CHALLENGES IN COLLECTING AND ADMITTING OPEN-SOURCE AND USER-GENERATED EVIDENCE OF ATROCITY CRIMES: PROSPECTS FOR UKRAINE

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This note considers the admissibility of open-source and user-generated evidence before international criminal tribunals, examining the history of open-source evidence in the context of broader criticisms of the evidentiary regime of international criminal courts. Turning to current international criminal cases resulting from The Russian Federation's full-scale invasion of Ukraine, this note analyzes the impact that recent methodological and technological developments may have on the International Criminal Court's approach to open-source and user-generated evidence, as well as certain unique aspects of this particular situation as they relate to such evidence. In doing so, it concludes that the permissive evidentiary regime adopted by the International Criminal Court coupled with recent advancements will allow submission of open-source and user-generated evidence, though the weight accorded to such evidence is subject to judicial discretion and may not be known either ex-ante or even as decisions are made.

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I. Introduction

The Russian Federation's full-scale invasion of Ukraine on February 24, 2022 was livestreamed.[1] Over the following months, as the war has continued, social media users and open-source investigators have gathered evidence of apparent atrocity crimes, while debunking in real time Russian attempts to discredit that evidence.[2] With two arrest warrants issued by the

1. *See, e.g.*, Jane Lytvynenko, *I Can't Stop Watching a Livestream of Kyiv*, The Atlantic (Feb. 23, 2022), https://www.theatlantic.com/technology/archive/2022/02/ukraine-russia-conflict-livestream/622900/; Zaporizhzhia Nuclear Power Plant, *Zaporizhzhia NPP Livestream*, YouTube (Mar. 3, 2022), https://www.youtube.com/watch?v=1W6pvPJwUi4&ab_channel=%D0%97%D0%B0%D0%BF%D0%BE%D1%80%D1%96%D0%B7%D1%8C%D0%BA%D0%B0%D0%90%D0%95%D0%A1; Paul Murphy, *Troops and military vehicles have entered Ukraine from Belarus*, CNN (Feb. 24, 2022) ("CNN has witnessed, through a livestream video, troops atop a column of military vehicles entering Ukraine from a border crossing with Belarus.

The livestream video was taken at the Senkivka, Ukraine crossing with Veselovka, Belarus. The column was seen entering Ukraine around 6:48 a.m. local time.").

2. Malachy Browne, David Botti & Haley Willis, *Satellite images show bodies lay in Bucha for weeks, despite Russian claims*, N.Y. Times (Apr. 4, 2022),

International Criminal Court (ICC)[3] and an ongoing investigation into the situation, some of the evidence collected in the last year may soon face evaluation by the ICC. Whether that evidence will be admitted, and what weight it will be assigned is an open question; the ICC has relied on open-source evidence as its predominant support for charges in only one arrest warrant at the time of writing—that of Mahmoud al Werfalli, a case which never made it to trial.[4] Beyond *al Werfalli*, the ICC has taken a cautious approach to open-source evidence, primarily relying on it to corroborate traditional forms of evidence. Nevertheless, recent technological and methodological advancements in connection with the collection and verification of open-source and user-generated evidence may influence the extent to which the ICC is willing to rely on these forms of evidence and methods of evidence collection. Evaluating these prospects requires assessing the history and critiques of open-source and user-generated evidence in international criminal tribunals, to contextualize its use in the context of Russia's invasion of Ukraine.

II. History and Perspectives on Open-source and User-generated Evidence

A. *What are Open-source and User-generated Evidence?*

Open-source information and user-generated evidence are conceptually distinct yet often overlapping types of information. The concept of open-source information has existed for several decades, first used to refer to sources like news articles and radio broadcasts, while the term "user-generated" information was coined only recently by Professor Rebecca Hamilton,

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https://www.nytimes.com/2022/04/04/world/europe/bucha-ukraine-bodies.html; Michael Sheldon, *Russia's Kramatorsk 'Facts' Versus the Evidence*, Bellingcat (Apr. 14, 2022), https://www.bellingcat.com/news/2022/04/14/russias-kramatorsk-facts-versus-the-evidence/.

3. Press Release, Int'l Crim. Ct., *Situation in Ukraine: ICC judges issue arrest warrants against Vladimir Vladimirovich Putin and Maria Alekseyevna Lvova-Belova*, Press Release (Mar. 17, 2023).

4. *Prosecutor v. Al-Werfalli*, ICC-01/11-01/17, Warrant of Arrest, ¶¶ 11-22 (Aug. 15, 2017), https://www.icc-cpi.int/libya/al-werfalli.

a leading expert on atrocity crime prosecution and the role of such evidence.[5]

"Open-source" focuses on the moment of collection by investigators: it is defined by the Berkeley Protocol on Digital Open-Source Investigations as "publicly available information that any member of the public can observe, purchase or request without requiring special legal status or unauthorized access."[6] Open-source information is typically defined in contrast to closed source information, which is "information with restricted access or access that is protected by law, but which may be obtained legally through private channels, such as judicial processes, or offered voluntarily."[7] While apparently straightforward, determining whether information that is available online is open-source can present difficulties—for instance, legally-protected and inadmissible information may nevertheless be posted online without the relevant party's permission. In contrast, some information that may require specialized skills to access—such as that posted on unlisted dark web sites—can be categorized as open-source since anyone with the appropriate skillset could find the information.[8] The most crucial distinction, however, is that information that is gathered by interacting with individuals is considered closed-source.[9]

"User-generated," meanwhile, focuses on the moment of creation: it is information that is captured by ordinary individuals, such as a video or photo captured on a smartphone.[10] Hamilton defines "user-generated evidence" as distinct from other "user-generated content" (*e.g.*, most social media posts) in that it is recorded with the intent[11] of it being used for criminal

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5. Rebecca Hamilton, *User-Generated Evidence*, 57 COLUM. J. TRANSNAT'L L. (2018).

6. Office of the U.N. High Comm'r for Hum. Rts. & Hum. Rtss Ctr. at the U. of Cal., Berkeley, Sch. of L., *Berkeley Protocol on Digital OpenSource Investigations*, U.N. Doc HR/PUB/20/2 (2022), https://www.ohchr.org/sites/default/files/2022-04/OHCHR_BerkeleyProtocol.pdf [hereinafter *Berkeley Protocol*].

7. *Id.*

8. *Id.*, at ¶ 14.

9. *Id.*

10. Rebecca Hamilton, *User-Generated Evidence*, 57 COLUM. J. TRANSNAT'L L. (2018).

11. While Hamilton uses the word "intent" in her definition, intent has been used loosely in this sense by both herself and others. For example, a commonly cited instance of user-generated evidence is the *al-Werfalli* videos,

accountability. However, it can also encompass videos posted online for multiple purposes. A prominent case of the latter scenario is the recording and posting of videos depicting police brutality in the United States in 2020.[12]

User-generated evidence and open-source information are thus connected but distinct. A video of a war crime recorded by a bystander and posted to Twitter will be both open-source, because it is available to the public, and user-generated because it was recorded by an ordinary person. However, video captured by a witness to a crime that is uploaded directly to an evidence-collection portal is user-generated but not open-source, and satellite imagery is often open-source but never user-generated.

B. *History and Critiques of Open-source and User-generated Evidence at International Criminal Tribunals*

The use of open-source evidence in international criminal tribunals is not new. Since many international crimes have a contextual element—such as the existence of an armed conflict for war crimes or widespread and systematic violations for crimes against humanity— sources like news articles, non-governmental organization (NGO) reports, and radio broadcasts have been used to establish background facts that do not relate to the specific guilt of the accused. The flexible evidentiary standards of international criminal tribunals have permitted this usage, but with the rise of social media and prosecutors' subsequent attempts to rely on user-generated and open-source evidence to directly establish the guilt of the accused, tribunals began to curtail reliance on such evidence.

1. *Evidentiary Standards of International Criminal Tribunals*

International criminal tribunals have had, as a rule, extremely relaxed evidentiary rules. This flexibility stems from several factors. First, the most common justification for imposing few restrictions on the admission of evidence to international

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but it is not at all clear that those videos were recorded with the intent of seeking criminal accountability. Rather they, and many similar videos which belong in this category, might be recorded with the purpose of intimidating opposing forces. *Id.*

12. *Id.* at 3.

criminal tribunals is that, unlike domestic criminal trials, international criminal trials do not use a jury.[13] Well-informed judges are expected to be able to understand the relative weight and value of different forms of evidence when reaching their decisions. Second, the history of international criminal procedure as an amalgamation of domestic systems enabled the importation of civil law's comparatively loose evidentiary standards while maintaining a largely adversarial format. Third, the unique nature of international crimes as including contextual elements, evidence of which will not directly establish the guilt of the accused, provides a subset of evidence that should not be submitted to the same rigorous standards as evidence used to establish the guilt of the individual. Finally, varied visions of the *purpose* of international criminal law—particularly the view that international criminal tribunals should be used to establish an accurate historical record—speaks in favor of less stringent evidentiary rules than those used in domestic criminal prosecutions.

a. The International Military Tribunals and *Ad Hoc* Tribunals

The predecessors to the ICC, comprising the International Military Tribunal (IMT) in Nuremberg, the International Military Tribunal for the Far East (IMTFE) in Tokyo, and later ad hoc tribunals for the former Yugoslavia and Rwanda, lacked substantial guidance on the admission of evidence. The charters of the IMT and IMTFE both provided that "The Tribunal shall not be bound by technical rules of evidence. It shall adopt and apply to the greatest possible extent expeditious and non-technical procedure, and shall admit any evidence which it

13. This view was espoused in judgments of the IMT (Trial of Major War Criminals (IMT) Vol. VII at 14; Judgment of the IMTFE, dissenting opinion of Judge Pal, 630) and more recently by the ICTY trial chamber in *Blaškić* which wrote "[a]t the outset, it is appropriate to observe that the proceedings were conducted by professional judges with the necessary ability for first hearing a piece of evidence and then evaluating it so as to determine its due weight with regard to the circumstances in which it was obtained, its actual contents and its credibility in light of all the evidence tendered." (Prosecutor v. Blaškić, Case No. IT-95-14-T, Trial Judgment, ¶ 35 (Int'l Crim. Trib. for the Former Yugoslavia Mar. 3, 2000).)

deems to be of probative value,"[14] but should "rule out irrelevant statements and issues."[15] In keeping with this permissive approach, the IMT did accept written witness statements in lieu of oral testimony,[16] a practice that was more hesitantly adopted at the International Criminal Tribunal for the former Yugoslavia (ICTY) and the International Criminal Tribunal for Rwanda (ICTR) decades later, as the practice deprives opposing counsel of the opportunity to cross-examine.

