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The Utility of User-Generated Content in Human Rights Investigations

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Over the past decade, open source, user-generated content available on social media networks and the Internet has become an increasingly important source of data in human rights investigations. Although use of this data will not always generate significant findings, the sheer volume of user-generated content means that it is likely to contain valuable information. As Craig Silverman and Rina Tsubaki note in the introduction to the *Verification Handbook for Investigative Reporting*, such analysis, at least with respect to journalism, is now "inseparable from the work of cultivating sources, securing confidential information and other investigative tactics that rely on hidden or less-public information."[1]

In this chapter, I will examine how firsthand video recordings of events by citizen witnesses, journalists, activists, victims, and perpetrators are being used to document, prosecute, and find remedies for human rights violations. In this context, I do not focus on why such recordings are made, but rather on the extent to which they provide a particular audiovisual perspective on conflict or human rights violations. I take it as given that most of this material will be biased in what it depicts and what it leaves out, and that all of it requires significant analysis and appraisal before being authenticated and used for investigatory purposes. I focus primarily on video recordings, whether intentionally produced for human rights documentation or not, because of their prevalence in recent human rights investigations, their rich informational content, their verifiability, and their capacity for rapid dissemination via social media. My purpose is to highlight the potential utility, obvious limitations, and significant evidentiary, legal, and ethical dangers of relying on eyewitness videos by examining cases in which they are already being used.

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[1]   C. Silverman and R. Tsubaki, "The Opportunity for Using Open Source Information and User-Generated Content in Investigative Work," in C. Silverman (ed.), *Verification Handbook for Investigative Reporting* (Maastricht, the Netherlands: European Journalism Centre, 2015), http://verificationhandbook.com/book2/chapter1.php.

I THE ROLE OF USER-GENERATED CONTENT IN HUMAN RIGHTS INVESTIGATIONS

As the nongovernmental organization WITNESS notes in its seminal 2011 report, *Cameras Everywhere*,

> Video has a key role to play, not just in exposing and providing evidence of human rights abuses, but across the spectrum of transparency, accountability and good governance. Video and other communication technologies present new opportunities for freedom of expression and information, but also pose significant new vulnerabilities. As more people understand the power of video, including human rights violators, the more the safety and security of those filming and of those being filmed will need to be considered at each stage of video production and distribution.[2]

Ultimately, WITNESS argues, the ability to access the technology, skills, and expertise needed to analyze these videos will determine "who can participate – and survive – in this emerging ecosystem of free expression."[3]

A wide range of people produce video content and share it through social media, the Internet, semiprivate communication channels like Telegram and Snapchat, or privately via e-mail or physical storage. Conflict events, protests, riots, and other similar events are increasingly being live-streamed as they happen. Some of the creators of this content have been trained in human rights documentation, while others have not. In many cases, damning video will come from the perpetrators themselves, who use the content to boast of their power and accomplishments or seek funding from sympathetic outsiders.

Courts, tribunals, truth commissions, and other fact-finding (or perhaps fact-generating) bodies, as well as journalists and human rights advocates, need to be sensitive to the wide-ranging quality, completeness, and utility of user-generated content. They cannot assume that the content was intentionally created or that the people represented in this material know that their images and activities are being stored, processed, and analyzed for human rights purposes. Extra care must be taken to ensure the privacy, security, and other basic rights of people who produce such content or appear in it. In the case of perpetrator video, they must assume that the content has public relations goals, and they must take care not to spread messages of hate or extremism. Additionally, it is crucial to keep in mind that many war crimes and human rights abuses will continue to leave few electronic traces.[4] Like all other forms of evidence, video is not a magic bullet or panacea that will put an end to atrocities. Nor does it mitigate the need for

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[2] S. Padania et al., *Cameras Everywhere: Current Challenges and Opportunities at the Intersection of Human Rights, Video, and Technology* (Brooklyn, NY: WITNESS, 2011), p. 16.
[3] Ibid.
[4] A. Azoulay, *The Civil Contract of Photography* (Brooklyn, NY: Zone Books, 2008).

eyewitnesses and victims to provide testimony and for investigators to visit the scenes of crimes and conduct thorough investigations.[5]

Nonetheless, video has potential value at every stage of a human rights investigation, whether that investigation is designed to feed into advocacy or legal proceedings.[6] Most commonly, video generates leads that can be used to start an investigation. It can also provide evidence to establish that a crime or violation occurred, or it can be used to support a particular factual finding, such as whether a particular weapon was used in a conflict or whether pollution from a particular mining site is polluting a water source. Sometimes, it can also link a particular person, group, government, or company to the violation in question.

A great deal of citizen video provides lead evidence or evidence that a crime or violation occurred. For example, it might show the aftermath of an attack or event, such as destroyed infrastructure, suffering victims, dead bodies, inhumane working conditions, or a damaged environment. Evidence linking a perpetrator to a crime or violation is often harder to come by, but the creative investigator can sometimes mine video collections for this information.[7] Videos might show the presence of particular soldiers in a place where a crime has occurred, as demonstrated by uniforms, vehicles with identifiable symbols, or traceable license plates. Further, weapons and munitions (either spent or unexploded) might be traced to a given military unit, government, or manufacturer. Videos posted to the Internet might also include scenes of government officials or other individuals spurring their followers to commit acts of violence against another group. In the nonconflict context, videos might show violations in places of employment, harassment of minority groups, or environmental harm.

As noted above, the information obtained from video can play a central role in criminal proceedings or truth commissions, but it can also contribute to advocacy campaigns aimed at naming and shaming perpetrators or seeking restitution and justice for victims. Video evidence can help combat standard state or corporate responses to allegations of abuse by making it harder to deny the existence of violations. Video can also be used to raise awareness of and elicit sympathy from those who had not previously been aware of the scope or scale of abuses in a particular context. The recent focus on police brutality against black people in the United States is one example of this phenomenon. Although governments and rights violators can deny the content of written reports or question the methodology

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[5] A. Whiting, "The ICC Prosecutor's New Draft Strategic Plan," *Just Security*, www.justsecurity .org/24808/icc-prosecutors-draft-strategic-plan.

