applicable to crowdsourcing applications, given that crowdsourcing platforms also allow researchers to access new information sources, collect CGM, track events in real time, and circumvent controlled information. However, in order to prevent redundancy, the benefits outlined below are unique to crowdsourcing platforms, and include the following: 1) the ability for researchers to clearly visualise mass quantities of data on a map; 2) the expanded reach researchers gain through networks of solicited crowdsourcing contributors; 3) the ability to collect data from ‘off-line’ sources; and 4) the ability to conduct non-probability sampling.

2.3.2.1. Clear visualisation of data and trends

Crowdsourcing platforms often map out where data are being submitted from, or where an event, which has been reported in a citizen submission, has taken place. Given that all of the data, submitted directly by citizen contributors or aggregated through other online sources, appears on a single map, it makes it easier for researchers to identify particular hot-spots

¹¹³ Survey.

of activity. For Seif El Nasr, Syria Team researcher with the OHCHR, the Syria Tracker has helped tremendously for this reason:

It's a tool that allows us to have the big picture of what is happening in the country on a daily basis. It allows us to have a sense of what is happening by looking in one place instead of looking through dozens of YouTube channels, Twitter feeds or Facebook accounts, or other open sources.¹¹⁴

Not only do crowdsourcing platforms save time for researchers by creating a single website to visit, they also make understanding the data easier through the visual element of a map.¹¹⁵ Additionally, having data aggregated onto one platform helps researchers mine through it to identify trends. For example, Seif El Nasr uses the Syria Tracker to distinguish the types of violations taking place across Syria:

Over time, it can allow us to identify trends and patterns of violations of international law. In a context like Syria, and with our limited resources, we don't claim to know everything that is happening. We try to look at major incidents, major violations and abuses of IHRL and IHL.¹¹⁶

2.3.2.2. *Expands reach through large networks*

Given that crowdsourcing platforms not only aggregate data from online sources (social media, traditional media, and blogs) but also rely on volunteer networks, hired observers or solicited citizen submissions, the reach of crowdsourcing platforms is wide. An example of this expanded reach comes from the platform developed by the International Foundation for Electoral Systems (IFES) with support from HRW, to monitor the 2010 Burundi elections.¹¹⁷ The platform relied on a network of 500 trained election observers,¹¹⁸ who would submit reports about events from polling stations throughout the country. Given this countrywide network, the data collected was useful for Ghoshal, the HRW researcher in-country at that time monitoring the elections:

It was more than we were capable of getting through other channels, and of course some of it wasn't true, but it was still a large amount of information

¹¹⁴ Seif El Nasr [n 12].

¹¹⁵ Iacucci, 2013.

¹¹⁶ Ibid.

¹¹⁷ Ghoshal [n 104].

¹¹⁸ Ibid.

coming in that we could then work with. And we could say, “wow it looks like a lot of things going on in this particular province,” so we could then go to that province to investigate what was going on.¹¹⁹

Researchers can take advantage of these networks by collecting vast quantities of data, from locations they may not have access to, and at a much faster speed. Manning, COO of Ushahidi, believes these networks provide a more efficient way to collect data:

It lets you get a larger reach. 40,000 reports were gathered in the 2008 Kenya election violence; 5656 reports have been gathered by the Syria Tracker. It’s vastly more efficient and less costly to crowdsource than pay an army of people to do those interviews. How long and how much would it have cost interviewers to get those reports in Syria?¹²⁰

2.3.2.3. *Aggregates data from offline devices*

As outlined above, crowdsourcing platforms also rely on data from ‘off-line’ contributors, who can submit reports to a central number through SMS. These reports are then uploaded to the platform and mapped by an administrator. In some ways, this helps overcome the digital divide for citizens without internet access, who still want to submit information to the platform (although division still exists within telecommunications access, discussed further in chapter five). Some crowdsourcing platforms, such as The LRA Crisis Tracker,¹²¹ go even further in collecting ‘off-line’ data. The LRA Crisis Tracker collects data from trained volunteers, who live in remote villages throughout the Democratic Republic of the Congo and the Central African Republic and submit daily updates on LRA activity in their region on HF radios.¹²² The data are then analysed, crosschecked, rated for its level of authenticity, and uploaded onto an online map by an administrator. Paul Ronan, LRA Crisis Tracker Co-founder and Project Director, explains the rationale for crowdsourcing data in this way:

The reason why we went with HF radio, and it has worked, is because there was a history of communities having radios in towns, to communicate between

¹¹⁹ Ghoshal [n 104].

¹²⁰ Manning [n 36].

¹²¹ The LRA Crisis Tracker can be viewed here: <https://lracrisistracker.com/>

¹²² Interview with Paul Ronan, Project Director and Co-Founder, LRA Crisis Tracker (Phone, 26 April 2016)

towns. So these communities had a *history of using this technology, so we are taking a local idea and building on it.*¹²³

Researchers could benefit through crowdsourcing platforms that have invested in and created these networks, allowing them to collect data they may not otherwise have access to, as Ronan noted, ‘In this part of the world, there’s very little data to be had, so you have this foundation set of data that would be really useful.’¹²⁴

2.3.2.4. *The ability to conduct non-probability sampling*

Through collecting information from online and ‘off-line’ sources, crowdsourcing platforms aggregate large quantities of data. This mass data generates statistical and quantitative data that could be useful to researchers to support and corroborate qualitative information. Essentially, crowdsourcing is a form of non-probability sampling, ‘In the field of statistics, this sampling technique describes an approach in which some units of the population have no chance of being selected or where the probability of selection cannot be accurately determined.’¹²⁵

The benefit of non-probability sampling in a humanitarian or human rights context is hotly debated¹²⁶ and will be discussed further in chapter five. However, as argued by crowdsourcing expert Patrick Meier, of iRevolution, although non-probability sampling is a form of sampling that does not include the entire population, it does provide ‘a quick way to collect and analyse data in a range of settings with diverse populations. The approach is also a cost-efficient means of greatly increasing the sample, thus enabling more frequent measurement.’¹²⁷ In regions where little or no statistical data exist, and in places where events are ongoing, it can be difficult to conduct traditional, more inclusive censuses collecting quantitative data. Therefore the quantitative data generated by crowdsourcing platforms through non-probability sampling could be of benefit to researchers.

¹²³ Ronan [n 122].

¹²⁴ Ibid.

¹²⁵ Meier, 2011.

¹²⁶ There is an ongoing public debate between Patrick Meier, of iRevolution, and Patrick Ball, founder of HRDAG, on the merits of crowdsourcing platforms to conduct sampling. This debate is exemplified in the following blog and its corresponding comment section: <https://irevolutions.org/2010/04/25/veil-ignorance/>

¹²⁷ Meier [n 125] pp. 8–9.

3.

SATELLITE IMAGERY: PRACTICAL CHALLENGES, ETHICAL DEBATES, AND RECOMMENDATIONS

Section 3.1 will focus on the practical challenges and ethical issues researchers face when using satellite imagery to collect data. Section 3.2 will address each of the identified challenges and provide possible solutions and recommendations specifically for researchers and HROs, to overcome them.

3.1 PRACTICAL CHALLENGES AND ETHICAL DEBATES

3.1.1. Misunderstanding satellite imagery and its relevance

As outlined in section 2.1, most HROs do not have in-house satellite analysts or satellite imagery experts and therefore rely on outside expertise when utilising satellite imagery. This poses two challenges, first, in ensuring that fact-finders are aware of the capabilities of satellites and when they should be utilised in human rights research,¹²⁸ and second, in ensuring that researchers understand the specific needs of satellite analysts when collaborating with them. For the purposes of this thesis, these two challenges have been separated into two sections, but the author believes they both derive from the root cause of limited training opportunities for researchers in satellite imagery.¹²⁹ This lack of training was evident through the author's survey as 39% of respondents indicated that they had used satellite imagery, yet 73% of these respondents stated they had not received any training in satellite

¹²⁸ Urscheler [n 70].

¹²⁹ Survey.

imagery. Of the 61% of respondents who indicated that they do not use satellite imagery, 50% stated that they do not because they have not received the necessary training. The OHCHR has only begun to conduct this training for Human Rights Officers in the past year,¹³⁰ and many smaller HROs lack the capacity or understanding to offer this training to their staff at all.¹³¹ AI and HRW are further ahead when it comes to ensuring field staff are aware of the capabilities of satellites. However, even within these organisations, the lack of understanding amongst researchers in the technical aspects and use of satellite imagery as a research tool remains a challenge.¹³²

Given the lack of training, researchers face a challenge in understanding what satellites are capable of capturing and many have unrealistic expectations, as identified by Lars Bromley, Principal Analyst and Senior Advisor at UNOSAT:

Many have this impression that imagery is collected all over the world, every single day...Some of what they want us to do, we just can't do, it's just not possible. We explain that we can only see physical changes.¹³³

Beyond misunderstanding the capabilities of satellites, researchers also face a challenge in understanding when satellite imagery would actually be relevant to use in an investigation. Lyons of HRW, and formerly a satellite analyst with UNOSAT, has witnessed this throughout his career:

When people and other groups ask for satellite imagery, they don't necessarily need it. Often UN agencies will ask for imagery, more because they think it's part of the standard checklist, so they run through the motions and ask for all sort of things, simply because it's the auto-pilot default list. They don't have a reason.¹³⁴

3.1.2. The researcher and satellite analyst relationship

Given the lack of understanding of the capabilities of satellites and their relevance, researchers also face a challenge when having to

¹³⁰ Urscheler [n 70].

¹³¹ Survey.

¹³² Survey.

¹³³ Bromley [n 55].

¹³⁴ Lyons [n 45].

work with a satellite analyst, who is the individual that processes the raw image data coming from the satellites, analyses it, and ultimately produces a report with their findings. For organisations with an in-house satellite analyst, such as HRW, this is not as much of a barrier to overcome, given the ease with which researchers can communicate with the analyst directly. However, for HROs that rely on external partners to procure the images and produce the analysis for them, the working relationship with an analyst can be a challenge.¹³⁵ Urscheler, the liaison between UNOSAT and OHCHR Human Rights Officers, has noticed this barrier, ‘Sometimes from the emails, I can see misunderstandings. UNOSAT staff are not trained on human rights, and our people in the field have no clue about satellite imagery.’¹³⁶

Researchers not understanding the needs of satellite analysts can slow the research process down and waste vital time and resources. An example of this is when researchers approach satellite analysts without an exact location for the region they want to investigate, as experienced by Wolfinbarger of the AAAS:

We’ve bought satellite images not knowing where we were looking, and come up with nothing because we didn’t know the location well enough. Shots in the dark that cost \$2000 are not fun.¹³⁷

However, for researchers, identifying specific locations in advance can pose a challenge, Urscheler of the OHCHR explains,

It’s sometimes quite difficult to send the coordinates and these specific locations, because in the field they may know the name of a town, but then when looking at Google maps they may not be able to find it, especially if they haven’t travelled to the region.¹³⁸

Although satellite imagery is sometimes used as a way to find locations, it is best utilised when the location is already identified, ‘High-resolution satellites don’t have as much of a wide-area search as possible, so the ability to focus is key.’¹³⁹

Beyond identifying locations, another challenge researchers face

¹³⁵ Rasco [n 57].

¹³⁶ Urscheler [n 70].

¹³⁷ Wolfinbarger [n 53].

¹³⁸ Urscheler [n 70].