The evidentiary rules of the ICTY, which then formed the basis for those of the ICTR, adopt the same core considerations for admission as the IMT: relevance and probative value.[17] The rules add a new consideration that "a Chamber may exclude evidence if its probative value is *substantially outweighed by the need to ensure a fair trial*,"[18] (emphasis added) but the permissive "may" in combination with the strong threshold of "substantially outweighed" retains a high degree of judicial discretion and continues to favor admission. In 2000, the ICTY (and later the ICTR) added Rule 92*bis*, which allows for the submission of written witness statements in lieu of oral testimony if it is used to prove issues other than the acts and conduct of the accused as charged in the indictment.[19] In 2006, the ICTY broadened the potential uses of written testimony with the addition of Rule 92*ter*, which allows parties to present written statements that seek to prove "the acts and conduct of the accused" so long as the witness is available for cross-examination and attests that the written statement is what the witness would say if examined.[20] Over time, the case law of the ICTY[21] has demonstrated

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14. U.N., *Charter of the IMT - Annex to the Agreement for the prosecution and punishment of the major war criminals of the European Axis*, Art. 19, Aug. 8,1945; U.N., Charter of the IMTFE Art 13(a), Jan. 19, 1946.

15. *Charter of the IMT* at Art. 18; Charter of the IMTFE at 12(b)

16. Nuremberg Mil. Tribunals, Uniform Rules of Procedure, Rule 21 (Jan. 8, 1948).

17. Int'l Crim. Trib. for the Former Yugoslavia, Rules of Procedure and Evidence, Rule 89(c) (Jul. 1994).

18. *Id.* Rule 89(d) (emphasis added).

19. Other factors weighing against include public interest in oral presentation, indication that the document's nature and source "render it unreliable, or that its prejudicial effect outweighs its probative value," or a particular need to cross-examine the witness. *Id.* at Rule 92*bis*(A)(ii).

20. *Id.* Rule 92*ter*.

21. The ICTR, while using nearly identical rules, has limited case law on the admission of documentary evidence, as the vast majority of evidence brought before that tribunal took the form of witness testimony.

a liberal attitude towards admission of documentary evidence, particularly when evidence does not speak directly to the guilt of the accused.[22] However, it has maintained that the issues of admitting evidence and according it weight should be kept separate;[23] once evidence is admitted, the Chamber should evaluate its reliability, authenticity, and probative value, and ascribe it the appropriate weight in rendering a decision.

b. The International Criminal Court

The evidentiary standards of the ICC in many ways resemble those of its predecessors. The Rome Statute maintains the fundamental evidentiary principles of relevance and probative value, balanced against prejudicial effect.[24] The same permissive approach to evidence has also continued. As described in *Prosecutor v. Bemba*, the Rome Statute created a system that "eschew[s] generally the technical formalities of the *common law* system of admissibility of evidence in favour of the flexibility of the *civil law* system."[25] Moreover, the ICC continues to separate the admission of evidence from the weight it is accorded.[26] Finally, ICC Rule 68(2)(b) of Evidence and Procedure mirrors that of ICTY Rule 92*bis*, in allowing pre-recorded testimony only if there is an opportunity for cross-examination or if the testimony supports a proposition other than the acts and conduct of the accused.

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22. Prosecutor v. Blaškić, Case No. IT-95-14-T, Trial Judgment, ¶¶ 34-36 (Int'l Crim. Trib. for the Former Yugoslavia Mar. 3, 2000); Prosecutor v. Brđanin, Case No. IT-99-36, Order on the Standards governing the Admissions of Evidence, ¶[18 ((Int'l Crim. Trib. for the Former Yugoslavia Feb. 15, 2002).

23. *See, e.g.*, Prosecutor v. B. Simić, Case No. IT-95-9, Reasons for Decision on Admission of 'Variant A&B Document,' ¶ 12 (Int'l Crim. Trib. for the Former Yugoslavia May 22, 2002).

24. Rome Statute of the Int'l Crim. Court, 2187 U.N.T.S. 3, U.N.T.S. Reg. No. I-38544, U.N. Doc A/CONF.183/9, (hereinafter *Rome Statute*) Art. 69(4) ("The Court may rule on the relevance or admissibility of any evidence, taking into account, inter alia, the probative value of the evidence and any prejudice that such evidence may cause to a fair trial or to a fair evaluation of the testimony of a witness.").

25. Prosecutor v. Bemba Gombo, ICC-01/05-01/08, Decision on the admission into evidence of materials contained in the prosecution's list of evidence, ¶ 17, note 28 (Nov. 19, 2010).

26. *Rome Statute,* Art. 56(4).

Despite these similarities, the ICC does make a crucial development: under the Rome Statute article 54(1), the Office of the Prosecutor (OTP), supervised by the pre-trial chamber, is required to search equally for inculpatory and exculpatory evidence.[27] Beyond the symbolic and conceivably equalizing intention of this obligation, it has important procedural effects, particularly in the OTP's reliance on third parties for gathering evidence.[28] For example, reliance on third parties with stated goals in their evidence collection may raise questions as to the OTP's adherence to this obligation.

c. Critiques of Evidentiary Standards

The flexible evidentiary approach of international criminal tribunals has been subject to significant criticism, particularly regarding excessive production of evidence and resultant delays, systemic bias in evidence collection and admission, unacknowledged prejudicial effect, and use of courts for narrative effect.

One frequent complaint is that the permissive evidentiary regime results in excessive production of evidence, causing trials to take years (even before factoring in appeals), causing unnecessary expense, prolonging the stress imposed on witnesses and victims who participate in the trial, and deferring satisfaction and reparations for victims.[29] In an extreme case, Slobodan Milošević died in the fourth year of his trial before the ICTY, which saw the testimony of 295 witnesses and five thousand evidentiary exhibits. Some have asked whether more selective admission of evidence would have allowed the case to conclude during his lifetime.[30]

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27. *Id.* Art. 54(1)(a).

28. *See generally* American University War Crimes Research Office, *Investigative Management, Strategies, and Techniques of the International Criminal Court's Office of the Prosecutor* (Oct. 2012).

29. Peter Murphy & Lina Baddour, *Evidence and Selection of Judges: the Need for a Harmonized Approach*, *in* Pluralism in International Criminal Law 369, 378 (Elies van Sliedregt & Sergey Vasiliev eds., 2014).

30. Peter Murphy, *No Free Lunch, No Free Proof: The Indiscriminate Admission of Evidence is a Serious Flaw in International Criminal Trials*, 8 J. Int'l Crim. Just. 539, 542 (2010) ("I contend that if Milosevic had been tried applying one or two rudimentary rules of evidence, perhaps simply some elementary scrutiny of documents for authenticity and multiple levels of hearsay, it would

The aforementioned article 54(1) of the Rome Statute partially addresses another prominent criticism: the bias produced by the mix of inquisitorial-style evidence admission without the accordant responsibility. In an inquisitorial style of justice, the court is able to investigate alleged crimes of its own volition, and since it is the court undertaking this investigation, the rules on admissibility are much more lenient. Critics of the evidence regime of the *ad hoc* tribunals noted that the OTP acted like an agent of the court in investigating alleged crimes and was allowed the kind of leniency on admissibility that a court organ is granted, but it did not have the obligation common to inquisitorial regimes to investigate equally inculpatory and exculpatory evidence. In other words, it had the advantages of a neutral agent of the court, but only argued for one side. Scholars Wayne Jordash, K.C. and Matthew R. Crowe also highlighted how, in the context of this leeway granted to the prosecutor, the difference in resources between the prosecution and defense becomes all the more problematic. Where the prosecution frequently employs a coalition of States, NGOs, and international organizations, the defense has no comparable resources available to investigate the prosecution's claims and dispute the evidence.[31] While the article 54(1) obligation to investigate equally addresses this in part, the Statute does not include the obligation, common in civil law jurisdictions, to undertake certain investigative acts upon request by the suspect.[32] Even in the ICC, allegations remain that the OTP is failing to remain impartial in its investigations,[33] but the ability of parties to bring

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have made the trial fairer, shorter and more efficient. It might even have concluded within the lifetime of the accused.").

31. Wayne Jordash QC & Matthew R. Crowe, *Evidentiary Challenges for the Defence: Domestic and International Prosecutions of International Crimes*, *in* Pluralism in International Criminal Law 273, 282 (Elies van Sliedregt & Sergey Vasiliev eds., 2014).