[6] K. Matheson, "Video as Evidence: To be evidence, what does video need?," *New Tactics in Human Rights*, July 20, 2014, www.newtactics.org/comment/7427#comment-7427.

[7] WITNESS offers an excellent guide that explains the elements of linkage evidence and also provides tips to activists and ordinary citizens about filming video in a way that provides information about responsibility for particular actions. WITNESS, "Proving Responsibility: Filming Linkage and Notice Evidence," https://library.witness.org/product/video-as-evidence-proving-responsibility-filming-linkage-and-notice-evidence.

used to generate statistical claims, video and other images require the accused to develop a different response. Visual evidence makes it much harder for violators to engage in the tactic that Stanley Cohen calls "literal denial" and requires them to provide an alternative explanation for their actions or claim that their actions were justified.[8]

In a case of police or security force abuse, for example, it will be more difficult (but not impossible) for the government to claim that the use of deadly weapons was justified when video evidence suggests that a political protester or criminal suspect was not an immediate threat. In the case of a massacre caught on film, the perpetrators will have to convincingly demonstrate that the videos in question were staged or depict another time or place. Video evidence also makes it harder to engage in the standard repertoire of denial techniques used to refute historical claims; i.e., that "it happened too long ago, memory is unreliable, the records have been lost, no one will ever know what [really] took place."[9]

Video evidence also makes it harder (but, again, not impossible) to impugn the credibility of victims or witnesses who testify against perpetrators because the videos that buttress their claims can be authenticated. Using geolocation techniques developed by the video verification community, it is possible to verify the location of a filmed event by matching features using services like Google Earth, Google Street View, and satellite imagery. Additionally, it is sometimes possible to determine the date and approximate time of day using shadows, weather, sun position, and other climatic clues in the footage.[10] Information extracted from video can also be combined with, and corroborated by, forensic evidence (such as autopsy, medical, or pathology reports), other scientific evidence (such as environmental analysis), official records, media reports, intercepted communications, satellite imagery, other open source data, or expert testimony (such as weapons/munitions analysis or political analysis).[11]

II THE CHALLENGE OF VIDEO EVIDENCE IN LAW AND ADVOCACY

Video evidence is, of course, not definitive and presents significant challenges for activists and advocates in legal and other contexts. Audiences might grow tired of viewing traumatic video and become desensitized to its effects. On the other hand, they might become less likely to believe accounts that are not supported by

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[8]   S. Cohen, *States of Denial: Knowing about Atrocities and Suffering* (Cambridge: Polity Press, 2001), p. 7.
[9]   S. Cohen, "Government Responses to Human Rights Reports: Claims, Denials, and Counter-claims" (1996) **18** *Human Rights Quarterly* 517–43 at 523.
[10] Amnesty International and Forensic Architecture, "Rafah: Black Friday Report," Methodology section, July 24, 2015, https://blackfriday.amnesty.org/methodology.php.
[11] Ibid.

convincing audiovisual evidence. The persistent creation of falsified media by states, pranksters, and other nefarious actors could also impugn legitimate content.[12] Further, any good defense attorney, government operative, or rights violator can challenge the authenticity of the video or the interpretation of its content (e.g., that victims were indeed dead but were not killed by the claimed perpetrator, or that the victims did not heed warnings to disperse in the moments before the video was shot). They can also offer alternative explanations for what is seen (e.g., that the munitions in question were stolen from the army by a rebel force, or that anti-government forces were dressed up as army personnel). Video evidence cannot always help dispute claims made by perpetrators that their actions were justified on national or internal security grounds, that the victims posed a threat, or that the action captured on video was wrong but the matter has already been dealt with internally.

III THREE CASE STUDIES: SYRIA, UKRAINE, AND NIGERIA

In order to better understand the landscape of video content, this section discusses three recent case studies in which videos were used to support human rights advocacy and accountability. These cases are not fully representative of all of the possible uses of audiovisual evidence in human rights work, but they provide geographically diverse exemplars that, when viewed together, highlight many of the important issues in this domain. They highlight the diverse ways that video content is being used in advocacy and accountability efforts; they also demonstrate the variety of conflict-related information that can be gathered from video, including the distribution of weapons systems, the relative strength of military units or protest movements, and social linkages among various actors in a conflict or political movement. These uses go beyond the kind of secondhand witnessing and visual representation of an event that have traditionally characterized video evidence and raise important questions about the representativeness and reliability of audiovisual accounts. These cases also illustrate the way in which video can become the source of other forms of evidence (e.g., forensic studies of blood stains or wounds that have not been directly examined by an expert, or ballistics reports on weapons that are seen only on video), as well as how it can complement or add credence to expert testimony about physical evidence.

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[12] C. Silverman, *Lies, Damn Lies and Viral Content: How News Websites Spread (and Debunk) Online Rumors, Unverified Claims and Misinformation* (New York: Tow Center for Digital Journalism and Columbia Journalism School, 2015), http://towcenter.org/research/lies-damn-lies-and-viral-content; *see also* G. King, J. Pan, and M. E. Roberts, "How the Chinese Government Fabricates Social Media Posts for Strategic Distraction, not Engaged Argument," Working Paper, *American Political Science Review*, http://j.mp/1Txxiz1.

A *Case Study 1: Syria*

The volume of video generated in the ongoing conflict in Syria may very well be the new norm. As of summer 2017, estimates suggest that more than one million conflict-related videos have been filmed there. Put another way, it would take more time to view videos of the conflict than the amount of time the conflict has actually been taking place. Most of these videos can be found on social media sites like YouTube and Live Leak. Many others are circulated through e-mail and nonpublic networks like Telegram. Perpetrators (including armed combatants and Syrian military personnel), journalists, medical professionals, and citizens caught in the middle of fighting regularly post videos, photographs, and text updates of conflict situations on Twitter, Facebook, and other social media sites.