¹³⁹ Rasco [n 57].

when working with external satellite analysts is the need to release information to them, which may be considered confidential. Many researchers are reluctant to release information or are under instruction not to, posing a challenge to the analysts who need these data to conduct a more effective analysis. Bromley of UNOSAT believes this is a major challenge, particularly within the UN system:

One of the problems we have is that OHCHR staff have to keep things confidential, they can't just send an email with everything on Syria. So it ends up being a double-blind analysis, where they are asking for certain things, but not telling me what they are looking for. The problem is that there might be something in the reporting that could really help.¹⁴⁰

Without detailed information, analysts simply do not know what they should be looking for and cannot do their job effectively; however, this poses a challenge for researchers who are often under strict regulations to keep information confidential.

3.1.3. *Cost*

The high cost to procure satellite images is a practical challenge faced by many HROs. With limited budgets, taking the chance that a satellite investigation will yield successful results can be risky.¹⁴¹ In the author's survey, 30% of respondents who stated that they do not use satellite imagery indicated that this was due to the limited financial resources of their organisation. Procuring images from a satellite companies archives can be free or less costly, and is a possible solution for HROs that will be further elaborated on below; however, procuring new image data for a specific date and time in the future remains costly and out of reach for many HROs.

3.1.4. *National laws, competing interests, and information politics*

A practical challenge and an ethical issue that researchers could potentially face when procuring satellite images (either the raw image data and/or the imagery analysis from a private satellite company), is

¹⁴⁰ Bromley [n 55].

¹⁴¹ Wolfenbarger [n 53].

how the global satellite market is influenced by outside factors, including national laws, competing client interests, and information politics.

As outlined in section 2.1.2.1., satellites are regulated internationally by the Outer Space Treaty and are essentially ‘above the law’. However, satellite companies are subject to the national laws of the country in which they are based, and this legislation can prevent them from imaging particular regions or activities. For example, The National Land Remote Sensing Act of 1992 is a US law that governs what US-based satellite companies can image, ‘Within that law is the Kyl-Bingaman amendment. That amendment is the one that says any imagery collected of Israel, and from current de facto Israeli borders, has to be downgraded to a lesser quality.’¹⁴² This restricts researchers relying on imagery from DigitalGlobe, arguably the largest satellite provider in the world. Additionally, Airbus, also one of the largest satellite imagery providers, downgrades imagery for Israel, but not over Gaza or the West Bank.¹⁴³ This poses a challenge to researchers focusing on these regions, forcing them to go to a smaller satellite imagery provider, who may not have the archives or high-resolution images of DigitalGlobe or Airbus.

In the US, national law also prohibits the release of information that could jeopardise national security, preventing US satellite providers, such as DigitalGlobe, from imaging anything related to the US military.¹⁴⁴ This has been a challenge for AI, who often rely on DigitalGlobe’s imagery and analysis; Christoph Koettl, AI Senior Analyst explains, ‘It’s a private company that sells the imagery, so they are regulated by US law, so if there is a law that says you can’t do certain things then that’s the limitations that are difficult for us to work around.’¹⁴⁵

Beyond national laws restricting what satellite companies can image, there are also private deals worked out between satellite companies and governments,¹⁴⁶ or agreements made between satellite companies and their clients that can pose practical and ethical challenges to HROs relying on these private entities for images, as explained by Heath Rasco, Director of Technical Programs at DigitalGlobe:

We have competing customers competing for time on orbit...The Department

¹⁴² Bromley [n 55].

¹⁴³ Ibid.

¹⁴⁴ Rasco [n 57].

¹⁴⁵ Koettl [n 52].

¹⁴⁶ Wolfenbarger [n 53].

of Defence is our largest client, so we may have DOD requirements that are high priority and they pay the most dollars for time on orbit, so if it's their dollars competing for time, it's usually their dollars that are going to win.¹⁴⁷

Additionally, the issue of competing client interests impacting how satellite companies might prioritise requests from HROs, competing interests could also jeopardise the confidentiality of an investigation, if the focus of a particular investigation also happens to be a client of the satellite company. Rasco of DigitalGlobe acknowledges that competing client interests has been a challenge:

We do have sticky situations where we may have a customer that wants to highlight, let's say, an environmental disaster in the Niger Delta from oil extraction. And another customer may be Shell Oil that is looking for possible bunkering of their oil in an area. And then we have an issue, where one customer is complicit with another, that we sometimes have to work around or have to inform the other customer of what is going on.¹⁴⁸

Beyond national laws, and competing clients' interests, researchers also face a challenge when it comes to global information politics and how politics impact which satellite company an HRO can approach when procuring certain satellite images or analysis, Bromley of UNOSAT elaborates:

For Syria, where now there is an American ceasefire monitor, a Russian ceasefire monitor, a UN ceasefire fire monitor group. If we were going to do something that was going to tick-off the Russian side of things, we would certainly get the Airbus image; we wouldn't get the US DigitalGlobe image, to try and make a point to the Russian side...If we were ever going to show something that would annoy one side or the other in a particular area, we would ask, do we want the American source on this or European source on this?¹⁴⁹

According to Bromley, ticking-off the wrong country could have serious repercussions on the satellite company, so the satellite companies themselves may be hesitant to collect data on certain issues or in certain regions:

There is an unspoken thing going on out there. These satellites are expensive.

¹⁴⁷ Rasco [n 57].

¹⁴⁸ Ibid.

¹⁴⁹ Bromley [n 55].

And there are maybe seven to eight countries in the world that can shoot down satellites or blind them with a laser, so I think the companies themselves would be a bit cautious about imaging locations in certain countries.¹⁵⁰

3.1.5. Misinterpretation and bias in satellite imagery analysis

There is potential for misinterpretations and bias in satellite imagery analysis, posing both practical challenges and ethical concerns for human rights researchers, particularly those relying on imagery analysis reports from external partners and incorporating the findings into their own human rights reports.

Imagery analysts can make mistakes and misinterpret an image, and as Lyons of HRW has witnessed, serious errors with potentially large consequences are currently being made:

There is concrete evidence that significant mistakes are being made that are not being understood or recognised. Recently, different UN satellite products have wrongly put Syrians in a different country; they've described them in one country when they are in fact in another. Or they've grossly exaggerated or under estimated the levels of destruction in a given village or town, for example. And I've seen in multiple instances there is no basis for which people could evaluate those satellite-based claims.¹⁵¹

The underlying problem is that many researchers do not have the skills to critically examine and cross-reference the imagery analysis reports produced by external experts, therefore they are unable to identify errors or misinterpretations and trust the analyst's findings verbatim. Lyons expands on the challenge of limited peer-review over satellite imagery analysis:

They [researchers] very often collect traditional forms of research, they know how to evaluate it, and that they require multiple independent sources to validate and cross-reference particular allegations. But when it comes to information derived from satellites or other new technology, then they are much less critical and only accept a single source, when they would never accept a single source in any other context. This is exposing investigations to potential weakness. It's creating vulnerabilities in a particular investigation that they are not aware of.¹⁵²

¹⁵⁰ Ibid.

¹⁵¹ Lyons [n 45].

¹⁵² Ibid.

Beyond misinterpretations, there is also potential for bias to influence the outcome of a satellite imagery analysis. When HROs rely on external analysis, they must consider the outside influences, as outlined in section 3.1.4., of the institution providing the analysis. They also must consider how their role as a client of a private company, paying for imagery, may impact the analysis. Wolfinbarger of the AAAS has trepidations over how HROs paying for satellite analysis reports impacts the credibility of the reports:

I have a lot of concerns about the objectivity of satellite imagery analysis that is increasingly being conducted or commissioned. I'm glad they are using the technology, but there is not enough questioning of the motives behind what people are doing and how that might impact the resulting analysis.¹⁵³

In addition to the HROs being paying clients, the background of individual satellite analysts may also impact the satellite imagery analysis report they produce. For example, given that DigitalGlobe satellite analysts predominantly come from a military background,¹⁵⁴ this could impact what they are looking for in an image and their final findings. Wolfinbarger has observed this inherent slant in DigitalGlobe's imagery analysis reports:

How does the background of many of these people as former NGA or defence analysts impact their results? Having a human rights point of view is very different, and it comes out in the reports. Their work is very heavily weighted towards military-related observations.¹⁵⁵

Human rights organisations have a responsibility to ensure the information they disseminate is accurate, otherwise, they are potentially spreading false information, which is an ethical issue, and opening themselves up to questioning over their credibility and research methodology. Urscheler has seen the impact that poorly analysed satellite imagery has had:

Some NGOs have used satellite images in the past that have not been well analysed, and due to this analysis, there was a lot of misinformation and misinterpretation [spread]. It really needs to be done in a professional way, otherwise it's very confusing.¹⁵⁶

¹⁵³ Wolfinbarger [n 53].

¹⁵⁴ Rasco [n 57].

¹⁵⁵ Wolfinbarger [n 53].

¹⁵⁶ Urscheler [n 70].

3.1.6. *Geo-location and re-victimisation*

One of the ethical debates for researchers using satellite imagery is around geo-location, and whether or not they should release the exact coordinates of the place that has been imaged by a satellite, along with the image. Wolfinbarger feels that releasing satellite imagery coordinates to the public could lead to re-victimisation and the targeting of victims of human rights abuses in that particular place:

There are so many things that could come out of this that are also bad. We can't control what people do with it afterwards...Think about the people on the ground, what about refugees in an unprotected camp, are you providing a roadmap to people who can target them?¹⁵⁷

Given the relative newness of satellite imagery in human rights fact-finding, there is limited discussion and research into the ethics of publically releasing coordinates along with a satellite image, or the need for informed consent before doing so: 'There really are no guidelines on the best practice for geo-location.'¹⁵⁸ Due to the lack of literature and guidelines in this specific area, it is up to individual organisations and researchers to develop their own standards, which risks consistency amongst HROs and researchers.

3.2 RECOMMENDATIONS FOR RESEARCHERS AND HROS

3.2.1. *The basics of satellite imagery and its relevance*¹⁵⁹

In order to address the challenge of researchers not understanding the capabilities of satellites and their relevance in human rights investigations, this section will provide guidance to researchers on the basics of satellite imagery, 'Once people understand how it works they can automatically start filtering their research ideas.'¹⁶⁰

¹⁵⁷ Wolfinbarger [n 53].

¹⁵⁸ Ibid.

¹⁵⁹ The following two sections will summarise basic guidance for researchers, however, very precise and detailed guidelines for satellite imagery procurement and analysis have been created by the AAAS, and are available here: <http://www.aaas.org/page/high-resolution-satellite-imagery-ordering-and-analysis-handbook>

¹⁶⁰ Wolfinbarger [n 53].