32. Caroline Buisman, Myriam Bouazdi & Matteo Costi, *Antecedents and Context of International Criminal Trials: Principles of Civil Law*, *in* Principles of Evidence in International Criminal Justice 7, 29 (Karim A. A. Khan, Caroline Buisman & Christopher Gosnell eds., 2010).

33. *See* Kai Ambos, *Ukrainian Prosecution of ICC Statute Crimes: Fair, Independent and Impartial?*, EJIL: Talk!, (June 10, 2022), https://www.ejiltalk.org/ukrainian-prosecution-of-icc-statute-crimes-fair-independent-and-impartial/; Yudan Tan & Suhong Yang, *The Joint Investigation Team in Ukraine: An Opportunity for the International Criminal Court?*, 22 Chinese J. Int'l L., ¶¶ 11-12 (2023).

challenges for perceived partiality under the Statute is a definite improvement.

Perhaps the best supported criticism of the evidentiary standards of international criminal tribunals is that judges fail to acknowledge their own susceptibility to prejudicial evidence. The idea that judges are better able to discern the probative value of evidence and are therefore less likely to be prejudiced by unreliable evidence is one of the foundational justifications for loose evidentiary rules in international courts and in civil law systems.[34] This assumption manifests again in the idea that admissibility and weight should be considered separately, allowing evidence whose reliability or authenticity has been called into question to nonetheless be admitted and simply assigned lesser weight during deliberations.[35] There is some support for the proposition that judges are less influenced than the average person in some scenarios, such as when presented with an emotional witness.[36] However, a study on camera-perspective bias found that when presented with recorded confessions that focused on either the accused, the interrogator, or both, judges, to the same extent as the general population, were more likely to believe the confession was voluntary when the camera focused on the accused.[37] Moreover, critics contest whether international criminal judges can actually admit great quantities of evidence and later neatly separate evidence based on its probative value.[38] In failing to screen evidence of questionable authenticity or reliability, judges may incorporate that information into their understanding of events, even if it is formally ascribed little weight. Peter Murphy, former legal counsel before the ICTY writes:

> The task of assessing the weight of evidence increases in difficulty in proportion to the length of the trial and the volume of evidence. When evidence is admitted it . . . not only becomes intertwined with other evidence,

34. Buisman, supra note 32.

35. Murphy, *supra* note 30 at 545.

36. Elena Wessel et al., *Credibility of the Emotional Witness: A Study of Ratings by Court Judges,* 30 L. Hum. Behav. 221 (2006).

37. G. Daniel Lassiter et al., *Evaluating Videotaped Confessions: Expertise Provides No Defense against the Camera- Perspective Effect*, 18 Psych. Sci. 224, 225 (2007).

38. Murphy, *supra* note 30, at 552.

> but its significance, however spurious, is purportedly confirmed every time it is referred to during trial. . . I respectfully submit that it is not possible for the judicial mind to remain unaffected by the vast accumulations of evidential debris admitted in an average ICTY trial. There comes a time, months or perhaps years after a piece of evidential debris has been admitted, when . . . the totality of the evidence simply obscures the sum of its parts. By the time the chamber comes to deliberate it is too late to detach any one part from the undifferentiated sum of the evidence. In this situation, one piece of fabricated evidence may have poisoned an entire trial without the judges even knowing it has happened.[39]

This risk remains present in international criminal courts and forms an important background to understanding misgivings about over-reliance on open-source evidence, which can be voluminous, difficult to verify, and highly prejudicial in that it may impart only one perspective in a format that carries an appearance of objectivity.[40]

Finally, an ongoing concern is the use of international criminal tribunals for narrative effect. Even if evidence of questionable probative value is not meant to establish the guilt of the accused, its admission can still risk transforming the court into a platform for propaganda, in which opposing sides compete to establish their disparate versions of history. One high profile incident of video evidence used for apparent narrative effect is the Scorpions video presented to the ICTY. During the trial of Slobodan Milošević, the prosecution, with no notice to the defense, introduced a video during the cross-examination of a witness. Sidestepping questions of its reliability, the prosecution showed short clips from the two-hour video which appeared to show executions carried out by the Scorpions paramilitary group.[41] The ICTY eventually rejected

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39. *Id.*

40. International Bar Association, *Evidence Matters in ICC Trials*, 29 (Aug. 2016).

41. Vladimir Petrović, *A Crack in the Wall of Denial: The Scorpions Video in and out of the Courtroom*, *in* NARRATIVES OF JUSTICE IN AND OUT OF THE COURTROOM, (D. Zarkov & M. Glasius eds., 2014).

the video as evidence,[42] but the video had a profound impact on public perception of the genocide.[43] In any event, many would argue that it is unfair to the accused to have personal guilt conflated with attempts for either side to establish a historical narrative.[44]

These critiques of the inclusive approach to evidence before international criminal tribunals— delays, pro-prosecution bias, unacknowledged prejudicial effect, and appropriation of the judicial process for narrative purposes—have been debated for decades, but the introduction of open-source evidence interacts with each of them. The immense quantity of evidence that can be gathered using open sources is bound to exacerbate concerns about overproduction of evidence, and studies indicate that videos have strong prejudicial effects on both judges and the public. This impacts the judicial process and enables greater use of the courts for narrative effect regardless of the actual authenticity or reliability of the evidence itself.[45] Moreover, while the ease of collecting open-source evidence has the potential to level the playing field between well-resourced prosecutorial coalitions and comparatively poorly resourced defense teams in terms of access to evidence, overproduction could outstrip the defense's capacity to process that evidence.

2. *Open-source and User-generated Evidence At the ICC*

The ICC's issuance of an arrest warrant for Mahmoud al-Werfalli in 2017 marked the first time that the Court relied predominantly on evidence gathered from social media to issue charges.[46] Specifically, the warrant charged al-Werfalli with the

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42. The Court found that it, along with the rest of a bundle of late-submission evidence, was not of sufficient probative value relative to that which was already submitted to justify the additional submission.

43. Petrović, *supra* note 41.

44. *See generally* Martti Koskenniemi, *Between Impunity and Show Trials,* 6 Max Planck Yearbook of United Nations Law 1, 1 (2002).

45. Yvonne McDermott, Alexa Koenig & Daragh Murray, *Open Source Information's Blind Spot: Human and Machine Bias in International Criminal Investigations*, 19 J. Int'l Crim. Just. 85, 98–99 (2021).

46. *See generally* Alexa Koenig, *Harnessing Social Media as Evidence of Grave International Crimes*, #Verified Magazine UC Berkeley Hum. Rts. Ctr. (Oct. 23, 2017), https://medium.com/humanrightscenter/harnessing-social-media-as-evidence-of-grave-international-crimes-d7f3e86240d.

war crime of murder under Article 8(2)(c)(i) of the Rome Statute, based on seven cellphone videos recording seven separate incidents, all of which were posted to social media.[47] A second warrant the following year added additional charges based on an eighth video.[48] While the Pre-Trial Chamber's standard to issue an arrest warrant is "reasonable grounds to believe that a person has committed a crime,"[49] the question remained as to how the trial chamber would treat video evidence taken from social media, particularly if the prosecution lacked witness testimony regarding the circumstances of its recording. After years of speculation and conversation surrounding the potential of open-source evidence for proving international crimes, the long-awaited trial never came: al-Werfalli was never arrested, and was assassinated in Benghazi, Libya on March 24, 2021.[50]

While the *al-Werfalli* case did not materialize as the first test of how the ICC would treat a case that relied predominantly on open-source evidence, such evidence has been used in instances where a lesser burden of proof is demanded, that is, in pre-trial chambers and at trial for purposes other than establishing the guilt of the accused. The OTP often depends almost entirely on open sources[51] in making a determination of whether there is "reasonable basis to believe" an individual committed crimes within ICC jurisdiction.[52] Since its inception, the ICC has faced the challenge of investigating alleged atrocity crimes in unstable

47. Prosecutor v. Al-Werfalli, ICC-01/11-01/17, Warrant of Arrest, ¶¶ 11–22 (Aug. 15, 2017).

48. Prosecutor v. Al-Werfalli, ICC-01/11-01/17, Second Warrant of Arrest (Jul. 4, 2018).

49. *Rome Statute*, Art. 58(1)(a).

50. *Libyan commander wanted for war crimes by ICC shot dead*, Al Jazeera (Mar. 24, 2021), https://www.aljazeera.com/news/2021/3/24/libyan-commander-wanted-for-war-crimes-by-icc-gunned-down.

51. Lindsey Freeman, *Prosecuting Atrocity Crimes with Open Source Evidence*, *in* Digital Witness: Using Open Source Information for Human Rights Investigation, Documentation, and Accountability 48, 53 (Sam Dubberley, Alexa Koenig & Daragh Murray eds., 2019) (citing Alexa Koenig, Keith Hiatt & Khaled Alrabe, *Access Denied? The International Criminal Court, Transnational Discovery, and The American Servicemembers Protection Act,* Berkeley J. Int'l L. 1, 36, 1 (2018)); *see also* Int'l Crim. Trib. for the Former Yugoslavia Statute, Art. 18 (as amended Jul. 7, 2009) (stating that the prosecutor may proceed "on the basis of information obtained from any source, particularly from Governments, United Nations organs, intergovernmental and nongovernmental organisations").