1 Overview of Projects

Several initiatives have turned to this open source material to better understand the situation in Syria. Perhaps the most extensive of these efforts is the Carter Center's Syria Conflict Mapping Project. Initiated in 2013, this project utilizes publicly available information to document the formation of armed groups in the country and the relationships among these groups; conflict events, including ground troop clashes, aerial bombardments, and artillery shelling; and sightings of advanced weaponry. In doing so, the Syria Conflict Mapping Project is able to better understand "the evolution of armed group relations, the geographic areas of control of the various antagonists involved, and the regional and international dimensions of the conflict."[13] The Carter Center is well aware that this information may be false, misleading, or incomplete, so those who run the project hold "regular discussions with conflict stakeholders [including face-to-face meetings in Turkey and within Syria itself, as well as through phone, Internet, or social media conversations] in order to ensure the accuracy of information collected and gain further insights regarding conflict development."[14]

The Carter Center effort is not the only project that that has sought to map the dynamics of the Syrian conflict through user-generated content. Over the last four years, a British citizen and blogger, Eliot Higgins, has been tracking weapons depicted in social media videos in Syria and is now considered to be one of the foremost experts on the conflict. There are also various military, intelligence, and supranational efforts to monitor open source material from the Syria conflict, but their details are less well known.

[13] Carter Center, *Syria Countrywide Conflict Report #4* (Atlanta, GA: Carter Center, 2014), p. 3, www.cartercenter.org/resources/pdfs/peace/conflict_resolution/syria-conflict/NationwideUp date-Sept-18-2014.pdf.
[14] Ibid.

2 Weapons Analysis

Both Higgins and the Carter Center have used social media content to identify weapons used in the Syrian conflict. Beginning in 2012, Higgins and a network of citizen journalists began monitoring hundreds of YouTube channels for content from a diverse array of participants in the conflict in order to document the types of weapons being displayed.[15] Through this tedious and time-consuming work, they were among the first to document the Syrian government's use of Chinese-made cluster munitions and homemade barrel bombs in civilian areas, even though such weapons are considered illegal by most countries and the government denied their existence.[16] Higgins was also among the first to identify the funneling of weapons stockpiles from the former Yugoslavia to certain rebel groups in Syria, which led to the discovery of an arms supply network financed by the Saudi Arabian government and at least tacitly approved by the American government.[17]

The Carter Center's Syria Conflict Mapping Project has also monitored the flow of heavy and sophisticated weapons throughout the country by identifying this weaponry in social media videos. According to the project leader, Chris McNaboe, there are a variety of reasons why armed groups include information about their weapons capability in videos. Many groups boast of their capabilities (including posting videos of their sophisticated weapons) in order to intimidate enemies or convince funders and citizens to join their cause. Others are required by their weapons suppliers (especially governments) to provide proof of their use – e.g., we give you twenty rockets, you post twenty videos of them being used – to ensure that the weapons are not falling into the wrong hands.[18]

In its September 2014 report, the Carter Center analyzed more than 2,500 videos that provided information about weapons, which allowed it to "gain insight into the amounts, networks, timeframes, impacts, and intentions surrounding these efforts."[19]

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[15] M. Weaver, "How Brown Moses exposed Syrian arms trafficking from his front room," *The Guardian*, March 21, 2013, www.theguardian.com/world/2013/mar/21/frontroom-blogger-analyses-weapons-syria-frontline.

[16] E. Higgins, "Clear Evidence of DIY Barrel Bombs Being Used by the Syrian Air Force," *Brown Moses Blog*, October 27, 2012, http://brown-moses.blogspot.co.uk/2012/10/clear-evidence-of-diy-barrel-bombs.html; E. Higgins, "Cluster Bomb Usage Rose Significantly Across Syria," *Brown Moses Blog*, October 12, 2012, http://brown-moses.blogspot.co.uk/2012/10/cluster-bomb-usage-rises-significantly.html.

[17] E. Higgins, "Evidence of Multiple Foreign Weapons Systems Smuggled to the Syrian Opposition in Daraa," *Brown Moses Blog*, January 25, 2013, http://brown-moses.blogspot.co.uk/2013/01/evidence-of-multiple-foreign-weapon.html; E. Higgins, "Weapons from the Former Yugoslavia Spread through Syria's War," At War: Notes from the Front Line, *The New York Times*, February 25, 2013, http://atwar.blogs.nytimes.com/2013/02/25/weapons-from-the-former-yugoslavia-spread-through-syrias-war/?_r=0; C. J. Chivers and E. Schmitt, "Saudis Step Up Help for Rebels in Syria With Croatian Arms," *The New York Times*, February 26, 2013, p. A1.

[18] C. McNaboe, e-mail to author, June 3, 2015.

[19] Carter Center, *Syria Countrywide Conflict Report #4*, p. 23.

The report argued that that the analysis of three particular weapons – the Croatian RAK-12 rocket launcher, the Chinese HJ-8 antitank guided missile, and the American BGM-71 TOW antitank guided missile – provided valuable clues about the arming of Syrian opposition groups by Saudi Arabia and Qatar with American assistance. The report further notes that all three weapons systems seem to have been distributed on a very limited basis to select groups, but adds that that they did not stay in the hands of the intended recipients.[20]