First, researchers must understand that satellites are only effective in situations where physical changes to the earth can be observed. Wolfenbarger of the AAAS suggests thinking ‘about whether or not this is something that’s visible from overhead. We are not going to see bullet holes in the sides of buildings because we cannot see the sides of buildings with the top-down view from the satellites.’¹⁶¹ The AAAS recommends researchers ask themselves the following questions to identify if a satellite imagery investigation is worthwhile:

Did the event in question involve significant changes to buildings, roads, vegetation cover, vehicles or other features larger than 2–3 square meters? Is the precise location of the event in question known, or can it be determined? Is the date of the event known, or can it be determined? Did the event occur after 1999, when the first commercial high-resolution satellite was launched?¹⁶²

Researchers should also keep in mind that different satellite companies provide different benefits, so when sourcing images they should go through a checklist of their needs to identify which satellite company to work with. Rasco of DigitalGlobe explains:

Small satellites don’t have good resolution but may have a better re-visit time. They may launch ten satellites, but their imagery isn’t as good, but they can cover more ground. A company with high-resolution pictures might have less satellites that can’t revisit as often. If it’s a fast-moving thing, you may want a small satellite.¹⁶³

The final, broader recommendation, is for HROs that are utilising satellite imagery to begin training research staff in how they operate. According to Urscheler of the OHCHR, the OHCHR is starting to realise the importance of this training, and are working towards improving its internal capacity:

What we’ve discussed with UNOSAT is to train some more people at OHCHR. There’s also a discussion to have a UNOSAT person based here for a few months to develop a better understanding within the OHCHR.¹⁶⁴

¹⁶¹ Wolfenbarger [n 53].

¹⁶² ‘High-Resolution Satellite Imagery Ordering And Analysis Handbook’, AAAS - The World’s Largest General Scientific Society, 2013.

¹⁶³ Rasco [n 57].

¹⁶⁴ Urscheler [n 70].

3.2.2. *Effective researcher and analyst dialogue*

Following the above guidance, if a researcher decides satellite imagery is still worthwhile for their research, they will then need to work with a satellite analyst. The following recommendation concerns how to make the researcher and analyst dialogue as effective as possible, to ensure the best possible imagery analysis.

The primary thing a satellite analyst needs to begin their work is a location. Bromley of UNOSAT suggests the following to researchers:

The fundamental thing is do your own homework and figure out where your locations are, ideally, you send me a latitude and longitude, or a KML, a Google earth file. The toughest cases are when people come to us with no location.¹⁶⁵

To help identify locations, ‘researchers should search for the names of towns, rivers, landmarks, and other features from the sources that describe the events in question’.¹⁶⁶ A useful tool for researchers trying to determine a location is Google Earth, where they can begin searching themselves and narrow down the region they would like to image.¹⁶⁷ If possible, location information can also be collected through saving GPS coordinates on a smartphone while in the field.¹⁶⁸

In cases where the researcher may be utilising satellite imagery to *find* a location, a slightly tougher case for satellite analysts, the researcher should be prepared to provide detailed information to the analyst. An example of the type of detail a satellite analyst needs comes from a UNOSAT investigation that Bromley worked on:

Years ago we were looking at Eritrean detention facilities, and there was some line in a witness statement that talked about a couple of big bushes outside a police station that would get flowers three months out of the year, and we located the station because of the big bushes. If we could actually get into the raw reporting, we might be able to find a lot more than what we are able to find currently.¹⁶⁹

As demonstrated through this example, the information required by

¹⁶⁵ Bromley [n 55].

¹⁶⁶ AAAS Handbook [n 162].

¹⁶⁷ Bromley [n 55].

¹⁶⁸ Rasco [n 57].

¹⁶⁹ Bromley [n 55].

a satellite analyst does not always need to jeopardise the confidentiality of an investigation. If researchers, due to confidentiality issues, cannot provide the raw research material or notes to an analyst, the recommendation is for them to mine through their material for descriptive statements, such as the example of ‘big flowering bushes’ outlined above. This detail could assist an analyst to identify a location and does not jeopardise confidentiality. Beyond this, there may be other creative ways to help identify locations. An example comes from the COI on North Korea, which relied on a drawing of a detention camp, produced by a detainee who had escaped the camp, to help identify the location of the camp in question.¹⁷⁰

Once the location is identified, it is then essential for the researcher to maintain regular communication with the analyst.¹⁷¹ According to Rasco of DigitalGlobe, this helps the analyst know what to look for in the images and better understand the group, place or issue a researcher is tracking:

Have as much of an analyst to analyst exchange as you can possibly have...I wouldn't assume that we know everything about an area, so if there are specific characteristics of the group that you are trying to follow or watch, we would like to work with you to understand what those are.¹⁷²

3.2.3. *Overcoming cost*

The author's recommendation to researchers and HROs to overcome the challenge of cost is to look into developing partnerships with other HROs investigating the same issue or region and pool resources. This cross-sector collaboration could help strengthen both investigations and minimise costs when procuring images and/or imagery analysis. Another recommendation is to partner with groups like the AAAS, which work regularly with HROs on investigations and cover the satellite image costs.¹⁷³ Although the AAAS cannot take on every HRO that approaches them, according to Wolfenbarger, they are working towards helping HROs utilise Geospatial Technology in other less costly ways:

¹⁷⁰ Urscheler [n 70].

¹⁷¹ Rasco [n 57].

¹⁷² Ibid.

¹⁷³ Wolfenbarger [n 53].

So much we've focused on has been out of reach for organisations when it comes to cost, so we want to develop tools that groups could do on their own. For example, something like the Physicians for Human Rights maps. They have an interactive map of attacks on healthcare workers and medical facilities in Syria, and so they gather ground reports, social media, media reports and use it to map out attacks... That type of thing is really accessible to small human rights organisations. So we're hoping to develop more accessible methods that people are more likely to do on their own.¹⁷⁴

Human rights organisations should also note that purchasing new images, for a specific date in future, is much more costly than purchasing images from satellite imagery archives, which are sometimes available for free on satellite providers' websites or are significantly less expensive to procure. This could help HROs that are researching past events and do not necessarily need to procure new images.¹⁷⁵

3.2.4. Overcoming outside influence

Researchers cannot directly control the outside influences of private satellite companies; however, they do have a choice when deciding from which provider to procure satellite images and/or satellite imagery analysis. The recommendation of the author is for researchers and HROs to become more familiar with the satellite companies they are approaching for imagery. Human rights organisations and fact-finders should conduct research into the satellite companies other clients or relationships, to see if there may be competing interests that could jeopardise their work. Additionally, HROs and researchers should become familiar with national legislation that could prevent certain images from being captured by particular satellite imagery providers. Based on this information, HROs and fact-finders can be more selective about which companies they rely on for images and/or analysis.

3.2.5. Improved cross-referencing and peer-review

In order to prevent misinterpretation or bias making its way into a human rights report, researchers and HROs should implement stronger

¹⁷⁴ Ibid.

¹⁷⁵ More detailed information on the costs for satellite imaging and on how to access individual satellite companies archives have been developed by the AAAS and are available here: <http://www.aaas.org/page/high-resolution-satellite-imagery-ordering-and-analysis-handbook>.

peer-review and cross-referencing processes for satellite imagery analysis.¹⁷⁶ Additionally, they should use satellite imagery in conjunction with traditional research methods.

If it is not possible for an HRO to hire staff with expertise in satellite analysis, but they are still procuring satellite images and analysis from external actors, the author recommends that they invest in training at least one staff member in how to properly question and cross-reference satellite imagery reports. This will help improve an HROs ability to cross-examine satellite imagery data.

Verifying the findings of satellite imagery analysis also relies heavily on traditional research methods. Without ground research, the satellite imagery reports can provide little proof or evidence of human rights violations. The next recommendation, beyond improved peer-review, is for HROs and researchers to ensure the satellite imagery they are procuring is only one piece of a larger investigation. Although satellite imagery may make a strong point, without facts verified through ground research or other means, it should not be considered comprehensive proof of an incident. An example of best practice for marrying satellite imagery research with traditional research methods comes from an HRW investigation on Burma that Lyons worked closely with a field researcher to conduct:

In Burma, there had been reports of a violent round of arson, directed against a Muslim community. They had been attacked, and there had been reports of wholesale neighbourhood destruction...I got satellite imagery in 12 hours, it showed conclusive destruction. But we knew there had been reports of earlier rounds of this kind of community destruction in the area, and my worry was that we would be conflating different events and reporting it as one, even though the perpetrators might have been the same, but hypothetically, maybe there was a village fire, and that would have had catastrophic reputational consequences...I called the researcher on the ground, he had already been to the village and he was absolutely categorical that everything I saw had been destroyed in last 24 hours... And that was the magical confirmation I needed.¹⁷⁷

The final recommendation for HROs and researchers, specifically those relying on outside analysis, is to request a detailed breakdown of how the imagery was processed and analysed in the same way a court or

¹⁷⁶ Lyons [n 45].

¹⁷⁷ Lyons [n 45].

commission would if requesting satellite imagery analysis for evidence in a trial. According to Wolfenbarger, when working with the ICC, the AAAS provides a detailed breakdown of their working process:

Chain of custody of the imagery is really important...As soon as we get the imagery we make a copy of it and leave the original files. We then do our analysis on copies, and we document every single thing we do in a log, and then we put together a report, and also a file that explains every single step of the process and what we did, and the people involved and their credentials. And then we hand everything over.¹⁷⁸

It is recommended that HROs and researchers begin requesting this process data from intermediary partners and satellite companies alongside the satellite imagery analysis report. This could help them better understand the analysis method, while also ensuring partners remain accountable and transparent about their processes.

3.2.6. To locate or not, that is the question

Given the variety of situations for which human rights monitors and investigators may be utilising satellite imagery and the lack of ethical standards on geo-location,¹⁷⁹ the recommendation of the author is for HROs to develop internal standards around geo-location, dictating when it is acceptable to release coordinates alongside satellite imagery. It is recommended that these internal policies follow the protection principles, such as do no harm, outlined in chapter two of the OHCHR's monitoring manual.¹⁸⁰ Wolfenbarger, also recommends:

When it comes to releasing information, think about your motives for releasing information. Do you just want to be the first to break a story? That's not a good reason because it could cause people to be re-targeted.¹⁸¹

When it comes to active combat zones, the recommendation is to follow the practice of the UN, explained further by UNOSAT analyst

¹⁷⁸ Wolfenbarger [n 53].

¹⁷⁹ Ibid.

¹⁸⁰ Chapter two of the OHCHR's Manual on Human Rights Monitoring, outlining the principles of human rights monitoring, can be found at: <http://www.ohchr.org/Documents/Publications/Chapter02-MHRM.pdf>

¹⁸¹ Wolfenbarger [n 53].

Bromley, ‘We have a basic policy, which is common in the UN, if we are looking at an active combat situation, we will simply not release anything that would benefit one side or the other.’¹⁸² AI also follows this practice and withholds coordinates when releasing satellite images of combat situations.¹⁸³

Wolfenbarger has recently been granted to conduct research on the ethics and standards for geo-location in combat situations. This research, in the future, may also help guide HROs’ actions when it comes to deciding whether or not to release coordinates.

¹⁸² Bromley [n 55].

¹⁸³ Koettl [n 52].

4.

SOCIAL MEDIA: PRACTICAL CHALLENGES, ETHICAL DEBATES, AND RECOMMENDATIONS

Section 4.1 will focus on the practical challenges and ethical issues researchers face when using social media to collect data in their human rights monitoring and investigation work. Section 4.2 will address each of the identified challenges, and focus on possible solutions and recommendations specifically for researchers and HROs, to overcome these challenges.

4.1 PRACTICAL CHALLENGES AND ETHICAL DEBATES

4.1.1. Verifying and authenticating social media derived data

Verifying the accuracy of information is essential to ensuring the credibility and strength of human rights monitoring and investigations. Human rights organisations have developed robust fact-checking and verification practices to ensure researchers are collecting reliable and accurate data. Without this, the perpetrators of human rights abuses can more easily discredit allegations made against them and question the integrity of HROs. In the author's survey, 82% of respondents indicated that they use social media in their research work, yet the most common challenge these respondents identified was verifying the data collected through it, with 56% stating it was difficult and time-consuming to verify the sources and accuracy of social media derived information.