52. *Rome Statute*, Art. 53.

regions. In beginning its first investigation into the self-referral of the Democratic Republic of the Congo (DRC) for alleged war crimes and crimes against humanity during the country's ongoing armed conflict, the OTP was quickly confronted with the reality that safe access to the relevant regions would be a problem for investigators.[53] In order to deliver on its mandate in this context, the OTP turned to intermediaries to locate and interview witnesses, and relied heavily on the reports of Human Rights Watch and the already established U.N. Peacekeeping mission in the region.[54] This strategy was successful in securing three indictments, two of which resulted in convictions.[55] In the fourth case submitted to the Pre-Trial Chamber, however, the tides changed regarding the over-reliance on evidence gathered by third parties. In *Mbarushimana*, the Pre-Trial chamber declined to confirm charges, taking issue with the manner in which witnesses were questioned, and referring to reports by Human Rights Watch and the U.N. as containing "anonymous hearsay" which could be used for no purpose beyond corroboration.[56]

The Pre-Trial Chamber doubled down on this view in 2013 when it adjourned the confirmation charges hearing in *Prosecutor v Gbagbo*, an unusual procedural decision motivated by the lack of reliable evidence presented.[57] There, even in the context of establishing contextual elements for crimes against humanity, the Chamber noted "serious concern" with the Prosecutors' reliance on NGO reports and press articles, which "cannot in any way be presented as the fruits of a full and proper investigation by the Prosecutor in accordance with article 54(1)(a) of the Statute."[58] The Chamber noted that such reports "may be a useful introduction to the historical context of a conflict" but cannot be regarded as a substitute for other

53. Freeman, *supra* note 51.

54. *Id.*

55. Respectively, *Prosecutor v. Lubanga, Case No. ICC-01/04-01/06*, Prosecutor v. Katanga, Case No. ICC-01/04-01/07, and Prosecutor v. Ngudjolo, Case No. ICC-01/04-02/12.

56. Prosecutor v. Mbarushimana, ICC-01/04-01/10, Decision on the Confirmation of Charges, ¶ 78 (Dec. 16, 2010).

57. Prosecutor v. Gbagbo, ICC-02/11-01/11, Decision adjourning the hearing on the confirmation of charges pursuant to article 61(7)(c)(i) of the Rome Statute (June 3, 2013).

58. *Id.* ¶ 35.

evidence.[59] While the standards for admitting evidence are lower in the Pre-Trial Chamber, *Gbagbo* marked the limits of how removed the OTP can be from the collection of evidence it presents to the Court.[60]

The ICC Trial Chamber, meanwhile, has reiterated that open-source material like NGO reports, news articles, and reports of U.N. Peacekeeping missions must be regarded as having value only to corroborate other evidence.[61] In that context, however, it has accepted NGO, UN, and media reports to establish contextual elements of crimes such as the existence of a widespread and systematic attack.[62] Even in the *Gbagbo* case, the charges were eventually confirmed and the Trial Chamber accepted news reports to support the proposition that the accused knew of the attack.[63] However, the actual weight given to any one piece of evidence is difficult to ascertain, given the Court's tendency to allow the submission of evidence but defer a decision on the admissibility and weight of such evidence until it is ready to render a judgment. For example, in *Prosecutor v. Al Hassan*, the Trial Chamber admitted sixty-three pieces of open-source evidence over the defense's objections that they were "anonymous hearsay,"[64] but wrote that "the Chamber will not issue rulings on admissibility for each item of evidence during the course of proceedings. Rather, the Chamber will recognise the submission of items of evidence without a prior ruling on relevance and/or admissibility and will consider its relevance and probative value as part of the holistic assessment of all evidence submitted when deciding on the guilt or innocence of

59. *Id.*

60. The same concerns of over reliance on U.N. Peacekeeping reports and NGO reports were cited in the acquittal of Mathieu Ngudjolo Chui. *Prosecutor v. Chui*, ICC-01/04-02/12, Judgment pursuant to article 74 of the Statute, ¶¶ 117- 123 (Dec. 18, 2012).

61. Prosecutor v. Gombo, ICC-01/05-01/08, Decision on the admission into evidence of items deferred in the Chamber's 'Decision on the Prosecution's Application for Admission of Materials into Evidence Pursuant to Article 64(9) of the Rome Statute,' ¶¶ 22, 25(June 27, 2013). ¶ 270

62. Prosecutor v. Gbagbo, ICC-02/11-01/11-656-Red, Decision on the confirmation of charges (June 12, 2014).

63. *Id.*

64. Prosecutor v. Mahmoud, (Decision on Prosecution application submitting 63 open source exhibits into evidence), ICC-01/12-01/18, ¶ 9 (June 15, 2021).

the accused."[65] In doing so, it sidestepped final determinations on the evidentiary weight of these items, given that the final decision did not itemize which evidence the court relied on and to what extent.

Nevertheless, the open-source evidence submitted in *Al Hassan* and in the related case of *Al Mahdi* demonstrate potential uses of open-source evidence that would not qualify as establishing the guilt of the accused. Specifically, the prosecution in *Al Mahdi* produced a geolocation report that established the precise location of certain heritage sites that Al Mahdi had destroyed. In that case, the defense agreed to admit the report, so the chamber never rendered a decision on its admissibility.[66] Subsequently, the OTP in *Al Hassan* submitted the same report to establish the location of certain crimes but its admissibility also has not yet received a formal determination.[67] While admissibility is not yet certain, these cases demonstrate the potential use of open-source information for establishing facts such as whether an incident occurred within the territory of a party to the Rome Statute or whether a video was actually recorded in the location it purports to show. This latter use was relevant in the *Gbagbo* case as, later in the trial, it was determined that a video the prosecution had submitted, though accompanied by witness testimony of someone who claimed to know its origin, was filmed in Kenya years earlier, not Cote D'Ivoire during the relevant period.[68]

The ICC's approach to open-source intelligence exacerbates rather than alleviates the concerns of critics regarding its evidentiary standards. By allowing submission while stating that evidence is insufficient for certain purposes, the court fails to restrict the number of exhibits submitted to evidence and may encourage additional submissions to support the case. Indeed, the adjournment of *Gbagbo* amounted to a statement that the OTP should come back with more evidence, which it did. Moreover, deferring judgment of the admissibility and

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65. *Id.* ¶ 4.

66. Rebecca J. Hamilton, *User-Generated Evidence*, 57 COLUM. J. TRANSNAT'L L. 1, 6 n.14 (2018).

67. *See also* Alexa Koenig, Emma Irving, Yvonne McDermott & Daragh Murray, *New Technologies and the Investigation of International Crimes,* 19 J. INT'L CRIM. JUST. 1, 3 (2021).

68. Prosecutor v. Gbagbo, ICC–02/11–01/15, Transcript of Trial Hearing,9:39–10:13 (Feb. 7, 2017).

weight of evidence to the end of trial in order to make a holistic assessment continues to entrench concerns that judges overestimate their ability to resist the prejudicial effects of evidence with questionable probative value. A regime which analyzes the authenticity and reliability of a piece of evidence before allowing its submission and then separately analyzes the weight of admitted evidence must be alert to the risk of overwhelming the system with large volumes of low-quality evidence.

C. *The Benefits of Open-source and User-generated Evidence*

The reality of atrocity crimes occurring within the context of ongoing armed conflict has previously forced investigators to make difficult trade-offs between ensuring their personal safety and collecting the highest quality evidence possible. Open-source and user-generated evidence brings advantages over traditional evidence that can improve the availability and quality of evidence, in addition to the safety of investigators and witnesses.

Investigators frequently do not reach the site of an atrocity crime for months after the crimes have been committed, risking degradation or destruction of evidence.[69] To compensate for this time gap, the OTP has in the past employed intermediaries, persons not affiliated with the Court but who are already present in the region, to seek out witnesses and collect evidence. This strategy resulted in witnesses later recanting or refusing to testify, stating that they were pressured or intimidated by the intermediaries into giving testimony.[70] User-generated evidence promises better information on all fronts: it can be collected during or immediately after an event; it circumvents the necessity of employing intermediaries; and it cannot be recanted or changed as a result of external pressures. Open-source and user-generated evidence carries additional benefits over traditional evidence in that its metadata can provide internal indicia of authenticity, whereas traditional evidence may require collection of additional evidence to corroborate it. If external corroboration of the evidence's authenticity is needed, open-source

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69. Hamilton, *supra* note 66, at 4.

70. Prosecutor v. Lubanga, ICC-01/04-01/06, Judgment, ¶ 178 (Mar. 14, 2012), https://www.icc-cpi.int/iccdocs/doc/docl379838.pdfCourtRecords/CR2012_03942. pdf; Hamilton, *supra* note 67, at 15.

investigation methods allow the verification process to occur immediately. Open-source and user-generated evidence allows collection of much greater quantities of evidence, which can provide more perspectives on the same event and corroborate existing evidence. These methods also better distribute control of the investigative process. Where outside investigators have traditionally controlled what evidence is collected and whose voices are heard, user-generated evidence returns some of that power to the impacted population and helps counter investigative bias.[71] Finally, the relatively low cost associated with collecting open-source evidence can help narrow the resource gap between the prosecution and defense.[72]

By allowing remote collection, open-source evidence and user-generated evidence submitted to investigators can protect investigators in two ways: first, they can diminish the need to visit sites of active conflict and second, they can prevent the identity of investigators from becoming public, mitigating the risk that they become targets of violence. Similarly, this form of evidence can protect victims and witnesses who may submit more evidence without the risk of being seen speaking to investigators and, potentially, without needing to testify publicly. The fact that evidence is submitted voluntarily rather than solicited by investigators also ensures that victims and witnesses who do not wish to participate in the judicial process are not retraumatized by contacts from investigators or the pressure to testify. However, while evidence collected through open-source and user-generated methods may provide some protection, security risks to witnesses cannot be eliminated entirely, as they may be observed recording or have their identities discovered through context or hacking.