3 Network Dynamics

One of the most novel applications of user-generated content in the analysis of the Syrian conflict involves documentation of the emergence and shifting allegiances of armed groups. Beginning with the earliest defections from the Syrian Armed Forces and continuing with the formation of new armed groups to fight against Assad's regime, a large majority of anti-Assad fighters and factions announced their intention to defect via highly stylized videos posted online to social media. Indeed, as of June 2015, the Syria Conflict Mapping Project had access to an archive of videos documenting nearly 7,000 armed group formations that had been collected and maintained by the group Syria Conflict Monitor. While there are fighters and armed groups not represented in this collection, either because videos were not located or because the groups formed without such an online announcement, the Carter Center argues that the data gathered from these formation videos present a relatively good picture of the situation on the ground "due to the fact that many of the largest and most capable armed groups operating in Syria have a strong online presence."[21] By counting the number of people in each publicly available formation video, the Carter Center approximated between 68,639 and 85,150 fighters (it is often difficult to establish an exact count because of the low quality of some videos) across the country as of August 2013.[22]

The Carter Center acknowledges that it is very difficult to know what happens with fighters and units after they form, because this information is generally not available on social media. Based on an analysis of connections within the social networks of these groups, though, Carter Center researchers do claim to be able to determine which units are becoming more or less powerful within the opposition. They also make note of which units fade or disband over time based on social media activity. The Carter Center determines relationships among existing armed groups by their connections on social media. The more connections to a particular group,

[20] Ibid.
[21] Carter Center, *Regional Conflict Report: Ras al-Ain* (Atlanta: Carter Center, 2013), p. 2, www
      .cartercenter.org/resources/pdfs/peace/conflict_resolution/syria-conflict/Ras-al-AinReport.pdf.
[22] Carter Center, *Syria Countrywide Conflict Report #1* (Atlanta: Carter Center, 2013), p. 4, www
      .cartercenter.org/resources/pdfs/peace/conflict_resolution/syria-conflict/nationwidereport-aug-
      20-2013.pdf

the more influential it is considered to be. These connections do not necessarily imply cooperation or subordination, though, and the report calls for additional research to understand the exact nature of the linkages.

One finding made by the Carter Center was that as of late 2013, although many groups had claimed allegiance to the Free Syrian Army (FSA, the organization formed by officers who defected from the Syrian Armed Forces at the beginning of the armed conflict) through national-level "military councils," the FSA remained largely a franchise organization, because local-level armed groups had very few direct connections with FSA leadership. "Instead," the report notes, those local groups "have sought to support themselves, and most have established their own patronage networks and leadership structures that have served to increase factionalism of the opposition."[23] This report also noted that social media connections demonstrated the growth of clear divisions among armed groups in particular regions, providing further evidence of factionalism on the ground. At the beginning of 2014, however, the Carter Center reported a coalescing of rebel forces on social media, presumably because of the necessity of banding together to simultaneously fight ISIS and the Syrian government. These new networks seemed to differ from previous military council-type arrangements in that they were much larger and demonstrated "a more credible commitment to integration than previous efforts."[24]

The Carter Center reported that component groups began to dismantle their own organizations' structures in order to better integrate into the larger command structure. "As a sign of this dissolution," the report notes, "component groups of the Islamic Front have been coordinating their imagery and public outreach via their various social media outlets. These groups now coordinate their Twitter hashtags, use a uniform profile picture for all Facebook, Twitter, and YouTube pages, and share each other's posts." Such coordination, however, should not imply unification, which "will prove to be more difficult than coordinating Twitter handles" or creating a few new integrated fighting units.[25] Indeed, many of these armed groups have very different understandings of the conflict, how they should be operating, and what the future of Syria ought to look like. Social media links also seem too tenuous to serve as the basis for legal claims about responsibility for war crimes and human rights abuses, given the multiplicity of reasons why one group might follow or friend another on a social media platform. Such links, however, ought to be considered valuable starting points for investigations into chains of command and strategic alliances.

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[23] Carter Center, *Syria Countrywide Conflict Report* #2 (Atlanta, GA: Carter Center, 2013), p. 5, www.cartercenter.org/resources/pdfs/peace/conflict_resolution/syria-conflict/nationwideup date_nov-20-2013.pdf.

[24] Carter Center, *Syria Countrywide Conflict Report* #3, p. 6.

[25] Ibid.

B *Case Study 2: Russian Intervention in Ukraine*

After gaining public attention for his work on weapons systems in Syria, Eliot Higgins and his colleagues in the citizen journalism community turned their attention to Ukraine in the summer of 2014 after the downing of Malaysia Airlines Flight 17 (MH17) by what was most likely a Russian Buk missile being operated by separatists in eastern Ukraine. Since this initial foray into the Ukraine crisis, Higgins and his collaborators have devoted significant resources to countering Vladimir Putin's claim that the conflict in Ukraine is solely a civil war and that the secessionists are merely disgruntled "people who were yesterday working down in mines or driving tractors."[26] Higgins and his collaborators use social media and satellite imagery to track the flow of weapons and soldiers from Russia over the border into the eastern section of Ukraine, where many ethnic Russians live and where pro-Russian and secessionist feelings are strongest. This content is sourced from media produced and uploaded by Russian soldiers fighting in Ukraine and Ukrainian and Russian civilians on both sides of the war who are "posting photographs and videos of convoys, equipment, and themselves on the Internet" on global sites like Instagram, Facebook, Twitter, and YouTube as well as regional sites like VKontact.[27] They also use commercially available satellite imagery to show the movement of Russian troops and weapons to and over the border with Ukraine. Higgins and his colleagues created the website Bellingcat.com to disseminate their open source findings and share the methods they use. Bellingcat also serves as a sort of virtual community for citizen journalists who analyze open source intelligence.