The data derived from social media, most often CGM, is easily shared and/or manipulated once posted onto a social media platform, making it difficult for researchers to track the contents origins or assess the reliability of the source, 'The material is shared with the wrong context, is old, or is outright manipulated, posing a high risk of

inaccuracy.¹⁸⁴ Researchers, such as Nicholas McGeehan of HRW, are acutely aware of the risks posed by trusting social media content without verification, ‘You are alert to the possibility that someone may be trying to manipulate you. And you are alert to the possibility, that if you are duped, or something isn’t as it’s claimed to be, that will undermine your work and the work of your colleagues.’¹⁸⁵ Despite awareness of this issue, researchers still face a challenge in verifying social media data. Probert, research consultant with Special Rapporteur Christof Heyns, believes the verification challenge requires researchers to develop new skills in digital evidence authentication, ‘I think that evidence coming from ICT presents different kinds of verification challenges from what human rights investigators are used to, and relies on a different skill set to solve.’¹⁸⁶

Knowing who initially posted the social media content, and when or where it was produced, is essential to understanding the context behind it. This requires researchers to examine the contents metadata, ‘Metadata is information about the information in question—such as source, place, and time of production.’¹⁸⁷ However, examining metadata is a challenge for researchers when collecting CGM from particular social media platforms, such as YouTube, that strips the metadata from videos before they are uploaded.¹⁸⁸ Metadata becomes even more crucial if the material is destined for use as evidence in a court or tribunal, as noted by Christopher Gosnell, Defence Counsel at the ICC:

Metadata is important for everybody, it’s not even a question of defence versus prosecution, everyone should be able to have access to that so they can actually know the facts. If you are just tossing a video in, yes, it might be admissible, but it could create a lot of ambiguity. Especially if there is a misinterpretation or mislabeling. So having the metadata is extremely important for the integrity of proceedings, the efficiency of proceedings, and trying to get to the truth.¹⁸⁹

The verification challenge also relates to the ability of researchers to obtain informed consent from the citizens sharing content through social media, which can be a particularly challenging issue when the content

¹⁸⁴ Koettl, [n 26] p. 8.

¹⁸⁵ McGeehan [n 63].

¹⁸⁶ Probert [n 20].

¹⁸⁷ McPherson [n 8] p. 15.

¹⁸⁸ ‘Digital Fingerprints’, UC Berkeley School of Law, 2014, p. 6.

¹⁸⁹ Interview with Chris Gosnell, Defence Counsel, ICC (Phone, 29 April 2016).

is widely shared and the chain of custody is unknown. Additionally, gaining informed consent from individuals who may appear in a video poses both ethical and practical challenges to researchers. The issue of informed consent is addressed further in section 4.1.6.

4.1.2. *The digital divide*

The digital divide poses a challenge for researchers collecting information through social media platforms. Christof Heyns, Special Rapporteur on extrajudicial, summary or arbitrary executions, believes this is the greatest challenge facing researchers using ICT for documentation.¹⁹⁰ Many victims of human rights abuses simply do not have access to social media platforms to share information that could be collected by researchers. For researchers, the challenge is ensuring that they are not influenced to focus more on issues that generate social media content, explained further by research consultant Probert:

Your attention could be drawn to situations where there's a great deal of potential information coming your way about a situation that may be grave, but isn't necessarily the most grave, while a more serious situation that exists in a part of the world with less social media, can slip underneath your radar almost literally.¹⁹¹

Some researchers admit that the digital divide does prevent them from collecting data on certain issues or groups of people, but given their limited capacity, they can only focus on issues where there are data to be collected online. Poon, an AI researcher covering China has experienced this challenge first-hand:

There is a population of 1.3 billion people, but around half the population doesn't have internet. So it's really a big question, and also a question about resources to do research because typically getting information from certain areas is difficult...So for us, because of resource constraints, mainly we prioritise the things where we get more information...If the information is not available online, it is a big challenge.¹⁹²

¹⁹⁰ Interview with Christof Heyns, Special Rapporteur on extrajudicial, summary or arbitrary executions, Special Procedures, UN (Email, 19 April 2016).

¹⁹¹ Probert [n 20].

¹⁹² Poon [n 90].

One of the primary causes of the digital divide is a lack of technological infrastructure or resources to facilitate access to the internet, and in turn, social media.¹⁹³ Beyond this, is the issue of unequal access to the internet amongst individuals, specifically marginalised groups, even within the places where the technical infrastructure exists.¹⁹⁴ Given this, the data available on social media are not necessarily an accurate depiction of events and may be skewed by having only a small percentage of the population sharing or posting information. Anita Gohdes, a consultant with HRDAG, has concerns over the inaccurate representation of events driven by social media:

With the rise of social media, is the illusion of complete information. This idea that people know exactly what is going on in Syria or some country...There is a tonne of stuff happening that we don't know about, but by reading Twitter it seems as though we know everything that is happening.¹⁹⁵

4.1.3. *Information overload and mining Big Data*

The abundance of information now available on social media poses a challenge to researchers who must mine through it to find relevant data. In the author's survey, of the researchers who indicated that they use social media to collect information, 33% stated the data overload was a challenge they faced. This challenge is resulting 'in a shift from an environment where analysts struggled to collect even small amounts of human rights information to an environment where large amounts of data can be quickly and efficiently collected. Thus, the critical challenge today is to manage data effectively so as to make sense of the vast amounts of information.'¹⁹⁶ Depending on the situation a researcher is monitoring or investigating, the amount of social media data available can be vast and overwhelming, 'This means that identifying relevant information is like searching for a needle in a haystack.'¹⁹⁷ This information overload forces fact-finders to prioritise which issues to investigate. Although

¹⁹³ Interview with Rikke Frank Jørgensen, Senior Researcher, The Danish Institute for Human Rights (Phone, 20 April 2016).

¹⁹⁴ Ibid.

¹⁹⁵ Interview with Anita Gohdes, Consultant, Human Rights Documentation Analyst Group (Phone, 6 April 2016).

¹⁹⁶ Guberek & Silva, 2014, p. 25.

¹⁹⁷ McPherson [n 8] 15–16.

prioritising investigations is not a new issue for researchers,¹⁹⁸ it is a challenge that has been exasperated by social media. A human rights monitor working in Gaza before and after the 2014 conflict has faced this challenge and witnessed the way social media has changed fact-finding:

It [social media] has changed the way we can have access to endless amounts of violations, but in the same context, it is an overload. When you have a lot of incidents every single day, it can become overwhelming...And then you end up with questions like, 'okay well in this incident six people died, and this one, only one?' And then it is a question of priorities. Do I go with three dead or injured people? Some of these things you didn't have to think about in the past, but there is a lot more information now.¹⁹⁹

In the author's survey, when researchers were asked how they conducted their searches on social media, 57% indicated that they used keyword searches to find information, which poses another challenge related to the information overload. Daniel Neill, Director of the Event and Pattern Detection Laboratory at Carnegie Mellon University, who has developed software to mine through Big Data on Twitter, explains further:

The challenge of a keyword search is that you are going to be overwhelmed by false positives. The reoccurrence of a single word or hashtag in a particular Tweet is often not sufficient evidence that a pattern of interest is happening... If you do a very large manual search on all those individual keyword messages, you're just going to be overwhelmed with garbage.²⁰⁰

4.1.4. Disappearing CGM and safe storage

The content that researchers using social media rely on is susceptible to a number of risks for removal from social media platforms after being uploaded, and it 'might thus become irrelevant if not secured properly'.²⁰¹ Social media content can be removed or deleted for various reasons such as the following: 1) the individuals who posted it originally

¹⁹⁸ McGeehan [n 69].

¹⁹⁹ Gaza human rights monitor [n 91].

²⁰⁰ Interview with Daniel Neill, Director, Event and Pattern Detection Laboratory, Carnegie Mellon University (Phone, 20 April 2016).

²⁰¹ Koettl, [n 26] p. 8.

can remove it, sometimes out of fear or after being intimidated;²⁰² 2) it can be flagged for removal by other social media users, or by the social media platform itself if the uploader is violating terms of use;²⁰³ 3) it can be intercepted by governments or other authorities (an issue addressed further in the following section); or 4) it is simply vulnerable to the closures or changes of the private companies running the social media platforms. For example, ‘The closure of the Google Video hosting service, and with it the loss of a trove of human rights video, brought the risks of relying on mass commercial platforms to the fore.’²⁰⁴ The challenge for human rights fact-finders is to appropriately secure and store social media content before it is potentially removed.

Once social media data are saved or secured, the storage of the data also poses a practical and ethical challenge to researchers and HROs. Human rights organisations are at risk of being monitored or hacked by a range of actors, therefore jeopardising the security of their stored data, and subsequently the security of their sources. Tom Walker, Research Lead at The Engine Room, elaborates on the potential dangers of irresponsibly storing digital data:

When information is collected by human rights organisations, how will it be stored, and how long will it be kept? Let’s say data is collected now and its low risk, will it remain low risk later on? There is also the risk of data sets being joined up with other data sets, “the mosaic effect”.²⁰⁵

Human rights organisations and researchers now need to consider how they are storing digitally-sourced data, in particular, social media content, as it may require additional security measures and considerations than the data they have traditionally collected.

4.1.5. Security and surveillance

Using social media for human rights fact-finding poses both practical challenges and ethical concerns for researchers when it comes to security and surveillance. The practical challenge concerns how researchers can circumvent surveillance and monitoring, and the ethical issue concerns

²⁰² Padania et al., 2011, p. 22.

²⁰³ Ibid.

²⁰⁴ Padania et al., [n 202] 22.

²⁰⁵ Interview with Tom Walker, Research Lead, The Engine Room (Phone, 13 April 2016).

how to ensure the safety of sources and witnesses who may be connecting with human rights fact-finders through social media, and as a result, are put in harm's way.

The surveillance of human rights researchers is not a new phenomenon, for example, Manfred Nowak, Special Rapporteur on Torture between 2004 and 2010, experienced high levels of surveillance while conducting research on torture in China:

China was the worst. We had to change our SIM cards every three hours. It only took them three hours to tap our telephone conversations... They monitored phones, emails, everything that we did was under surveillance.²⁰⁶

Authorities are now branching out and taking their surveillance onto social media platforms. For example, in Ethiopia, where legislation passed in 2009 forced the closure of many HROs,²⁰⁷ surveillance of local human rights researchers through social media is becoming an increasing problem.²⁰⁸ According to Yared Hailemariam, a researcher for the Association for Human Rights in Ethiopia, there was a recent crackdown on Ethiopian activists, who were arrested based on 'evidence' collected almost entirely through Facebook and Twitter:

Social media can be a dangerous thing to be engaged on. The government is always monitoring these platforms, and many people are not trained in how to ensure their security online, so they don't use things like encryption. The government filters and monitors and taps this communication. The big problem is that the only internet provider is a government company, there isn't any private internet company, which gives them even more access.²⁰⁹

Researchers now need to learn skills in digital security and begin using tools like encryption when communicating with each other or sources on social media platforms. Daniel D'Esposito, Executive Director of HURIDOCS, feels that the human rights community has been slow to adapt to new digital security threats:

²⁰⁶ Nowak [n 79].

²⁰⁷ International Service for Human Rights, 'The Situation Of Human Rights Defenders In Ethiopia'.