D. *Concerns Surrounding Open-Source and User-generated Evidence*

As user-generated and open-source technology have taken on a greater role in international criminal justice, concerns have been voiced regarding its impact both in and out of the court. Four of the most commonly voiced concerns are

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71. Hamilton, *supra* note 66, at 5.

72. *See generally* Wayne Jordash QC & Matthew R. Crowe, *supra* note 32 (discussing the disparity in resources available to prosecution and defense in international criminal cases).

(1) overproduction of evidence, echoing pre-existing concerns regarding the evidentiary standards of international criminal courts; (2) authenticity and reliability of user-generated and open-source evidence; (3) witness safety; and (4) preservation of digital evidence.

1. *Overproduction of evidence*

The ability to collect large quantities of evidence risks overburdening courts and third-party investigators. While the risks for courts have been well identified, the growth in social media and in the field of open-source investigation risks further exacerbating overproduction. Moreover, third parties who open themselves to receiving closed-source user-generated evidence potentially put themselves in the position of processing enormous quantities of data without the resources to do so responsibly. One such app, Eyewitness to Atrocities, has a team of attorneys to review user-submitted evidence,[73] but the risks of overwhelming that team, or even trusting that team's discretion must not be overlooked. Alternatives to manual review, particularly the use of algorithms, pose similar concerns as content-moderation algorithms used by social media platforms have struggled to accurately sort content.[74]

2. *Authenticity and Reliability*

Authenticity and reliability are distinct but related concepts that are both essential for determining the probative value of digital evidence.[75] Authenticity refers to the unaltered nature of the evidence—in other words whether it has been tampered with or edited since its creation. Reliability, on the other hand, asks whether a piece of evidence is what it claims to be.[76] In the current conflict in Ukraine, widely-circulated digital content has been debunked on both grounds. For example, a video

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73. Eyewitness to Atrocities, *FAQs "What will Eyewitness do with the Footage?"*, https://www.eyewitness.global/FAQS

74. *See infra,* "Preservation of Digital Evidence."

75. *See* Salzburg Workshop on Digital Investigations, *An Overview of the Use of Digital Evidence in International Criminal Courts,* U. Cal. Berkeley, Hum. Rts. Ctr., 4 (Oct. 2013).

76. *Id.*

was circulated by Russian media[77] and the Russian Ministry of Foreign Affairs[78] in March 2023 which claimed to show Ukrainian Armed Forces harassing a Russian-speaking civilian. Bellingcat[79] investigated the video and found it to be unedited (*i.e.*, authentic), but geolocation showed it was recorded deep in territory that has been controlled by Russian forces since 2014 and where the Ukrainian Armed Forces have no presence, and was therefore likely staged (*i.e.*, unreliable).[80] Another video, circulated shortly before the full-scale invasion in February 2022, purported to show an attack by saboteurs on chlorine facilities but was found to be inauthentic when metadata from the video revealed that it had been overlaid with audio of gunshots and explosions pulled from a YouTube video of a Finnish firing range posted in 2010.[81]

Authenticity and reliability are concerns with any evidence and can be established using internal or external corroboration.[82] Internal corroboration can refer to metadata such as timestamps and geolocation data, while external corroboration can refer to the testimony of the individual who captured the evidence, witnesses present for the recorded events, or other contemporaneous evidence. When accompanied by corroborating witness accounts, the ICC has allowed the submission of audio recordings even when their authenticity was contested by the defense, emphasizing that it is not required to rule separately on the authenticity of evidence, but rather takes such factors into account when assessing its overall weight.[83] International

77. Izvestiya, «*Свинья, мразота»: ВСУ до смерти запугали мусульманку с ребенком* (Translation: *"Pig, filth" Ukrainian Armed Forces scared a Muslim woman with her child to death)* (Apr. 2023), https://dzen.ru/video/watch/6421d5d6a3772a0a00dfd0bb?utm_referer=www.bellingcat.com.

78. MFA Russia (@mfa_russia), Twitter (Mar. 27, 2023, 1:45 PM), https://twitter.com/RussianEmbassy/status/1640321732480315398.

79. Bellingcat is a leading independent investigative collective, discussed *infra*, "Improvements to Open Source Investigations."

80. Eliot Higgins, *How Online Investigators Proved Video of Ukrainian Soldiers Harassing Woman was Staged*, Bellingcat (Mar. 29, 2023), https://www.bellingcat.com/news/2023/03/29/how-online-investigators-proved-video-of-ukrainian-soldiers-harassing-woman-was-staged/.

81. Eliot Higgins (@Eliothigginss), Twitter (Feb. 20, 2022, 6:11 AM), https://twitter.com/EliotHiggins/status/1495355366141534208.

82. Salzburg Workshop on Digital Investigations, *supra* note 75, at 5.

83. Prosecutor v. Gombo, ICC-01/05-01/08, Decision on the Prosecution's Application for Admission of Materials into Evidence Pursuant to Article 64(9) of the Rome Statute, ¶ 9 (Oct. 8, 2012).

tribunals have generally preferred external corroboration,[84] but with recent technological advances, as demonstrated by the debunking of the videos above, internal indicators may be considered more important.

Although verification technology has advanced, concerns continue regarding the dramatic evolution of technology for producing inauthentic digital material, particularly "deepfake" technology.[85] Such technology has become increasingly accessible to the general public, less expensive, and more believable in recent years, raising concerns about the risk it poses to judicial processes.[86] Secure apps for submitting user-generated evidence can reduce risk by adding additional internal indicia of authenticity, but the risk remains for evidence collected from open sources. As technology to detect deepfakes attempts to keep pace with technology used to avoid detection, it is possible that verification will always remain a step behind.[87] Moreover, the approach that the court should take in such a "digital arms race" between technologies remains uncertain—it is doubtful that the ICC could develop internal mechanisms that would sufficiently keep pace with technology to counter fraudulent material, but outsourcing such an important function to third parties raises familiar concerns of accountability and reliability.[88] Failing to institute a centralized mechanism to verify evidence submitted by both parties could also result in "dueling experts,"[89] or systemic bias in favor of the OTP, which is more likely to have connections with the NGOs or State intelligence agencies capable of undertaking this work. The OTP appears to have recently turned towards a model more reliant on

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84. *Id.* (citing Prosecutor v. Karemera et al., Case No. ICTR-98-44-T, Judgment, ¶¶ 169-173, 205 (Int'l Crim. Trib. for Rwanda Feb. 2, 2012) in which video evidence was corroborated by a contemporaneous radio broadcast).

85. *See generally* Alexa Koenig, *"Half the Truth Is Often a Great Lie": Deep Fakes, Open Source Information, and International Criminal Law*, Symposium on Non-State Actors and New Technologies in Atrocity Prevention, AJIL Unbound (2019); Bobby Chesney & Danielle Citron, *Deep Fakes: A Looming Challenge for Privacy, Democracy, and National Security*, 107 Cal. L. Rev. 1753 (2019).

86. Chesney and Citron, *Deep Fakes* (2019).

87. *Id.* at 1787.

88. Rebecca J. Hamilton, *New Media Evidence across International Courts and Tribunals*, *in* Beyond Fragmentation: Cross-Fertilization, Cooperation and Competition among International Courts and Tribunals (Chiara Giorgetti & Mark Pollack eds., 2022).

89. *Id.*

outsourcing. While the 2016–2018 OTP Strategic Plan noted the creation of an internal cyber-unit and technology advisory board, and reported that it had begun training investigators in conducting open-source investigations,[90] the 2019–2021 strategic plan acknowledges:

> Science and technology remain very important aspects to the work of the Office. Both the Al Mahdi and the Al-Werfalli cases have shown how online investigations combined with the right forensic approach can help to prove cases . . . The world of science and forensics covers, however, such a vast terrain, and evolves at such a high pace that the Office cannot master this on its own . . . .

The report then cites a growing network of technological partners who are assisting in this work.[91] While deepfakes remain a looming threat, and false allegations that credible content is fake already circulate,[92] early awareness will help confront the issue as it evolves.

3. *Witness Safety*

While witness safety is a concern in any criminal trial, the use of open-source evidence raises concerns about the distance created between witnesses and the court, which is traditionally responsible for the safety of witnesses. This issue has been raised with regard to third-party investigations generally and the use of intermediaries to communicate with witnesses specifically.[93] While the premise of open-source information is that it has been made publicly available and is thus "fair game" for use as evidence, users may not understand the risks they face if their content is used in an international criminal tribunal.

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90. Int'l Crim. Ct., The Office of the Prosecutor, *Strategic Plan 2016-2018* (Nov. 14, 2015).

91. Int'l Crim. Ct., The Office of the Prosecutor, *Strategic Plan 2019-2021* (July 17, 2019).

92. *See, e.g.*, *Response from the Russian Ministry of Foreign Affairs to Bellingcat Regarding Fakery Allegations*, Bellingcat (Apr. 14, 2016), https://www.bellingcat.com/resources/articles/2016/04/14/response-from-the-russian-ministry-of-foreign-affairs-to-bellingcat-regarding-fakery-allegations/; *see also* Guy Faulconbridge, *Kremlin says Bucha is 'monstrous forgery' aimed at smearing Russia*, Reuters (Apr. 5, 2022), https://www.reuters.com/world/europe/putin-ally-says-bucha-killings-are-fake-propaganda-2022-04-05/.

93. Hamilton, *supra* note 66, at 34.

This potentially poses a violation of the principle of informed consent required when collecting information from witnesses and victims, requiring that they understand and accept the risks they may face by giving evidence.[94] Even when informed consent is obtained, as in the case of user-generated information sent directly to investigators, the sheer number of witnesses able to submit evidence to the court poses additional problems for traditional models of witness protection and could pressure the court into applying additional scrutiny before granting witness protection measures.