The Bellingcat team's analyses of publicly available material now holds so much weight in the policy world that the Atlantic Council relied heavily on them in its May 2015 report, entitled *Hiding in Plain Sight: Putin's War in Ukraine*, a direct response to the Russian government's demands for evidence to back up American and European accusations of its involvement in Ukraine. The title refers to the open source information that "provides irrefutable evidence of direct Russian military involvement in eastern Ukraine."[28] This report notes that "the aspect of Russian involvement in Ukraine with the widest breadth of open source information is the movement of heavy military equipment across the border, with hundreds of videos and photographs uploaded by ordinary Russians and Ukrainians who have witnessed direct Russian support of the hostilities in eastern Ukraine."[29] By geolocating reports of individually identifiable weapons (especially tanks, armored trucks, and mobile missile systems not known to be deployed by the Ukrainian Army), the Bellingcat team has been able to trace the flow of military equipment from Russia to separatist

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[26] Quoted in M. Czuperski et al., *Hiding in Plain Sight: Putin's War in Ukraine* (Washington, DC: Atlantic Council, 2015), p. 7.
[27] Ibid.
[28] Ibid., p. 3.
[29] Ibid., p. 8.

groups in Ukraine. The team does so by analyzing serial numbers; visible markings such as words, phrases, and graphics; paint colors; damage patterns; and other unique identifiers present on the equipment.

The Bellingcat team has also used social media postings by soldiers and citizens to pinpoint the locations of Russian military personnel setting up camps near the border with Ukraine. One such example described in the Atlantic Council report is the Kuziminsky camp, which was "established only forty-six kilometers from the Ukrainian border" in the days after the annexation of the Crimea.[30] This camp did not exist before 2014. Kuziminsky camp, the report notes, "became the site for hundreds of military vehicles, including tanks from the 5th Tank Brigade" of the Russian Army, which is normally stationed far away in Siberia.[31] According to the Atlantic Council report, equipment staged at Kuziminsky camp and elsewhere later turned up in eastern Ukraine, and Bellingcat's analysis of artillery craters created during the conflict (using techniques modified from on-the-ground analysis methods published in US army manuals) suggests that at least some missiles were fired from the Russian side of the border near newly constructed military camps.[32] In a few cases, Russian soldiers actually filmed the launch of these weapons. Damage and craters within Ukraine can be tied directly back to these launch events through analysis of missile trajectories and geolocation of launch sites.[33] The purpose of this shelling, according to the report, was to provide cover for separatists during their offensives.

The report notes that personnel stationed at these camps were decisive in the defeat of the Ukrainian Army at Debaltseve in February 2015. While the Russian government openly acknowledges that hundreds or even thousands of Russian citizens crossed over the border into Ukraine to fight alongside local separatists, it vehemently denied that Russian soldiers had done so. As the Atlantic Council report notes, though, the mounting flow of military casualties back into Russia – revealed through monitoring of the border by the Organization for Security and Co-operation in Europe, reporting by various Western media outlets, and interviews with family members of dead soldiers by the nongovernmental organization Open Russia – contradicts this assertion.[34] Evidence from known Russian soldiers' unauthorized posting of photographs on their social media accounts provides additional evidence of their participation in hostilities within Ukraine.[35]

Perhaps the most damning claim put forth by Bellingcat was that a Russian-supplied Buk missile launcher was used by separatists when they accidentally shot down MH17. Using numerous images and videos from citizens posted to social

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[30] Ibid., p. 13.
[31] Ibid.
[32] Ibid.
[33] The report provides documentation of Bellingcat's methods on pp. 18–19 and 28–31.
[34] Ibid., p. 17.
[35] Ibid., pp. 25–27.

media sites, Bellingcat investigators were able to trace the movement of a particular Russian Buk launcher (which they call "3x2" because of the identification number on its side) both through Russia to the Ukrainian border in June 2014 and through Ukraine to the likely launch site of the deadly attack in July 2014. The attack itself was established through social media images of a white smoke trail posted soon after the plane was downed; at least one of these images was verified using metadata from the original photograph as well as subsequent review of satellite imagery.[36]

The Russian government went to great lengths to refute claims that it supplied the weapon used to down the plane and instead placed blame on the Ukrainian Army. As early as July 21, 2014, just four days after the MH17 was shot down, the Russian Ministry of Defense published a series of satellite images that purported to show that the actual culprit was a Ukrainian Buk launcher, not a Russian one. These satellite images were used by Russia to claim that a Buk missile launcher and three support vehicles that had previously been seen parked at a Ukrainian military base near Donetsk prior to July 17 were no longer there, and that two Buk missile launchers as well as another Ukrainian military vehicle were stationed near where MH17 was shot down on July 17.

Bellingcat undertook a forensic analysis of the satellite images using a variety of methods, including metadata analysis (which can reveal evidence of manipulation); error-level analysis (which examines compression levels throughout the image – a big difference in compression in a particular area of the image would suggest a modification was made at that location); and reference analysis (which involves comparing an image with other sources of information to determine the extent to which its contents are plausible). In this case, imagery from Google Earth was compared to the images supplied by the Russian Ministry of Defense.[37] Bellingcat investigators determined, based on an examination of vegetation patterns and the growth of an oil leak from one of the trucks located at the site, that the satellite image the Russian Ministry of Defense claimed was taken on July 17, 2014, was actually taken sometime between June 1 and June 18, 2014, and, further, that it was "highly probable" that two large banks of clouds were digitally added to this image using Adobe Photoshop CS5 software to "obscur[e] details that could have been used for additional comparisons with historical imagery."[38]

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[36] Bellingcat Investigation Team, "Origin of the Separatists' Buk: A Bellingcat Investigation," *Bellingcat*, November 8, 2014, www.bellingcat.com/news/uk-and-europe/2014/11/08/origin-of-the-separatists-buk-a-bellingcat-investigation; D. Romein, "Is This the Launch Site of the Missile That Shot Down Flight Mh17? A Look at the Claims and Evidence," *Bellingcat*, January 27, 2015, www.bellingcat.com/news/uk-and-europe/2015/01/27/is-this-the-launch-site-of-the-missile-that-shot-down-flight-mh17.

[37] Bellingcat Investigation Team, "Forensic Analysis of Satellite Images Released by the Russian Ministry of Defense," *Bellingcat*, May 31, 2015, www.bellingcat.com/wp-content/uploads/2015/05/Forensic_analysis_of_satellite_images_EN.pdf.