²⁰⁸ Interview with Yared Hailemariam, Researcher, Association for Human Rights in Ethiopia (Phone, 19 May 2016).

²⁰⁹ Ibid.

People are still pretty nascent in their way of handling information and data storage. They are kind of reluctant to use encryption when they should, it's cumbersome, and people are reluctant to change.²¹⁰

In addition to the practical challenge researchers now face in understanding digital security threats and circumventing them, they also face a new ethical dilemma over ensuring the safety of their sources. If researchers are communicating with sources through messaging apps, such as WhatsApp Messenger, or are connected with them through social media networks, this opens up witnesses or the victims of human rights abuses to being targeted, threatened, or worse. Furthermore, researchers now face new challenges in ensuring anonymity for online social media informants, research consultant Probert feels that fact-finders are aware of this new challenge and are working towards solutions:

It's something most practitioners are acutely aware of and are constantly thinking of what step needs to be taken to ensure witnesses have received the same level of protection or anonymity regardless of the medium in which they've conveyed the information.²¹¹

4.1.6. Informed consent and private versus public information

Informed consent is a fundamental principle in human rights monitoring and investigations and now poses challenges for fact-finders collecting data through social media in two ways. First, there is the ethical debate over whether informed consent is required when fact-finders are sourcing information from social media platforms that are technically already public domain, and second, is the issue of gaining informed consent over *how*, and on *what social media platform*, communication between a researcher and informant should be carried out.

Given the challenge of tracking CGM's chain of custody, addressed in section 4.1.1., researchers face a practical challenge in contacting and gaining informed consent from the initial CGM uploader, in order to use their material in a human rights report or advocacy material. Researchers also face an ethical dilemma when deciding what level of

²¹⁰ Interview with Daniel D'Esposito, Executive Director, HURIDOCS (Phone, 18 April 2016).

²¹¹ Probert [n 20].

informed consent is even required for social media derived data, given that on certain social media platforms the data are legally *already* in the public domain. Rikke Frank Jørgensen, Senior Researcher with The Danish Institute for Human Rights, feels the debate on social media's private versus public nature is a growing concern:

There's a huge discussion on when something is public. Because you are part of a community that has a larger audience, does that mean you have no expectation of privacy? Are you publishing stuff the way you would be within the old media world? Or is it fair to claim that within certain boundaries users may still have expectations of privacy or making information public...In many cases you are now able to collect a lot of information about people, simply without their consent, if you are part of a larger community that they are also part of.²¹²

The dilemma for a human rights fact-finder is whether the public nature of certain social media platforms allows them to source and share material without informed consent. However, by doing so the researcher 'could be potentially placing people, who have no intention of sending that information to you, in danger, and so that is an ethical issue'.²¹³

Researchers using social media in their fact-finding, in particular, to communicate directly with sources and conduct interviews, also face a challenge in gaining informed consent over how, and on what platform, they communicate and conduct interviews with witnesses. Witnesses and sources should be made aware of the potential for surveillance, monitoring, or interception of their shared data if they are communicating with fact-finders through social media, and informed consent over how the two parties communicate should be given.

²¹² Jørgensen [n 193].

²¹³ Probert [n 20].

4.2 RECOMMENDATIONS FOR RESEARCHERS AND HROS

4.2.1. *Tips and tricks for verifying social media derived data*²¹⁴

Verifying the data derived from social media platforms can be done through traditional research methods to cross-reference and authenticate facts, as well as through utilising further ICT tools.²¹⁵

The first recommendation to researchers is to treat the content they collect through social media the same way they would treat unsubstantiated claims made by sources. Ghoshal, a researcher with HRW, explains:

I think that whatever is provided through this kind of technology, just needs to be understood essentially as hearsay and should be treated the same way as something that somebody says to you when you're on a research mission, that they don't necessarily offer any evidence for.²¹⁶

Following the initial discovery of content, it is then up to the researcher to 'corroborate and triangulate information',²¹⁷ typically through traditional research methods, such as collecting witness testimony and conducting interviews to verify facts. The most common response from survey respondents, when asked how they verify social media derived evidence, involved conducting in-person interviews to verify the information and contacting people within existing networks to question them about particular events.²¹⁸

Given that many researchers utilising social media are doing so for regions where they do not have direct ground access and possibly no network of trusted sources to verify the social media data they have collected, Locula, a Human Rights Officer in South Sudan suggests:

²¹⁴ Christoph Koettl of AI, as well as the organization WITNESS have developed extensive guides in verifying CGM. For further, more detailed guidance in CGM verification, Koettl's practitioners guidelines can be found here: [https://www.repository.cam.ac.uk/bitstream/handle/1810/253508/Koettl_Citizen%20Media%20Research%20and%20Verification_FINAL%20\(1\).pdf?sequence=1](https://www.repository.cam.ac.uk/bitstream/handle/1810/253508/Koettl_Citizen%20Media%20Research%20and%20Verification_FINAL%20(1).pdf?sequence=1) and the WITNESS guidelines can be found here: <https://lab.witness.org/announcing-witness-ethical-guidelines-for-using-eyewitness-footage-in-human-rights/>

²¹⁵ Koettl [n 52].

²¹⁶ Ghoshal [n 104].

²¹⁷ Heyns email [n 190].

²¹⁸ Survey.

In areas where we cannot reach due to security concerns and lack of Human Rights Officers, we establish contact with local authorities including religious and opinion leaders, youth and women leaders, hospital authorities, police, alleged victims and victims' families. From my experience, these investigation and verification measures have worked well in many cases.²¹⁹

Beyond relying on traditional fact-finding methodology for verification, there are also digital verification methods that can be utilised by researchers. In Koettl's extensive and detailed practitioners guide on CGM verification, he suggests:

First, the account history and activity should be reviewed. Newly created social media accounts that only contain one dramatic video or picture should be considered suspicious...The source should also be reviewed for links to other social media accounts, in order to establish a basic digital profile of the source under review...Additionally, other content posted by the same account holder should be reviewed for geographic discrepancies, and to establish if the uploader actually appears to come from the specific region, city or neighborhood where an incident reportedly took place.²²⁰

Following authenticating the content sharer, a researcher should review the contents metadata, 'Reviewing any existing metadata is a crucial step and can contribute to highly relevant findings such as establishing the exact time, date and location of an incident.'²²¹

Beyond this, additional research on social media can help fact-finders collect other CGM, which may corroborate events depicted in the first piece of evidence collected. Koettl explains further:

What usually cracks a case is when we find a second photograph or video that shows a different angle. That is much more helpful in verifying a specific piece of content. There might not be a specific violation seen, but there could be other things, a street sign or the environment, that might help you determine the exact location. So it's often the additional content that you dig up that helps verify specific pieces of information.²²²

Amnesty International has a dedicated team of digital analysts, who can provide assistance to field researchers who may not have the digital

²¹⁹ Locula [n 101].

²²⁰ Koettl, [n 26] pp. 15–16.

²²¹ Ibid. Further and more precise instructions for finding and examining metadata are included in Koettl's practitioners guide.

²²² Koettl [n 52].

forensic skills needed to verify particular material.²²³ Human Rights Watch also has staff with more advanced skills in digital forensics who can provide assistance to field researchers.²²⁴ It is recommended that other HROs follow suit, and invest in training one, or more, staff in digital forensics so that they can provide assistance to field researchers in more complicated cases of CGM verification and over time train others. These skills are becoming increasingly important for fact-finders, as more potential evidence is being shared through social media.²²⁵ Special Rapporteur Heyns feels there is a growing need for expertise in this area:

Recognition of the need for expertise concerning digital verification is growing. The more knowledge about information forensics that human rights fact-finders have, the more comfortably and quickly they will be able to use digital information from civilian witnesses.²²⁶

On a broader scale, ‘increasing verification knowledge among civilian witnesses is another way to facilitate the verification process’.²²⁷ Through improving the type of content that is uploaded and shared on social media, and through training the civilians that are capturing and sharing the content, researchers could save time and effort during the verification process. Organisations like WITNESS have created a number of guidelines, and provide training, for civilian witnesses in how to produce high-quality media that can be utilised by human rights fact-finders.²²⁸

4.2.2. *Overcoming the digital divide*

Overcoming the digital divide begins with acknowledging that there is one. Researchers must identify what regions or marginalised groups do not have access to social media, and therefore what voices may be missing from the information available on social media. Researchers must also not allow the proliferation of social media on certain issues

²²³ Ibid.

²²⁴ Ghoshal [n 104].

²²⁵ Probert [n 20].

²²⁶ Heyns report [n 83] p. 16.

²²⁷ McPherson [n 8] p. 26.

²²⁸ Thijm [n 25].

to dictate their research agenda. Amnesty International stands as an example of an HRO that, although often relying on social media to collect data, ensures their research agenda is not influenced by it:

More online content might increase pressure to respond publically, but it does not drive our research agenda. For example, we produce research on political prison camps in North Korea or human rights implications of mining in Myanmar, which are topics that are barely, or not at all, covered on social media. The key recommendation here would be to not rely on one single source for information, for example, only on social media or news reports.²²⁹

The only way for researchers to truly overcome the digital divide is to continue relying on traditional research methods to gather data from the regions where there is a divide. An AI researcher on the Americas explains:

Usually we will sift through social media for these urban events in Mexico, but for rural areas, like a farmer in southern Mexico, it would be useless because they won't have access to that kind of device, or internet access. So, we will go directly and interview them and use more traditional methodologies to gather that information.²³⁰

4.2.3. *Dealing with Big Data, overcoming the overload*

The large amount of data available to researchers is an advantage, and a challenge, given that, 'The digital flood of information from civilian witnesses only has evidentiary potential if human rights fact-finders successfully evaluate it.'²³¹

In order to overcome the information overload, new technological tools may be able to provide a possible solution, by helping researchers mine through Big Data for relevant content, 'Although machines cannot replace human expertise in the evaluation of human rights information — for assessing the relevance of information for evidence is an ultimately subjective task —, technology can help human rights monitors to concentrate on the most important material.'²³²

In February 2016, the HRC hosted an event called Diplohack where

²²⁹ Koettl [n 52].

²³⁰ Americas researcher [n 89].

²³¹ McPherson [n 8] p. 17.

²³² Heyns report [n 83] p. 15.

a ‘group of techies, designers, entrepreneurs, human rights experts and diplomats spent the entire weekend working on innovative ways to gather and verify evidence of human rights violations’.²³³ One innovative software developed at the event set out to solve the volume challenge through machine learning; essentially the software could mine through thousands of photos to identify particular images,²³⁴ ‘Give it a tranche of thousands of photos and it would be able to teach itself to pull out all photos of child soldiers.’²³⁵ Although this technology is not yet deployed, it is not far off, and may one day become a staple in the human rights researchers toolkit, helping them to more quickly identify relevant material.

Another pipeline solution is the software developed by Neill and colleagues at Carnegie Mellon University, which can help sift through mass quantities of Twitter data to detect human rights trends or patterns and predict events:

This specific methodology is really focused on detecting patterns, which is one specific area of machine learning...For human rights, these issues may ramp up over time, and what we’d like to do is detect them in early stages when there are only a few violations before things spiral out of control.²³⁶

Beyond technical solutions, researchers should also continue to rely on traditional research skills when prioritising what social media derived content to focus on. A researcher working in Gaza before and after the 2014 conflict, who experienced the information overload with the flood of videos and photos that were posted on social media about the conflict, relied on traditional fact-finding skills to help prioritise what cases to investigate further:

In Gaza, one of the decisions I took was to look at a lot of diverse types of cases... So there were different categories of cases that would mean different sorts of violations in international law. It depends a lot on the aim of why you are doing the investigation, in that case it was clear I couldn’t look at all the cases, so my goal was to explain the types of cases that had occurred and show the different types of categories of violations.²³⁷

²³³ ‘Diphacking’ For Human Rights’, 2016.