One of the lowest cost solutions for witness protection would be anonymizing user-generated evidence. In the past, international criminal tribunals have preferred live testimony accompanying documentary evidence or at least assurances as to the provenance of the evidence, demonstrated by the slow and contentious path to adopting ICTY and ICTR Rules 92*bis* and *92ter*, allowing submission of written testimony.[95] New technologies in the collection of user-generated evidence can record anonymous digital identifiers that could serve the same purpose as live testimony without endangering witnesses.[96] With this technology, some have suggested that courts could treat the apps themselves as "witnesses" capable of independently affirming the authenticity of content gathered through them.[97] Such a framing could be transformative in improving the admissibility of user-generated evidence without putting witnesses at risk. It is worth remembering, however, that maintaining anonymity of digital sources in the court does not necessarily guarantee the anonymity of the witness generally. Depending on the nature of the evidence offered, the accused and others in power may nonetheless be able to identify who would be able to capture the relevant evidence. Thus, digital anonymization techniques must supplement, not replace, existing witness protection frameworks.

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94. *See* Int'l Crim. Ct & Eurojust., *Documenting International Crimes and Human Rights Violations for Accountability Purposes: Guidelines for Civil Society Organizations*, 8 (2022).

95. Int'l Crim. Trib. for the Former Yugoslavia, Rules of Procedure and Evidence, Rules 92*bis* and 92*ter*.

96. *See infra* "Development of Platforms for User-generated Evidence Collection".

97. Hamilton, *supra* note 66, at 46–47 (quoting Wendy Betts, Program Director, EyeWitness to Atrocities).

4. *Preservation of Digital Evidence*

While open-source digital evidence carries a lower risk of destruction due to conflict, preservation can nevertheless be difficult in light of the content moderation policies of the platforms on which such evidence is often posted. Social media platforms like Facebook, Twitter, and Instagram actively work to remove content showing violent acts, hate speech, or nudity, which often encompasses evidence of atrocity crimes.[98] The deletion of what could be crucial evidence has only accelerated with the use of algorithms and machine learning for moderation purposes. Facebook states that it is often able to remove content relating to terrorism and organized hate before anyone sees it, and that between October and December 2022, 98.5% of terror-related content was removed before it was reported by users.[99] That the algorithm Facebook uses may be overly inclusive is indicated by a dramatic spike in appeals of content removal in 2022, from 38,100 appeals to terror-related content removals between January and March, to 531,000 appeals between April and June, coinciding with Russia's invasion of Ukraine. These numbers dropped slightly to 332,000 appeals between July and September and then 374,000 between October and December but remained ten times higher than their pre-invasion levels.[100] The algorithm may even be overly-inclusive by Meta's own standards, since 86,300 posts were restored (either after appeal or after Facebook's own review) between April and June, spiking to 4.06 million between July and September 2022.[101] Given that most of the restored content was restored without appeal,[102] it is also likely that Meta is privately adjusting its algorithm to account for the influx of war-related content.

Attempts to work with technology companies to establish policies whereby violent content would be preserved for

98. *See* META, *Policies: Violence and Graphic Content*, https://transparency.fb.com/policies/community-standards/violent-graphic-content/ (last visited Sept. 16, 2023); TWITTER, *Sensitive Media Policy*, https://help.twitter.com/en/rules-and-policies/media-policy (last visited Sept. 16, 2023).

99. FACEBOOK, *Community Standards Enforcement Report, 4th Quarter 2022*, https://transparency.fb.com/data/community-standards-enforcement/dangerous-organizations/facebook/#restored-content (last visited May 28, 2024).

100. *Id.*

101. *Id.*

102. *Id.*

evidentiary purposes have had mixed results.[103] While these companies do frequently retain content removed from their platforms for months or years,[104] civil society investigators and even international courts lack the ability to obtain the information by subpoena, warrant, or court order, leaving production largely to voluntary cooperation. There has been some success with this method, for example by the U.N. Factfinding mission for Myanmar, which recommended that social media platforms "retain indefinitely copies of material removed for use by judicial bodies and other credible accountability mechanisms addressing serious human rights violations committed in Myanmar in line with international human rights norms and standards, including where such violations amounted to crimes under international law."[105] In response to this request, Facebook has voluntarily provided the Independent Investigative Mechanism for Myanmar with 1.5 million pages of content.[106] However, requests from NGOs and foreign States have been less successful. Platforms often cite the view that it would be illegal for them to share information, based on the Stored Communications Act, 18 U.S.C. § 2701 which forbids unauthorized access to private communications, including those stored on their platforms.[107] In contrast to its cooperation with the U.N. factfinding mission, Facebook successfully litigated[108] a request from the Republic of the Gambia to turn over communications by Burmese officials on "nominally private" but widely-followed pages and in private messages that would support The Gambia's case before the International Court of Justice (ICJ) on the *Application of the Convention on the*

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103. *See generally* HUMAN RIGHTS WATCH, *"Video Unavailable": Social Media Platforms Remove Evidence of War Crimes*, (Sept. 10, 2020).

104. *Id.* at 2–3.

105. Human Rights Council, Compilation of all recommendations made by the Independent International Fact-Finding Mission on Myanmar, to the Gov't of Myanmar, armed organizations, the U.N. Security Council, Member States, U.N. agencies, the business community and others, ¶ 142, A/HRC/42/CRP.6 (Sept. 16, 2019).

106. *Id.*; *see also, Q & A with Facebook on Myanmar*, OPINIO JURIS (Sept. 20, 2020), http://opiniojuris.org/2020/09/20/q-a-with-facebook-on-myanmar/.

107. *Id.*

108. Republic of Gam. v. Meta Platforms, Inc., 588 F. Supp. 3d 1, 1 (D.D.C. 2022).

Prevention and Punishment of the Crime of Genocide.[109] The D.C. District Court found that these communications, even if deleted by the platform itself and not by the user, were covered by the Stored Communications Act,[110] and could not be compelled.[111] This discrepancy in willingness to produce information may be indicative of a general preference for information-sharing with international organizations rather than individual States.

Organizations like Human Rights Watch have suggested a model mirroring the U.S. policy for managing potential evidence of child sexual exploitation. Specifically, U.S.-registered companies are required to take down the content but also preserve it and share a copy of the content along with all relevant metadata with the National Center for Missing and Exploited Children.[112] This suggestion was echoed in May 2022, when four members of the U.S. House of Representatives asked the CEOs of TikTok, Twitter, and Meta to archive content that could be used as evidence of Russian war crimes.[113] However, as of May 2023, there has been no public response to this request. Cooperation with platforms is helpful not just for obtaining content that has been deleted, but also for collecting additional metadata on the users who shared content publicly. While such data falls outside the scope of "open-source" information, it has been described as "vital" to the work of internationally mandated investigative teams,[114] and could improve the admissibility of open-source information before international criminal tribunals.[115]

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109. *Application of the Convention on the Prevention and Punishment of the Crime of Genocide* (The Gambia v. Myanmar), Provisional Measure, 2019 I.C.J. 178 (Nov. 11).

110. 18 U.S.C. § 2701.

111. Republic of Gam. v. Meta Platforms, Inc., 588 F. Supp. 3d 1 (D.D.C. 2022).

112. Human Rights Watch, *supra* note 103.

113. Rami Ayyub & Paul Grant, *U.S. lawmakers ask tech companies to archive evidence of potential Russian war crimes*, Reuters (May 12, 2022), https://www.reuters.com/technology/us-lawmakers-ask-tech-companies-archive-evidence-potential-russian-war-crimes-2022-05-12/.

114. Human Rights Watch, *supra* note 103, at 30.

115. For more analysis of technological options for data preservation, *see* UC Berkeley Human Rights Center, *Digital Lockers: Preserving Social Media Evidence of Atrocity Crimes* (2021).

III. The Prospects for Open-source and User-generated Evidence in Ukraine

Russia's full-scale invasion of Ukraine is likely to deliver the test of open-source and user-generated evidence that the international community expected from *al-Werfalli*, and potentially with better results. Since the time that the videos at issue in *al-Werfalli* were recorded, technology has improved, the open-source investigation landscape has expanded, and its key players have developed their methods to address the concerns of international tribunals. Ukraine specifically is well-positioned to produce and collect high-quality user-generated evidence. Roughly 76% of Ukrainians used a smartphone in 2022,[116] enabling quick capture and transmission of potential evidence, and since The Russian Federation's initial invasion of Ukraine in 2014, a robust network of civil society organizations has developed and stands ready to both engage the local community regarding best practices for producing user-generated evidence, and to collect open-source information.[117] This task is rendered easier by the fact that many of the violations seen in Ukraine follow a similar pattern to Russian actions in Syria and other recent conflicts, well documented by NGOs like Atlantic Council's Digital Forensic Research Lab.[118] Having that base of information makes it easier to determine linkage information like chain of command and military unit identification, which should facilitate more efficient prosecution.[119] Improved cooperation between States and the OTP will also facilitate sharing of information and resources, improving handling and preservation of evidence. However, the present conflict also presents new issues that the open-source investigation community has not yet encountered: first, the need for exigent record-keeping and tracking in the case of abducted and deported children;

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116. *Forecast smartphone user penetration rate in Ukraine from 2018 to 2027*, Statista, https://www.statista.com/statistics/1134646/predicted-smartphone-user-penetration-rate-in-ukraine/ (last visited May 28, 2024).