[38] Ibid., p. 18.

Bellingcat made similar claims about the digital manipulation of the Russian satellite images purporting to show two Ukrainian Buk missile launchers and another Ukrainian military vehicle in the area where MH17 was shot down on July 17. The report claims that all three locations that show these vehicles on the satellite imagery have a different level of compression (and thus a higher error rate) than other parts of the image. This led them to conclude that the image had been modified in some way in the regions showing the three vehicles. Additional analysis of this image based on a comparison of soil structures (i.e., patterns of vegetation and other markings that result from human activity such as agriculture) with historical Google Earth images suggests that it was taken prior to July 15, 2014. The Bellingcat investigative team ultimately concluded that "the Russian Ministry of Defense presented digitally modified and falsely dated satellite images to the international public in order to implicate the Ukrainian army in the downing of MH17."[39] They could only make this conclusion by analyzing the satellite imagery in tandem with video and photographs found on social media, demonstrating the value that user-generated content can add to investigations of conflict and human rights violations.

C *Case Study 3: Nigeria and Boko Haram*

Amnesty International recently released two major reports detailing the findings of its investigations into human rights abuses and war crimes committed by Boko Haram and Nigerian security forces in northeastern Nigeria. In both reports, video played a crucial role in demonstrating that the core elements of a crime had occurred. For example, video evidence corroborated Amnesty's claims about violations committed by Boko Haram and Nigerian forces; provided support for its conclusions that those committing the violations were under control of Boko Haram or Nigerian forces; provided evidence that neither force was protecting itself or the public from immediate harm; and provided additional context for Amnesty's conclusions.

The first report, *"Our job is to shoot, slaughter and kill": Boko Haram's Reign of Terror in North East Nigeria*, documents Boko Haram's utter disregard for human rights norms and international laws of war in its quest to impose its own extreme view of Islam on ever larger swaths of the country.[40] Amnesty claims that Boko Haram's actions have led to the deaths of more than 6,800 people, destroyed the homes and livelihoods of hundreds of thousands of people, and forced well over a million people from their homes. The group directly targets all people who do not follow their interpretation of Islam (called "kuffirs," or unbelievers), often killing them dozens at a time simply for not pledging allegiance, or destroying their homes

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[39] Ibid., p. 42.
[40] Amnesty International, *"Our Job Is to Shoot, Slaughter and Kill": Boko Haram's Reign of Terror in North East Nigeria* (London: Amnesty International, 2015).

and property. Boko Haram also makes life extraordinarily difficult for all who reside in the territories it controls. Christians and members of the Civilian Joint Task Force (JTF) are the most common victims of these attacks, but Muslims who do not subscribe to Boko Haram's rigid interpretation of the Koran and laws of the Caliphate are also targeted. Civilian infrastructure – including schools, religious facilities, transportation systems, and places of business – is often destroyed in its military campaigns. Further, rape and sexual violence, sexual slavery, and forced marriages are all used as tools of war. There are also allegations of Boko Haram forcing children to fight on its behalf.

Many of these atrocities have been captured on video, and property destruction in Gamborou and Bama has been confirmed via satellite imagery. For example, Amnesty reports that after a failed military campaign in September 2014, Boko Haram fighters executed numerous prisoners at one of its facilities in Bama. Boko Haram later released propaganda videos of the killings, which occurred both in the prison and on a bridge in the area. Amnesty describes the first video as follows:

> [A]rmed men are seen offloading approximately thirteen bound men from a truck on a bridge. The detainees are lined up in a row and, one at a time, brought to the railings. The gunmen push each detainee's head between the railings, then they shoot the detainee in the head and tip the body into the river. The video shows eighteen men killed this way and the scene ends with more men being offloaded from a truck. The final scene shows gunmen walking through a small room with bunk beds, checking and then shooting at bodies lying on the floor. It is not possible to tell whether those on the ground were already dead.[41]

In the second video, a continuation of the first, Amnesty reports:

> One of the gunmen turns to the camera and explains that they are executing prisoners: "Our job is to kill, slaughter and shoot, because our promise between god and us is that we will not live with unbelievers. We are either in the grave and with unbelievers on the earth or unbelievers in the grave and us on the earth... There is either Muslim or disbeliever, it is either of the two you will be a Muslim or a non-Muslim. These ones are living under apostate government."[42]

According to Amnesty, local residents, human rights researchers, and satellite imagery confirmed that the locations seen in the videos were in Bama.[43]

In the second report, *Stars on Their Shoulders. Blood on Their Hands*, Amnesty alleges that the Nigerian military committed war crimes (and potentially crimes against humanity) in its noninternational armed conflict against Boko Haram in the northeastern part of the country.[44] The report alleges that Nigerian military

[41] Ibid., p. 60.
[42] Ibid.
[43] Ibid., pp. 60–61.
[44] Amnesty International, *Stars on Their Shoulders. Blood on Their Hands: War Crimes Committed by the Nigerian Military* (London: Amnesty International, 2015).

violations included extrajudicial execution of more than 1,200 people, arbitrary arrests of at least 20,000 people, hundreds or more enforced disappearances, the deaths of more than 7,000 people in military custody, and "countless" acts of torture.[45] The Amnesty report relied heavily on classic human rights investigation methods, including more than 400 interviews with "victims, their relatives, eyewitnesses, human rights activists, doctors, journalists, lawyers, and military sources," along with analysis of more than 800 leaked official government documents, including military reports and correspondence between high-level Nigerian military officials and local units stationed in the northeastern part of the country.[46] Amnesty also collected and analyzed "more than ninety videos and numerous photographs showing members of the security forces and their allied militia, the Civilian JTF, committing violations," plus satellite imagery of attack sites and mass graves. Some of these videos were gathered from social media outlets like YouTube and others were acquired by Amnesty International through its network of local researchers and NGO partners.[47]

Using this diverse array of material, Amnesty was able to corroborate victim and eyewitness statements with official government documents and video and photographic evidence, as well as provide context for this visual and textual evidence. Further, Amnesty also "shared its findings with the Nigerian authorities during dozens of meeting[s] as well as 55 written submissions, requesting information and specific action to address the violations."[48] Ultimately, Amnesty also made the report and accompanying evidence available to the Office of the Prosecutor at the International Criminal Court, since Nigeria is a party to the Rome Statute and the ICC has jurisdiction in this case if national courts are unwilling or unable to investigate the allegations and prosecute if appropriate.