²³⁴ Probert [n 20].

²³⁵ Ibid.

²³⁶ Neill [n 200].

²³⁷ Gaza human rights monitor [n 91].

The challenge of prioritising human rights issues is not new to researchers, and they should continue to apply the same strategies to social media content that they utilise when prioritising information collected through traditional fact-finding methods.

4.2.4. *Securing data and safe storage*

In order to ensure a researcher can utilise the data collected through social media, it must be safely secured. Koettl, in his practitioners guide²³⁸ on CGM suggests:

The first step when analyzing citizen media is to save the file that is being investigated, preferably a copy of the original video, but if it's not available, then the highest quality copy. Further, all available documentation should be collected, including the URL, the exact time of publication and screenshots of the posting.²³⁹

Beyond ensuring that copies of the content and screenshots are made, researchers and HROs have a responsibility to ensure that these data are then stored responsibly. The recommendation for HROs is to re-evaluate how they currently store data to ensure their practices take into consideration digital content, 'Human rights researchers should strive to adopt high standards of handling digital evidence, similar to those used in forensic or criminal investigations (which could include write-blocker software that prevents editing the content that is being analysed).'²⁴⁰ Organisations like HURIDOCS work with HROs to provide software and/or training on how to manage their collected data (including digital content) effectively and ethically.²⁴¹

4.2.5. *Digital security*

In order for researchers to overcome surveillance of their social media platforms, the recommendation is to conduct regular digital

²³⁸ The practitioners guide developed by Christoph Koettl of AI and the Citizen Evidence Lab on CGM verification, referenced in footnotes 26 & 214, also includes detailed advice for researchers on how to safely secure and store digital evidence, and is a suggested resource for researchers.

²³⁹ Koettl, [n 26] 11.

²⁴⁰ Ibid.

²⁴¹ D'Esposito [n 210].

security audits and better understand their digital threat environment. Ronald Deibert, Director of The Citizen Lab at the Munk School of Global Affairs at the University of Toronto, suggests:

You have to begin by looking at laws, policies, regulations, and practices of the government and any non-state authority. And then you'd want to break down the technical environment: service providers, telecommunications infrastructure, what equipment is being used, whether government agencies or other actors have access to surveillance technologies. And then getting to a more personal level, looking at digital hygiene practices of the individual.²⁴²

It is recommended that HROs begin pushing further for researchers to take security precautions both offline and online and developing internal standards around digital security could be a possible solution. It is important to note that these internal standards should take personal, regional, and country-specific challenges into perspective, because the security threats 'really depend on the country you're in, the regulations of that country, the social network that you're in and the habits of the people in that network'.²⁴³

When it comes to the digital hygiene practices of individual researchers, it is recommended that researchers begin using encryption on their social media messaging platforms and are vigilant about who they allow into their social media networks. Ghoshal of HRW expands, 'For instance, they may friend a lot of people, who are not really their friends, and then those people can collect information from those platforms and use it against them. That's obviously a challenge that can be addressed if you tightly control who is in your network.'²⁴⁴ It is the recommendation of the author that researchers only connect with sources, or conduct research, on professional social media accounts they have created separately from their personal social media accounts.

The recommendation in regard to ensuring the security of sources, who are communicating with researchers through social media platforms, is to follow the expertise of the sources since they often have a strong understanding of the surveillance techniques used in their own country. Ghoshal has deployed this strategy effectively in her fact-finding

²⁴² Interview with Ronald Deibert, Director, The Citizen Lab, Munk School of Global Affairs, University of Toronto (Phone, 22 April 2016).

²⁴³ Deibert [n 242].

²⁴⁴ Ghoshal [n 104].

work, ‘There are a few countries I’ve worked in where digital security has been an issue, and in those countries the activists themselves are very aware of these concerns and have alternative methods of encrypted communication.’²⁴⁵

Beyond country-level surveillance challenges, there are also regional-specific risks, so for researchers covering an entire country, the recommendation is to decipher the various digital security risks in the different regions, and once again follow the guidance of the sources themselves. Seif El Nasr of the OHCHR explains how he has done so while researching Syria:

For instance, in certain areas under government control, some activists or civil society organisations would prefer communicating via applications such as WhatsApp or Telegram and not over the phone...In areas outside government control, many people would be more comfortable talking over the phone or Skype. So it sometimes depends on the situation and where they are. We use whatever they feel more comfortable with. They are the ones inside, and they are the ones risking their security, and they have the knowledge and are aware of what the best tool to use, security-wise, is.²⁴⁶

4.2.6. *Obtaining informed consent*

In regard to the challenge of obtaining informed consent to use social media derived data, the recommendation is for researchers to obtain the same level of informed consent for evidence sourced through social media that they would with evidence collected through traditional fact-finding methods. Former Special Rapporteur Nowak suggests, ‘If you don’t have informed consent and you might endanger someone by making it available on any kind of means, I would say don’t do it.’²⁴⁷

Despite the content already being available in the public domain, it is up to fact-finders to ensure they are obtaining informed consent for its further use in human rights reporting or advocacy. The contents used in human rights reporting or advocacy could draw added attention, and the uploader may not have posted the material with the intention of informing a human rights researcher. Beyond ensuring informed consent is obtained by the uploader, special consideration should also be

²⁴⁵ Ibid.

²⁴⁶ Seif El Nasr [n 12].

²⁴⁷ Nowak [n 79].

made for the individuals who appear in the material, whether victims or alleged perpetrators of human rights violations. Amnesty International has developed recommended strategies for protecting individuals who appear in social media derived evidence, Koettl elaborates:

We do some standard risk considerations, like are there individuals visible in the video or picture. We published video footage in the past, where we have blurred out the faces of victims and perpetrators, to protect their identity. That's a standard approach to our work, and we'd do the same thing with testimonies. But we are very careful about it, and take careful risk assessments.²⁴⁸

²⁴⁸ Koettl [n 52].

5.

CROWDSOURCING PLATFORMS: PRACTICAL CHALLENGES,
ETHICAL DEBATES, AND RECOMMENDATIONS

Section 5.1 will focus on the practical challenges and ethical debates researchers face when using crowdsourcing platforms to collect data in their human rights monitoring and investigation work. Section 5.2 will address each of the identified challenges and focus on possible solutions and recommendations, specifically for researchers and HROs, to overcome these challenges.

For the purposes of this thesis, the challenges, ethical debates, and recommendations will focus on researchers who are referencing or using data generated from crowdsourcing platforms managed by *external* organisations. It will not focus on the challenges or recommendations for deploying and managing a crowdsourcing platform *themselves*, which poses an entirely different set of challenges and recommendations given the complexity of launching and overseeing a crowdsourcing platform.

It is also important to note that many of the practical challenges and ethical debates presented by collecting data from crowdsourcing platforms are similar to those posed by collecting information from social media since crowdsourcing platforms aggregate data from social media platforms. However, the following sections will focus solely on the challenges and recommendations unique to crowdsourcing platforms.

5.1 PRACTICAL CHALLENGES AND ETHICAL DEBATES

5.1.1. Verification and authentication

As outlined in section 4.1.1., verification is an essential component of human rights fact-finding, and without rigorous verification and authentication processes, HROs risk their credibility and ability to

hold power to account. Given that crowdsourcing platforms also aggregate data from ‘offline’ sources, which do not leave an online trail or metadata that a researcher can follow, verifying the data collected through crowdsourcing platforms poses additional challenges to those faced when verifying data collected through social media platforms. Researchers collecting data from crowdsourcing platforms must ask themselves, ‘Can reports from the crowd be trusted? How does one verify crowdsourced information in near real-time? Is verification possible under such strict time constraints?’²⁴⁹

Of the survey respondents who use crowdsourcing platforms to collect data, 63% indicated that verifying crowdsourced information was their greatest challenge. Researchers relying on crowdsourcing platforms managed by external actors poses a challenge for researchers, who are relying on those managing the platform to uphold high standards of verification for the data that are aggregated and then posted. As outlined in section 1.3, crowdsourcing platforms take many different forms and depending on who is responsible for deploying and managing the platform, the level of verification that data go through before they are posted varies greatly. Neela Ghoshal of HRW, who has experience working with a crowdsourcing platform in Burundi, elaborates on the dangers of trusting crowdsourced data verbatim:

If information is not verified and it’s circulated further, one, that’s problematic because it’s inaccurate, and two, often the kind of inaccurate information posted on crowdsourced platforms is intended to fire the flames and create tensions, so further circulating that info may actually contribute to violence or tensions in certain situations.²⁵⁰

An additional challenge, exasperating the difficulty in verifying crowdsourced data, is the ability for citizens submitting information to a platform to remain anonymous, leading to questions over the submitter’s motivations. In the author’s survey, 56% of researchers identified this as a challenge they face when using crowdsourcing platforms. If contributors are anonymous, researchers are not able to follow-up with them and further investigate the claims they have made, forcing fact-finders to either trust anonymous sources of information, or not to use the data at all.

²⁴⁹ Meier [n 125] 2.

²⁵⁰ Ghoshal [n 104].

An additional complication of the verification process is that certain crowdsourcing platforms automatically aggregate data from public social media platforms, such as Twitter. This automatically aggregated data can appear on the platform without the knowledge of the original poster,²⁵¹ posing a challenge to researchers in obtaining informed consent, an issue that will be addressed further in section 5.1.5.

5.1.2. Skewed data due to the digital divide and duplication

Crowdsourcing platforms, although in some ways help overcome the internet-driven digital divide by allowing citizens to submit information through SMS or other ‘offline’ means, are still impacted by the digital divide and the issue of duplication. Therefore, crowdsourcing platforms do not necessarily provide a full representation of the issue, conflict, or crisis that they focus on.

A digital divide exists concerning access to telecommunications infrastructure. Furthermore, as outlined in section 4.1.2., the digital divide is driven not only by a lack of access to technological infrastructure, it is also a socio-economic issue. Marginalised groups, even in places where the infrastructure exists, do not necessarily have access. Maja Bott, an expert in crowdsourcing and governance, explains further:

There can be participation inequalities. Attracting the wrong crowd, for example, the elite, instead of people excluded from formal governance mechanisms. Illiterate people are usually excluded from SMS-based crowdsourcing, even if they possess a mobile phone.²⁵²

These gaps pose a challenge for researchers relying on crowdsourcing platforms to collect data, ‘If the crowd gets it wrong, who is accountable, who takes responsibility? They can’t and we look trivial that we trusted them.’²⁵³

Researchers tend not to trust the data generated through crowdsourcing platforms, given the high number of varied contributors. For example, AI researcher Poon does not feel that crowdsourced information is accurate:

²⁵¹ Manning [n 36].

²⁵² Interview with Maja Bott, Economist, Expert on Crowdsourcing and Governance (Email, 27 April 2016).

²⁵³ Lyons [n 45].