117. Diplomatic Service of the European Union, *E.U. Roadmap for Engagement with Civil Society in Ukraine 2018-2020*, (Mar. 20, 2019), https://www.eeas.europa.eu/sites/default/files/roadmap_for_cs.pdf

118. Justin Hendrix, *Ukraine May Mark a Turning Point in Documenting War Crimes*, Just Security (Mar. 28, 2022), https://www.justsecurity.org/80871/ukraine-may-mark-a-turning-point-in-documenting-war-crimes/.

119. *Id.*

and second, heightened risk of a cyberattack, with subsequent destruction of evidence, by the Russian Federation.

A. *Improvements to Open-source Investigations*

In response to the use and criticism of open-source intelligence in the past decade, open-source investigators have developed technology and methodology to increase the likelihood that their information will be accepted in court. This was aided by the publication of the Berkeley Protocol on Digital Open Source Investigations in 2020, a collaboration between the Office of the High Commissioner for Human Rights and Human Rights Center UC Berkeley School of Law. The Protocol was translated into Ukrainian in 2022,[120] and the former Prosecutor General of Ukraine has indicated that the protocol is part of the office's framework for collecting evidence.[121] Lindsay Freeman, Director of Technology, Law and Policy at the Human Rights Center UC Berkeley School of Law and one of the authors of the Berkeley Protocol, noted the effect the protocol has had in standardizing investigation methodologies for open-source investigators, which in turn has enabled smoother onboarding of new researchers and scaling to meet emerging challenges: "I've seen huge improvement in how people are able to jump in and start doing this work and how groups are already set up to do the intake and to have a methodology for the tagging."[122]

A prominent example of open-source investigators addressing potential challenges to evidence comes from Bellingcat, an open-source research collective whose past work has involved working with the Joint Investigative Team (JIT) established to investigate the 2014 downing of Malaysian Airlines Flight 17 over Eastern Ukraine. The results of that investigation are now before the European Court of Human Rights.[123] In 2022, Bellingcat launched its "Justice & Accountability" unit, in which

120. U. Cal. Berkeley Hum. Rts. Ctr., *Berkeley Protocol, Ukrainian Translation* (Mar. 2022) https://www.law.berkeley.edu/wp-content/uploads/2022/03/Berkeley-Protocol-Ukrainian.pdf.

121. Iryna Venediktovna (@VenediktovaIV), Twitter (Mar. 9, 2022,11:32 AM), https://twitter.com/VenediktovaIV/status/1501596904009912320.

122. Hendrix, *supra* note 118.

123. Case of Ukraine and the Netherlands v. Russia, Applications nos. 8019/16, 43800/14 & 28525/20, Eur. Ct. H.R., ¶ 473 (Jan. 25, 2023) (accepting Bellingcat's evidence at the jurisdictional phase).

it has partnered with Global Legal Action Network to develop a methodology for open-source investigation explicitly designed to meet judicial admissibility standards.[124] This unit differs from Bellingcat's other investigative units in that its work is not made publicly available, but is rather provided exclusively to actors in domestic and international courts.[125] The Justice and Accountability unit has published a guide of its methodology, which explicitly addresses the admissibility standards of the Rome Statute and the recommendations of the Berkeley Protocol.[126] In response to cybersecurity concerns, Bellingcat has also partnered with Mnemonic, an organization that specializes in archival and secure storage of evidence of human rights and humanitarian law abuses.[127]

Bellingcat is far from alone in the open-source investigation ecosystem. Amnesty International Citizen Evidence Lab, for example, has launched two open-source-focused projects. In the first, it has partnered with six universities to train students on verifying user-generated evidence collected from open sources, in the course of which it has published methodological guides for verification and case studies of its processes.[128] The second project involves a "decoder" network which processes large quantities of open-source information like satellite imagery and social media posts to generate usable data sets.[129] The Center for Information Resilience's Eyes on Russia project similarly works to verify assorted open-source information, including user-generated content on social media and satellite footage, which it maps and makes available to the public.[130] Assistive technology, though not intended specifically for use

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124. *What is Bellingcat's Justice and Accountability Unit?*, BELLINGCAT (Dec. 15, 2022), https://www.bellingcat.com/what-is-bellingcats-ja-unit-december-2022/.

125. *Id.*

126. Bellingcat & Global Legal Action Network, Justice and Accountability Unit, *Methodology for Online Open Source Investigations into Incidents Taking Place in Ukraine Since 24 February 2022*, Dec. 14, 2022.

127. MNEMONIC, *About us*, https://mnemonic.org/en/about (last visited May 6, 2023).

128. AMNESTY INT'L, *Citizen Evidence Lab: Digital Verification*, https://citizenevidence.org/category/method/digital-verification/ (last visited May 6, 2023).

129. AMNESTY INT'L, *About Amnesty International's Citizen Evidence Lab*, https://citizenevidence.org/about-us/ (last visited May 6, 2023).

130. Center for Information Resilience, *Eyes on Russia Map*, [https://eyesonrussia.org/] (last visited Nov. 18, 2023).

in this field, has also made a significant contribution towards making user-generated evidence more easily verifiable. Of note is the tool SunCalc, which allows researchers to determine the sun's movement using interactive maps, sunrise and sunset times, and shadow length.[131] Applying this technology to digital content enables investigators to verify the location of photos and discard false narratives advanced by the Russian Federation regarding the movement of its troops.[132] Another emerging technology developed by Stanford's Starling Lab uploads hash-values (digital identifiers) of open-source digital evidence to the blockchain, creating a permanent record of what the photos or video looked like at that moment in time.[133] While this method does not verify the content, it provides a snapshot against which content can later be verified for change.[134] These organizations and technologies exert varying influence in the processing of open-source digital evidence, but together they create an eco-system that allows collection and preservation of higher-quality evidence than seen in the past.

Researchers have mixed opinions on the development of the open-source investigation field that is now being put to the test in Ukraine. Steve Kostas, a lawyer with the Open Society Justice Initiative, an impact litigation initiative, regards early attention to linkage evidence as indicative of the progress that open-source investigators have made in better directing their research towards a judicial context: "already at this very early stage, groups are thinking about linkage evidence . . . chain of command questions, the unit location, direction of firing . . . information that in the Syrian context, nobody looked at for years after the events."[135] On the other hand, Professor Rebecca Hamilton reiterates the challenges of coordination and risk of

131. SunCalc, suncalc.org (last visited Nov. 18, 2023).

132. Lila Carrée, *The Role Of Technology In The Exposition Of War Crimes In Ukraine: How The Use Of Cutting-Edge Technologies And Open-Sources Investigations Can Expose Human Rights Violations*, The London School of Econ. & Pol. Sci. (Feb. 2, 2023), https://blogs.lse.ac.uk/humanrights/2023/02/02/the-role-of-technology-in-the-exposition-of-war-crimes-in-ukraine-how-the-use-of-cutting-edge-technologies-and-open-sources-investigations-can-expose-human-rights-violations/.

133. Ben Schreckinger, *In Ukraine, war crimes go on-chain*, Politico (Jan. 17, 2023), https://www.politico.com/newsletters/digital-future-daily/2023/01/17/ukraine-war-crimes-blockchain-00078170.

134. *Id.*

135. Hendrix, *supra* note 118.

overburdening international criminal tribunals with overproduction of low-quality evidence: "We are witnessing a massive over- collection of material without the systems in place to coordinate how that material is actually going to be used . . . documentation is not an end in itself."[136] For now, collection and processing continue at speed, while the ultimate outcome of this acceleration may not be seen in court for years.

B. *Development of Platforms for Collection of User-generated Evidence*

In the field of user-generated evidence, there has been dramatic technological development in designing systems to maximize the utility of content that individuals capture. The International Bar Association's EyeWitness to Atrocities app[137] seeks to guarantee user-generated evidence's authenticity, while also addressing concerns over witness safety and cybersecurity. The app allows users to record footage directly in the app to ensure that it is unedited and permits them to add notes to accompany their photos and videos. In theory, these notes could act as testimonial evidence, potentially capable of corroborating the documentary evidence of their footage in much the same way as parties have previously submitted witness testimony attesting to having captured relevant photographs and video. However, if this is considered written witness testimony under rule 68 of the ICC Rules of Procedure and Evidence, such testimony could only speak to an element other than the acts of the accused, unless the witness is in some way available for questioning.[138] The app records unique hash-values derived from pixel count to act as a digital fingerprint and guard against future tampering, in addition to metadata like location and time.[139] These elements will assist in establishing authenticity (that the content has not been altered) and reliability (that the content

136. *Id.*

137. Developed with LexisNexis, Debevoise & Plimpton, LinkLaters & Hogan Lovells.

138. *See, e.g.*, Arctic Sunrise (Neth. v. Russ.), PCA Case No. 2014-02, Witness Statement of Philip Edward Ball, NWS-04, ¶ 3 (Aug. 26, 2014).

139. *What Happens When You Upload Footage to EyeWitness to Atrocities?*, EYEWITNESS, https://www.eyewitness.global/documents/What-happens-when-you-upload-footage.pdf (last visited May 6, 2023).

shows what it purports to show) in court.[140] Once the user submits content, it is securely stored and reviewed by a team of lawyers who may pass it on to relevant parties. The app accounts for user safety by adding a password to access the content on the user's device, which will display the user's regular camera roll, rather than uploaded evidence, if entered incorrectly. It also features an emergency uninstall button on each screen of the app.[141] As of May 2023, the International Bar Association (IBA) has submitted thirty-seven dossiers to investigative and accountability mechanisms including the ICC, European war crimes units, domestic courts, and U.N. investigative bodies, including the U.N. Commission of Inquiry on Ukraine.[142] Evidence provided by EyeWitness has already been used to secure convictions for crimes against humanity in two cases before the DRC military tribunal.[143] Ukraine also cited photographs from EyeWitness, in its institution of proceedings at the ICJ regarding *Terrorism Financing and Racial Discrimination in Ukraine*.[144] While the standard of proof and admission of evidence is different in the context of state responsibility as opposed to individual criminal responsibility, the use of this technology in international courts helps establish its legitimacy and develop practices for its continued use.