As in the MH17 investigation, video and photographic evidence was not used alone in this case. Rather, it was combined with other forms of evidence. Visual evidence provided strong corroboration of evidence drawn from witness interviews that the "young men and boys" subjected to extrajudicial killings in twenty-seven incidents in 2013 and 2014 posed no immediate danger to military personnel or the general public, thus undermining claims that the killings were justified. The victims "were not taking part in hostilities, were not carrying arms, and were not wearing uniforms, insignia or other indications that they were members of Boko Haram."[49] In fourteen of these cases, the report notes, "military forces, sometimes in collaboration with Civilian JTF members, executed a large number of victims, at times dozens or even hundreds in one day."[50]

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[45] Ibid., p. 4.
[46] Ibid.
[47] Ibid.
[48] Ibid.
[49] Ibid., p. 37.
[50] Ibid., p. 40.

Video evidence shows that the victims were under the firm control of the military and Civilian JTF members. Victims were shot or had their throats slit in relatively orderly operations without any judicial hearing, filing of formal charges, access to an attorney, or even cursory investigation. Further, evaluation of eyewitness testimony and visual evidence strongly suggests that many additional deaths in detention were caused by "starvation, thirst, severe overcrowding that led to spread of diseases, torture and lack of medical attention, and the use of fumigation chemicals [to kill vermin] in unventilated cells."[51]

Video evidence also played a key role in corroborating allegations of torture and other forms of ill treatment in the context of mass arrests. The report notes that videos show

> soldiers and members of the Civilian JTF beating suspects, making them lie down and walking on their backs, threatening them, humiliating them, tying their arms and making them roll in the mud, and in one case attempting to drown a suspect in a river. Several videos show soldiers loading detainees onto a military truck as if they are sand bags.[52]

A key aspect of Amnesty's argument is that the actions taken by the military and civilian JTFs appear to be similar at multiple locations across the northeastern part of the country, suggesting that there was widespread and systematic effort to target young men and boys regardless of whether they were actually Boko Haram. Most may have just seemed to be sympathetic to the cause, or were simply in the wrong place at the wrong time. The extent to which the policy was formalized cannot, of course, be deduced from video evidence, but the videos do make clear that the acts were not isolated, uncoordinated, or haphazard, but rather followed a similar pattern.[53]

One of the most disturbing instances occurred after Boko Haram fighters let hundreds of detainees out of the prison at the Giwa military barracks on the morning of March 14, 2014. Although the Nigerian military put up little resistance to Boko Haram's initial attack (and, in fact, seemed to have known about the attack in advance and cleared out the night before), they were ruthless in their efforts to seek out and recapture escapees later in the day. The military and civilian JTF conducted house-to-house searches and rounded up more than 600 escapees who had not already fled with Boko Haram fighters. Most of these individuals were extrajudicially executed during the course of the day. These events were recorded in twelve videos, some of which were shot by the perpetrators themselves, obtained by Amnesty International. The videos are described in the report as follows:

> One of the videos, apparently taken by a member of the Civilian JTF with the military commander's camera, shows 16 young men and boys sitting on the ground

in a line. One by one, they are called forward and told by the military commander to lie down in front of a pit. Two or three men assist in holding the detainees. Armed soldiers and Civilian JTF members then cut the men's throats with a blade and dump them into an open mass grave. None of the men are tied and they seem to accept their fate without resistance, but the presence of armed soldiers may have prevented them from trying to escape. They may also have been in shock. The video shows five of the men being killed in this way. The fate of the remaining detainees is not shown on the video, but eyewitness accounts confirmed that nine of them had their throats cut while the others were shot dead.

A second video featuring some of the same perpetrators, taken earlier that day at the same location, shows two other detainees digging a grave, guarded by armed men in uniforms. The soldier who, according to witness testimony, is the commander of the group then tells one of the detainees to lie down in front of the pit. Men in civilian clothes who appear to be Civilian JTF members hold his legs and head, while the commander puts his right foot on the man's side, raises his knife, kisses it, shouts "Die hard Commando" and cuts the throat of the restrained young man. All the other soldiers and Civilian JTF members shout "Yes oga [boss], kill him."[54]

These descriptions were corroborated through numerous interviews, by matching uniforms with the battalion said to be involved in the operation (one soldier had the phrase "Borno State Operation Flush" on his uniform), and by the presence of an ID number on a weapon in one of the videos clearly linking it to the battalion in question.[55]

There are, of course, significant limitations to video evidence, like all other forms of evidence in human rights investigations. Lack of records, cover-up efforts by the military, and the challenges of obtaining eyewitness testimony all make it difficult to verify exactly how many extrajudicial executions take place even when events are caught on video. While Amnesty was able to successfully document more than 1,200 killings, the organization notes that it received numerous additional reports that lacked sufficient corroborating detail to be included in its report.[56]

IV DISCUSSION

The three case studies presented above do not represent the entire spectrum of uses of video in human rights advocacy and accountability efforts. They do not illustrate the use of video to protect and promote economic, social, and cultural rights or in

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54 Ibid., p. 46.
55 These videos were first made public by Amnesty International in August 2014. Amnesty International, "Gruesome Footage Implicates Nigerian Military in Atrocities," www.amnestyusa.org/news/press-releases/gruesome-footage-implicates-nigerian-military-in-atrocities.
56 Amnesty, *Stars on Their Shoulders. Blood on Their Hands*, p. 40.