The accuracy is not very high because you crowdsource so much information. I would say I appreciate these efforts, and these can give us some information to do some analysis by having these tools crowdsourcing, but still you can't say the information is representative as a whole, it's only a sample from a certain number.²⁵⁴

Crowdsourcing platforms host mass quantities of data. There is an assumption that Big Data is better, and more information means a more accurate representation of an issue or conflict; however, this is not always the case.²⁵⁵ The Big Data debate is outlined by Tamy Guberek and Romesh Silva, in their report *Human Rights and Technology*:

Enthusiasm around “Big Data” has been accompanied with a growing tendency to equate large quantities of data with an accurate representation of the world. Yet, simply acquiring large amounts of data does not avoid issues of sampling and modelling assumptions that always must accompany empirical data analysis.²⁵⁶

The other challenge for researchers, when relying on data aggregated by crowdsourcing platforms is the issue of duplication. Multiple citizens can submit information on the same event, which could lead to inflated statistics or inaccurate depictions of events, ‘If a number of people are reporting on the same information, and no one’s there to review it, then it’s problematic.’²⁵⁷ Once again, this challenge comes down to the way a crowdsourcing platform is deployed and managed. If there are strong verification and data follow-up practices in place by the deployer, the issue of duplication is reduced. However, this poses a challenge to researchers who are not necessarily aware of how meticulous these practices are, and how multiple submissions reporting the same event are accounted for, if at all.

5.1.3. *Lack of relevant platforms*

One of the barriers preventing fact-finders from further utilising crowdsourcing platforms is that there may not be a platform collecting data relevant to their research. In the author’s survey, 27% of respondents who indicated that they do not use crowdsourcing platforms to collect

²⁵⁴ Poon [n 90].

²⁵⁵ Guberek & Silva [n 196] 28.

²⁵⁶ Ibid.

²⁵⁷ Ronan [n 122].

data, stated they would begin using them if there was a platform collecting information relevant to their research work.

This challenge relates to a larger issue of the gap that exists between the technology and human rights fact-finding communities. The human rights community does not fully understand the technology community or the way crowdsourcing platforms work, and does not trust their standards, and similarly, technologists do not understand the high-standards and needs of human rights researchers. Given this gap, many of the crowdsourcing applications are not useful to human rights researchers and human rights researchers are not fully aware of the platforms that could actually be of use.²⁵⁸

5.1.4. Security risks for crowdsourcing participants

This section will deal with the ethical debate around the safety of individuals contributing data to crowdsourcing platforms, and how in turn, this becomes an ethical issue for the human rights researchers who are relying on these platforms to collect information.

The safety of contributors to crowdsourcing platforms can be jeopardised in a few different ways. First, by crowdsourcing platforms mapping the location of contributors, second, by human rights abusers intercepting the data contributors share, and finally, by crowdsourcing platform deployers essentially asking untrained citizens to collect potentially dangerous information.

First, the mapping element of many crowdsourcing platforms (where data are aggregated, geo-located, and pinned onto a map showing where the individual submitting the information was located at the time of submission, or where an event being reported took place) is making it easier for the perpetrators of human rights abuses to monitor crowdsourcing platforms and target contributors,²⁵⁹ ‘Contributors can be attacked, both virtually, e.g. by being spied on, and physically. Especially amid human rights violations and conflict, GPS-based data provided by individuals on the ground can be abused by government, rebels or terrorists for military action.’²⁶⁰ By releasing a user’s coordinates, or the

²⁵⁸ Interview with Christopher Tuckwood, Executive Director, The Sentinel Project (Phone, 23 March 2016).

²⁵⁹ McPherson [n 8] 17.

²⁶⁰ Bott, Gigler & Young, 2016, p. 14.

location of particular events, crowdsourcing platforms are potentially providing a road map to re-victimisation.

Beyond locating individuals and events, crowdsourcing platforms also greatly jeopardise the safety of the ‘offline’ contributors, who often rely on SMS to submit data through telecommunications networks, as noted by the Responsible Data Forum:

You are critically relying on existing infrastructure that is outside your control - the mobile phone network. That means, you are relying on telecommunications companies to follow responsible procedures, as all information passes through them; not to forget the huge amount of metadata that they will undoubtedly be in possession of: for example, the location the SMS was sent from, to whom, and times. They may be legally compelled to hand out either the metadata, or the data itself, to government authorities.²⁶¹

Crowdsourcing participants also face risks when collecting dangerous information to share on crowdsourcing platforms. Most crowdsourcing participants do not have appropriate training on security or an understanding of the protection principles central to human rights information gathering. Easterday, who produced a report on ICT and fact-finding for the Open Society Foundation in 2012, expands:

You’re asking individuals to go about this investigation work, but they might not be trained in investigation or security, so it’s putting individuals more at risk. A lot of people might not have training in ethics or the principles of do no harm, and they might risk re-traumatising a victim if they are out there collecting photos or videos, or collecting information to share through crowdsourcing. They are people who are not trained researchers.²⁶²

Given that there are serious risks posed for the citizen submitters of information ‘and the people who are creating these platforms often have no way to protect people’s security on the ground’,²⁶³ the question for human rights researchers concerns how ethical it is to rely on data from platforms that risk the safety of contributors/sources, ‘Whenever your asking people to do something that involves crowdsourcing, you’re asking them to put themselves out there.’²⁶⁴

²⁶¹ ‘Human Rights Documentation’, Responsible Data Forum, 2016.

²⁶² Easterday [n 11].

²⁶³ Ghoshal [n 104].

²⁶⁴ Deibert [n 242].

5.1.5. *Informed consent*

How can a researcher obtain informed consent to use data submitted by an anonymous user? Furthermore, how can a researcher obtain informed consent from an individual whose data were automatically aggregated to a crowdsourcing platform without their knowledge? These are the ethical and practical challenges researchers face when it comes to obtaining informed consent to use material collected through crowdsourcing platforms.

There are ethical considerations to be made when it comes to sourcing data from crowdsourcing platforms, data that may be automatically aggregated to the platform from social media, without the consent of the initial poster. For example, the Ushahidi software can automatically aggregate and map tweets from Twitter depending on what hashtags the deployer wants to include in their aggregation algorithm, and the initial ‘tweeter’ may not be aware their tweet was aggregated onto a crowdsourcing platform. Manning, Ushahidi COO, explains the rationale behind this:

Ushahidi allows the deployer to aggregate Twitter hashtags and map them, and the reporter is not necessarily aware that this is happening. But this is legally, and I believe ethically okay because it is a completely public source of information. We cannot, and do not, allow this to be done with Facebook, email, SMS, or Instagram—which are all private platforms.²⁶⁵

Despite the legality of automatically aggregating, locating, and sharing the data, the initial poster may not be aware that this is happening with their information. They may be posting something ‘publicly’, but did not intend for that information to be aggregated and mapped, and they may not have taken any security precautions or be aware of any security risks. This is of particular importance to human rights researchers because they must take additional steps in obtaining informed consent from crowdsourcing platform contributors, who might be opposed to their data being used in a human rights investigation.

²⁶⁵ Manning [n 36].

5.2 RECOMMENDATIONS FOR RESEARCHERS AND HROS

5.2.1. *Verifying crowdsourced data*

This section will provide specific recommendations to researchers who must verify the data collected from crowdsourcing platforms; it will not focus on recommendations on how to establish a verification system for the deployers of crowdsourcing platforms. However, if deployers want their platforms to be useful for fact-finders, they must adhere to the standards of verification followed by human rights researchers.²⁶⁶ Additionally, this section will focus solely on recommendations for verifying the data derived from ‘offline’ crowdsourcing submissions, and not the data aggregated onto platforms from social media platforms, as verification for social media data has been addressed in section 4.2.1. and the same methods apply.

The first recommendation is that researchers improve their understanding of the verification methods utilised by the crowdsourcing platform they are referring to. Some crowdsourcing platforms provide manuals explaining their verification methodology on their website, such as the LRA Crisis Tracker,²⁶⁷ ‘Organisations should have some sort of transparent, publicly available methodology. This is very valuable at the organisation level and ensures consistency.’²⁶⁸ If a researcher is unable to find publicly available methodology, explaining the step-by-step process that the deployer uses to verify data, then researchers should contact the platform managers directly to understand their verification procedures, ‘Reach out to the deployer if you are concerned with validity of the content and ask them their process for validation.’²⁶⁹ Once understanding the platforms verification practices has been achieved, it is up to the researcher to decide if the data can be trusted, and what level of verification they must obtain independently to validate the information. This can be done through utilising traditional fact-finding methods, such as collecting witness testimony, to corroborate or expand on the initial information sourced from the crowdsourcing platform.

²⁶⁶ Survey.

²⁶⁷ Ronan [n 122].

²⁶⁸ Ibid.

²⁶⁹ Ibid.

Data from crowdsourcing platforms that rely on hired observers or trained volunteers are likely to be more accurate than data derived from crowdsourcing platforms accepting public submissions.²⁷⁰ The LRA Crisis Tracker is an example of a platform that aggregates data through a network of trained volunteers. Volunteers are based in villages in northern Uganda, the Democratic Republic of Congo (DRC), and the Central African Republic (CAR) and submit daily reports to a central hub via HF radio. Administrators then verify these reports before they are posted onto the platform. Project Director Ronan explains further:

There is a fairly strict set of criteria in order to report anything on the Crisis Tracker. A submission from a citizen is going to get factored into our analysis and may corroborate a report, but we wouldn't publish that information raw. The HF radio network is a filter for us because it's a committee of trusted people that are verbally getting reports from community members. And it acts as a first layer of credibility for us.²⁷¹

It is the recommendation of the author that researchers rely primarily on crowdsourcing platforms that utilise hired or trained contributors, rather than platforms relying solely on citizen submissions. Additionally, crowdsourcing platforms focusing on a singular issue tend to be more accurate than platforms aggregating data on a number of issues. Walker of The Engine Room, explains why focus and structure are key to a crowdsourcing platform's success:

There is potential there, if there is a very clear sense of what type of information is needed, what the purpose of collecting it is, and they are collecting it in a structured way that can then be used to draw out analysis that can be justified and used in advocacy with appropriate caveats.²⁷²

Beyond this, if researchers need to verify specific claims made by anonymous users to a crowdsourcing platform, once again, they should attempt to connect with the deployers of the crowdsourcing platform to see if a direct connection can be made to the anonymous submitter.

²⁷⁰ Ibid.

²⁷¹ Ronan [n 122].

²⁷² Walker [n 205].

5.2.2. *Look for trends and investigate further*

When it comes to the accuracy of the data aggregated to crowdsourcing platforms, the recommendation of the author is not to quote data directly in a human rights report. However, researchers can still utilise the information available to examine general trends. Ronan, of the LRA Crisis Tracker, expands, ‘It’s never going to be accurate 100%, but if you are looking for long-term general trends, or trends within a particular area, I think that you’d find a level of accuracy that’s helpful.’²⁷³

Although crowdsourced information may be skewed by the digital divide, and possible duplication, some of the data available on platforms can provide researchers with potential leads for investigations, or help them identify hotspots of activity that require in-field investigations, as Ghoshal of HRW experienced in Burundi:

It was more than we were capable of getting through other channels, and of course some of it wasn’t true, but it was still a large amount of information coming in that we could then work with. And we could say, “wow it looks like a lot of things going on in this particular province,” so we could then go to that province to investigate what was going on...For us, credibility is such an important issue, that we can’t just rely on that information in and of itself, but it’s a tool and source that we can work with, just like other sources we work with.²⁷⁴

The recommendation for researchers is to use crowdsourcing platforms as a way to identify trends while keeping in mind that not all trends may be represented on the platform, and then conduct further investigations through traditional research methods to verify facts.

5.2.3. *Partnerships*

To overcome the issue of there not being enough relevant crowdsourcing platforms for human rights researchers to reference, the recommendation is that HROs should begin looking for opportunities to partner with organisations deploying and managing crowdsourcing platforms. This can help ensure the needs of researchers are met, and

²⁷³ Ronan [n 122].

²⁷⁴ Ghoshal [n 104].

that the platform is collecting data that could actually be utilised by fact-finders. Given the limited capacity of HROs to manage and deploy their own crowdsourcing platforms, partnering with other organisations that are already doing so, or plan to do so, can help alleviate the burden on the HRO to manage the platform while allowing them to reap the benefits. Furthermore, these cross-sector partnerships could also ensure the crowdsourcing platforms employ higher standards for data verification and protection for contributors.

The International Federation of Elections Systems (IFES) and HRW partnership on the 2010 Burundi election-monitoring platform is a good example of a cross-sector collaboration that utilised the expertise of two organisations working towards a common goal. Ghoshal explains the role that HRW took in this partnership:

Our main role was in helping to create the survey tool. There was a network of 500 observers working for this project, hired through IFES and we put together a survey, a questionnaire for them to complete weekly. So we worked with them on the survey tools to collect that data.²⁷⁵

In addition to partnerships between HROs and crowdsourcing platform deployers, more discussions and events focused on crowdsourcing human rights data, could help to bring the technology and human rights communities together to ensure that both understand the needs, standards, and challenges of the other.

5.2.4. Ensuring security for contributors

When it comes to the safety of crowdsourcing participants being jeopardised through geo-location, surveillance, and a lack of training, many of the recommendations that could be made are specific to the deployer of the crowdsourcing platform. Researchers simply referring to crowdsourcing platforms to collect information have little control over the practices taken by the platform deployer. However, for the purposes of this thesis, given its focus on recommendations for researchers and HROs, the recommendations for researchers are as follows: 1) not to re-publish coordinates; 2) to better understand security risks faced by crowdsourcing participants; and 3) to engage

²⁷⁵ Ghoshal [n 104].

in public dialogue to push for higher protection standards for crowdsourcing participants.

The first recommendation, surrounding geo-location, is not to re-publish coordinates already made public through a crowdsourcing platform. Spreading these data further could lead to increased chances of re-victimisation or targeting of contributors. Although the location data may already be publicly available, informed consent has not been given for them to be included in a human rights report, addressed in the section below.

Additionally, researchers should work towards better understanding the security risks posed to crowdsourcing participants, depending on the platform, and what protection measures the deployer has put in place for them if any. Some crowdsourcing platforms, such as the LRA Crisis Tracker, take security precautions for their volunteer contributors into consideration and have established a protection committee in each of the communities their volunteers are based, to help ensure their safety.²⁷⁶ It is the recommendation of the author for researchers to only rely on data from crowdsourcing platforms that have implemented protection strategies for contributors.

Furthermore, through contributing to public discourse concerning protection standards for crowdsourcing participants, HROs and researchers can help push for higher standards amongst crowdsourcing deployers. Ultimately this lobbying for higher protection practices and standards could help ensure future crowdsourcing platforms consider the safety of participants.

5.2.5. Obtaining informed consent

Similar to the recommendation regarding informed consent for social media derived data, the recommendation to researchers using data derived from crowdsourcing platforms is to ensure that they maintain the same standards as those for collecting witness testimony or other evidence, and always obtain informed consent from information sources. As stressed by former Special Rapporteur Nowak, ‘The highest norm is do no harm. If I want to get information from victims and

²⁷⁶ Ronan [n 122].

witnesses, I need to ask, do I endanger them in any way?’²⁷⁷ The data sourced through crowdsourcing platforms may be useful to researchers internally, as information to help launch further investigations; however, informed consent is necessary before the data are used directly in any human rights report or advocacy material.

²⁷⁷ Nowak [n 79].

6.

FINAL REMARKS AND ANALYSIS

To conclude this work, the author will provide the following: 1) a final rationale for the unique approach to the research chosen for this thesis; 2) a conclusion on the impact ICT tools are having on traditional research methods; 3) a final recommendation to the human rights community as a whole; 4) suggestions for further research; and finally 5) a cautionary note to the human rights community.

As outlined in chapter one, the author took a unique and deliberate approach to research for this thesis. This was done by collecting the majority of this work's referenced material directly from human rights fact-finders and experts, by conducting 33 interviews and surveying 66 human rights monitors and investigators. Given the author's deliberate choice to work with data derived predominantly from human rights practitioners themselves, this work has provided a very accurate, practical, and timely perspective on the way in which ICT tools are being used for human rights documentation, the benefits they provide, as well as the challenges they pose. Furthermore, this method of research ensured that the recommendations made in chapters three to five are realistic and attainable. This thesis is an attempt to collect and present the knowledge of those currently working as human rights researchers, the true experts in human rights documentation, rather than examining their craft from a peripheral perspective. The result is a text that can be easily understood and followed by other fact-finders, providing them with much-needed guidance on how to further utilise ICT tools in their work.

As demonstrated throughout this work, ICT tools are becoming an increasingly important instrument in the fact-finders' toolbox. As outlined in detail throughout chapter two, satellite imagery, social media, and crowdsourcing applications each provide a unique set of benefits to

researchers when collecting data. These tools further researchers' access to information from inaccessible countries or remote locations; they help fact-finders track events in real time, in turn, speeding up advocacy efforts and potentially saving lives in rapidly evolving situations; they afford access to imagery that provides a level of detail and proof not always gained through witness testimony; and they facilitate access to alternative narratives or depictions of events, helping researchers circumvent more controlled or censored information streams. Given these collective benefits and other tool-specific benefits outlined in chapter two, it is the belief of the author that ICT tools are indeed a step forward for human rights documentation.

However, despite the benefits provided by satellite imagery, social media, and crowdsourcing applications, there are caveats to their use and many challenges to overcome to ensure that they are used effectively and ethically for human rights documentation. Collectively, these tools pose challenges to researchers in the following ways: they must find new ways to verify, cross-reference, and analyse the information derived from them; they now need to consider the digital divide and how unequal access to technology can skew data sets or drive public focus and in turn focus research towards 'viral' issues at the peril of other grave human rights abuses; they are faced with overwhelming amounts of data that take time and resources to mine through for relevant and useful information; they are now relying on private companies and external actors (such as satellite companies, social media enterprises, and the deployers of crowdsourcing platforms) in order to access data; and finally, they need to re-evaluate how to obtain informed consent and ensure the safety of their sources, or victims of human rights abuses. It is the way in which researchers choose to overcome these collective challenges and the other tool-specific challenges outlined in chapters three to five that will dictate the true impact of ICT tools on traditional research methods moving forward.

It was through researching and writing the recommendations to fact-finders on how to overcome the challenges posed by using ICT tools that the author was able to establish a judgment on the overall impact that ICT tools are having on traditional research methods. Through this process, it became evident that overcoming these challenges will rely heavily on traditional research methodology. For example, satellite imagery relies on ground research to confirm and corroborate potential claims made on satellite analysis; social media derived content must almost

always be verified through human sources, and in order to overcome the digital divide researchers must continue to collect data directly also from individuals without internet access. As outlined in chapters three to five, in many instances, using ICT tools independently of traditional fact-finding methods risks weakening research standards and exposing HROs to criticism over their credibility and the authenticity of their research work.

Given that overcoming the challenges posed by these new tools will rely heavily on traditional fact-finding methods, it is the conclusion of the author that ICT tools will not replace traditional research methods. However, they do pose numerous benefits to human rights fact-finders when used in conjunction with traditional methodology.

Many in the human rights documentation community support this conclusion. In particular, *moderate theorists*, who, as detailed in section 1.5, believe that ICT tools pose advantages to human rights researchers when used in combination with traditional research methods. This conclusion is also supported by researchers who responded to the author's survey; the majority (48%) stated that ICT tools should only be used in conjunction with traditional research methods. For the same survey question, 44% of respondents (the remaining majority) selected that ICT tools have the potential to be useful research tools when accompanied by further training and guidelines for practitioners, which leads to the final recommendation of the author.

As highlighted throughout this work, there are few manuals or training opportunities providing guidance to researchers on how to ethically and effectively use ICT tools for human rights documentation. Many established HROs have yet to update or adapt their monitoring manuals (including the OHCHR, arguably a leader in setting monitoring standards) to include guidance on the new ICT research methods being applied by fact-finders. This lack of guidance means researchers are left to independently develop standard practices and ethical principles, risking consistency, and ultimately leaving HROs open to questions over their credibility. Due to the lack of guidance available to researchers, 44% of survey respondents believed that there is a need for more training before benefits can be derived from ICT tools. Given this finding, the final recommendation of the author is for HROs to begin updating their internal training documents and monitoring manuals to include practical guidance on using ICT tools for fact-finding. Additionally, the author recommends that HROs re-evaluate their internal ethical standards to

ensure that they are inclusive of the new ethical issues posed by sourcing information through ICT tools.

In addition to individual HROs adapting their internal training procedures and guidelines, there is a need for further cross-sector standard setting. It is the recommendation of the author that the human rights community also takes a collaborative approach (e.g. through conferences, public dialogue, and other knowledge-exchange activities) to setting standards for the use of ICT for human rights documentation. These collaborative activities could help HROs learn from one another's experiences and develop a universal set of guiding principles.

Beyond the need for further training and guidelines for fact-finders, there is also a need for further research in this area. Specifically, the author has identified a lack of literature on the impact that evidence derived through ICT tools will have on international, regional, and national human rights legal proceedings. Although some organisations, such as the International Bar Association that developed the eyeWitness to Atrocities phone application,²⁷⁸ are thinking ahead, there is still a lack of understanding on the overall impact that digitally-sourced content will have on human rights trials. Chris Gosnell, ICC Defence Counsel, agrees, 'Undoubtedly this research is very relevant and useful because it is coming down the road. There is no doubt about it, [digitally sourced videos and photos] are going to be used more as evidence.'²⁷⁹ Some of the questions to be asked in further research include the following: How will digitally-sourced evidence impact reliance on witness testimony? How will digitally-sourced evidence be weighted in comparison to more 'traditionally sourced' evidence? To what extent will courts and commissions question digitally-sourced evidence for chain of custody, informed consent, bias, manipulations, and misinterpretations?

As the title of this thesis states, ICT tools are a double-edged sword. They are double-edged because of the benefits they provide and the subsequent challenges they pose for human rights researchers, but also because these tools can be used to protect human rights just as easily as they can be used to violate them. Not only can the human rights community use ICT tools to protect the rights of people, authorities and human rights abusers can also use them as instruments for oppression.

²⁷⁸ More information on the functions and uses for the eyeWitness to Atrocities application can be found at: <http://www.eyewitnessproject.org/>

²⁷⁹ Gosnell [n 189].

Given that the human rights community has yet to fully embrace ICT tools, they have fallen behind their opponents (the violators of human rights) in utilising technology to their advantage: human rights abusers are using far more advanced technology compared to human rights researchers.²⁸⁰ It is time for the human rights community to tap into the benefits that ICT tools can provide. The human rights watchdogs of our world must learn how to use these tools effectively and ethically, and become more adequately armed to take on the violators of human rights.

²⁸⁰ Nowak [n 79].

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