American or Western European contexts. The three case studies do, however, demonstrate at least some of the ways in which video can be used in human rights and conflict documentation.

Especially in the cases of Ukraine and Nigeria, video is treated as one of many forms of evidence to be corroborated and integrated into a coherent package of evidence. In these two cases, video does not stand on its own in an investigation. The Carter Center takes a somewhat bolder approach, making claims about conflict dynamics – in terms of both the size and influence of particular armed groups and the weapons they possess – based on information extracted from social media networks and social media content.

While it is impossible to definitively test the Carter Center's claim that the online presence of armed groups is roughly similar to their actual presence (with the notable exception of the Islamic State), the Center's analysts have strong personal networks in Syria and in neighboring Turkey and are able to take advantage of human intelligence to point out errors and omissions in their open source intelligence. Even with this confirmation, the Carter Center does not claim that its findings are completely accurate or statistically valid, only that they provide insight that can be used in conflict analysis and in decision-making concerning diplomacy and humanitarian aid. The Carter Center recognizes that definitive quantitative claims cannot be made using social media data without significant additional corroboration and statistical analyses of uncertainty. Like most other forms of evidence, social media is a convenience sample – i.e., data that is relatively easily available to the investigator, as opposed to data collected through some form of systematically randomized or cluster sampling – and they acknowledge the limitations this creates.

The Ukraine case shows that governments are increasingly paying attention to the results of open source investigations, and sometimes go to great lengths (including falsifying data) to call their legitimacy into question. At the same time, it also demonstrates that in an age of open source intelligence, even ordinary people can contribute to the monitoring of conflict and human rights violations. Data about conflict and human rights abuse that was once only available to military or intelligence officials can now be found on the same platforms where cat videos, sports highlights, and other cultural ephemera are routinely shared.

The widespread availability of this content has numerous positive aspects, but it also creates significant challenges. At the most basic level, repeated viewings of audiovisual depictions of death, abuse, and torture can have a variety of negative impacts at the individual and societal levels. Excessive viewing of such content can traumatize the human rights investigator, journalist, or even the casual viewer. I experienced this vicarious or "secondary" trauma firsthand after seeing a particular image of a dismembered child in a video that depicted the aftermath of a shelling in Syria, and I have spoken to numerous colleagues who have experienced it as well. It

is increasingly becoming a topic of analysis in both journalism and human rights work.[57] Indeed, much of the impetus for the research my human rights colleagues and I are conducting on semi-automating video analysis using machine learning and computer vision comes from a desire to limit exposure to images of human suffering and brutality.

A corollary to secondary trauma is that the proliferation of horrific content on the Internet may ultimately desensitize the public to what is being portrayed. At a certain point, many people will learn to tune out the reality of what they see because it is too graphic, while a minority of the public will find some perverse pleasure in it in an exploitative and voyeuristic, but not empathetic, way. There are many websites and YouTube channels that present the violence in Syria and other countries accompanied by intense music rather than historical, cultural, or situational context.[58] More work will have to be done to determine the effects of the availability of this content on public opinion, but there is little indication that it led to an upsurge in demand for humanitarian intervention in the conflict.

Even more concerning than the potential negative impacts of video in the human rights domain is the reality that the proliferation of audiovisual evidence of war crimes and human rights abuses has not yet resulted in greater accountability, at either the domestic or international level. Few high-level government or military officials accused of war crimes or crimes against humanity have been forced to admit culpability, provide reparations, or step down from positions of power due to the existence of video evidence. Nor have corporate decision-makers been held to account for the actions of their companies on communities, environments, or workers due to damning video evidence.

But perhaps this is too much to ask of video or any other form of evidence. Achieving justice and accountability requires political will. There is already ample evidence available to convict high-level perpetrators of war crimes and human rights abuses in many violent situations around the world, but no action is taken due to geopolitical or economic realities.

That said, advocacy efforts, including naming-and-shaming campaigns, often lead to important policy change in the short term, and the preservation of relevant content allows for historical clarification and the possibility of justice and accountability in the long term.[59] One need only to look at Guatemala's efforts to bring Efrain Rios Montt to trial for crimes committed during his presidency in 1982–83, Argentina's recent successful conviction of the architects of its Dirty War (including

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[57] S. Dubberley, E. Griffin, and H. Mert Bal, "Making Secondary Trauma a Primary Issue: A Study of Eyewitness Media and Vicarious Trauma on the Digital Frontline," *Eyewitness Media Hub*, June 15, 2015, http://eyewitnessmediahub.com/research/vicarious-trauma.

[58] For a sampling, search YouTube for "Syria death," among many other combinations of terms. There are many videos with more than one million hits.

[59] J. Aronson, "Preserving Human Rights Media for Justice, Accountability, and Historical Clarification" (2017) **11** *Genocide Studies and Prevention: An International Journal* 82–99.

the dictator at the time and his closest associates), or the Extraordinary African Chamber's recent conviction of Chad's ex-dictator Hissène Habré for crimes against humanity that took place in the 1980s to see that justice can emerge many years, or even decades, after crimes occur.[60] Moving forward, video – properly understood, analyzed, and contextualized – will undoubtedly play an important role in these processes.

[60] "Guatemala Trials before the National Courts of Guatemala," *International Justice Monitor*, www.ijmonitor.org/category/guatemala-trials; "Operation Condor: Former Argentine junta leader jailed," *BBC* News, May 28, 2016, www.bbc.com/news/world-latin-america-36403909; "La Chambre Africaine D'assises Prononce La Perpetuite Contre Hissein Habre," Chambres africaines extraordinaires, May 30, 2016, www.chambresafricaines.org/index.php/le-coin-des-medias/communiqu%C3%A9-de-presse/638-la-chambre-africaine-d%E2%80%99assises-pro nonce-la-perpetuite-contre-hissein-habre.html.