The Ukrainian Office of the Prosecutor has also set up its own portal to collect user-generated evidence, available online

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140. *See* Salzburg Workshop on Cyber Investigations, *supra* note 75.

141. *Full User Guide*, EYEWITNESS, https://www.eyewitness.global/documents/How-To-Info-Booklet.pdf (last visited May 6, 2023).

142. *eyeWitness submitted evidence of human rights violations committed in Chernihiv to U.N. Commission of Inquiry*, EYEWITNESS (Oct. 20, 2022), https://www.eyewitness.global/eyewitness-submitted-evidence-of-human-rights-violations-committed-in-Chernihiv-to-UN.

143. Crimes committed by Gilbert Ndayambaje (alias Rafiki Castro) and Evariste Nizeimana (alias Kizito). *See Bringing historical crimes to justice in the Democratic Republic of the Congo (DRC)*, EYEWITNESS (Sept. 25, 2018), https://www.eyewitness.global/Bringing-historical-crimes-to-a-domestic-court-in-the-DRC.

144. Application of the Int'l Convention for the Suppression of the Financing of Terrorism and the Int'l Convention on the Elimination of All Forms of Racial Discrimination (Ukraine v. Russian Federation), Provisional Measure, 2017 I.C.J. 38, ¶ 53 (Jan. 16). In this part of the case, Ukraine argued that Russia violated Article 18 of the International Convention for the Suppression of the Financing of Terrorism by providing weapons to Russian proxies in Eastern Ukraine.

and as an app.[145] Little information is available regarding the security and verification features that the app provides, and the online portal appears to be a basic upload form, but the Prosecutor General's office has received over 17,000 submissions through these portals as of May 2023.[146] In May 2023, the ICC OTP also announced a new submission portal for user-generated evidence, which it promotes as "allowing the Office to handle larger information volumes utilising Artificial Intelligence and Machine Learning to offer greater insights into the information received, significantly reducing the time required to review and act on it. The platform maintains compliance with international evidence handling standards by using a digital chain of custody trail that collects and preserves information."[147] This is part of a larger initiative, Project Harmony, which promises a more technologically advanced evidence management paradigm.[148] It remains to be seen what the effect of "competing" evidence submission apps will be, and whether courts will treat evidence differently based on what technology is used to collect it.

C. *Cooperation between the OTP, States, and NGOs*

While fact-finding in Ukraine, as in prior conflicts, is conducted by a variety of actors, cooperation between actors, including the OTP, has improved. By improving collaboration at the investigative stage, the OTP may be able to avoid the criticisms that have followed from reliance on information from prior third-party investigators. On March 25, 2022, the European Union Agency for Criminal Justice Cooperation

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145. Available at warcrimes.gov.ua and RussianWarCrimes App on Google Play. Attempts to access the website found that it was repeatedly offline throughout April and May, 2023, potentially the result of DDOS attacks or overburdening by users.

146. Office of the Prosecutor Gen. of Ukraine, *Crimes Committed During the Full-scale Invasion of the RF*, https://www.gp.gov.ua/ (last visited May 6, 2023).

147. *ICC Prosecutor Karim A.A. Khan KC announces launch of advanced evidence submission platform: OTPLink*, Int'l Crim. Ct. (May 24, 2023), https://www.icc-cpi.int/news/icc-prosecutor-karim-aa-khan-kc-announces-launch-advanced-evidence-submission-platform-otplink.

148. *ICC Office of the Prosecutor to launch modern evidence management platform*, YouTube (Feb. 8, 2023), https://www.youtube.com/watch?v=rqt63ghnJSE&t=20s&ab_channel=IntlCriminalCourt.

(Eurojust) established a Joint Investigative Team (JIT)—an investigative mechanism enabled by the 2000 E.U. Mutual Assistance Convention for prosecution of cross-border crime in the E.U. by a coalition of E.U. States[149]—with signatures from Lithuania, Poland, and Ukraine.[150] The JIT for Ukraine now incorporates five States[151] and, crucially, the ICC-OTP. Eurojust provides organizational support, including a platform for evidence storage, funding, and facilitation of meetings on such issues as what jurisdiction should prosecute which crimes.[152] Ukraine's participation marks the first instance of a non-E.U. state joining a Eurojust-backed JIT. It is also the first time that the OTP has joined a Eurojust JIT, although Eurojust and the OTP signed a letter of understanding on cooperation in 2007.[153] The JIT has made clear that its role will not be limited to collecting information but will also support domestic prosecutions in line with the principle of complementarity, *i.e.*, that States have the primary authority and competence to investigate and prosecute international crimes. Notably, the agreement between the JIT and OTP is not limited to investigations of crimes over which the ICC has jurisdiction.[154] On March 3, 2023, the United States signed a memorandum of understanding with all seven JIT partner states to facilitate closer coordination between the investigations and prosecutions carried out

149. *Convention Established by the Council in Accordance with Article 34 of the Treaty on European Union, on Mutual Assistance in Criminal Matters Between the Member States of the European Union*, 197 Off. J. Eur. Cmtys., Art. 13 (Dec. 7, 2000).

150. *Eurojust Supports JIT into Alleged Core International Crimes in Ukraine*, Eurojust (Mar. 28, 2022), https://www.eurojust.europa.eu/joint-investigation-team-alleged-crimes-committed-ukraine.

151. Estonia, Latvia and Slovakia joined the JIT on May 30, 2022 and Romania joined on October 13, 2022.

152. Tan & Yang, *supra* note 33

153. Letter of Understanding on Co-operation between the Office of the Prosecutor of the International Criminal Court and Eurojust, Int'l Crim. Ct. & Eurojust (Apr. 10, 2007). Article 54(3)(d) of the Rome Statute allows the OTP to reach "arrangements or agreements" to facilitate the cooperation of a State. The ICC-OTP also signed a cooperation agreement with Interpol in 2004 to facilitate information and resource sharing. ICC-OTP, Cooperation Agreement between the Office of the Prosecutor and Interpol, ICC-OTP-20041222-85 (Dec. 22, 2004).

154. Int'l Crim. Ct., The Office of the Prosecutor, *Twenty-Fourth Report of the Prosecutor of the International Criminal Court to the United Nations Security Council Pursuant to Resolution 1970 (2011)*, ¶ 38 (Nov. 9, 2022).

by all national authorities concerned.[155] This broad coalition of actors carrying out investigations may be able to help avoid overdocumentation and duplication of efforts, reducing delays and preventing unnecessary retraumatization of witnesses by repeated interviews or requests for interviews by different actors.[156] Moreover, standardization of procedures, utilization of common templates, and adoption of a shared language into which evidence will be translated will promote efficiency.[157]

Extension of Eurojust's mandate in June 2022 to include "preserving, analysing and storing evidence related to those crimes and related criminal offences and enabling the exchange of such evidence with, or otherwise making it directly available to, competent national authorities and international judicial authorities, in particular the International Criminal Court"[158] allowed the creation of the Core International Crimes Evidence Database (CICED), which will enable secure information storage and sharing.[159] Eurojust states the goal of CICED as not only supporting national and international investigations of individual offenses but also shedding light on patterns of systemic offenses.[160] Submissions to CICED are not limited to JIT members; all E.U. Member States and States with Liaison

155. *National Authorities of the Ukraine joint investigation team sign Memorandum of Understanding with the United States Department of Justice*, EUROJUST (Mar. 4, 2023), https://www.eurojust.europa.eu/news/national-authorities-ukraine-joint-investigation-team-sign-memorandum-understanding-usa. Separately, in June, 2022, the United States established a War Crimes Accountability Team to provide technical and operational assistance regarding criminal prosecutions, evidence collection, forensics, and relevant legal analysis in support of ongoing investigations into war crimes over which the United States may have jurisdiction, such as harms to U.S. journalists covering the war.

156. Tan & Yang, *supra* note 33, at 10. *Core International Crimes Evidence Database (CICED)*, EUROJUST (Feb. 14, 2023),https://www.eurojust.europa.eu/publication/core-international-crimes-evidence-database-ciced.

157. *Core International Crimes Evidence Database (CICED)*, EUROJUST (Feb. 14, 2023), https://www.eurojust.europa.eu/publication/core-international-crimes-evidence-database-ciced; *Second JIT Evaluation Report: Evaluations Received Between: April 2014 and October 2017*, JITs Network & Eurojust, at 19 (2018); *Third JIT Evaluation Report: Evaluations Received Between: November 2017 and November 2019*, JITS NETWORK & EUROJUST, at 13 (Mar. 2020).

158. Commission Regulation 2022/838 (EU).

159. *Core International Crimes Evidence Database (CICED)*, EUROJUST (Feb. 14, 2023), https://www.eurojust.europa.eu/publication/core-international-crimes-evidence-database-ciced.

160. *Id.*

Prosecutors at Eurojust can submit evidence.[161] Beyond storage and transfer, Eurojust notes targeted searches for evidence relating to a specific event or location as a benefit of the system, which will further the goal of organizing what is already becoming an enormous quantity of evidence.[162] The JIT is engaged in evidence collection far beyond open-source investigation, but collaboration, data security, and organization of evidence will address concerns relating to open-source and user-generated evidence.

While the JIT has many benefits, it once again raises concerns of systemic bias. Some scholars have questioned the prominent role of Ukraine in the JIT.[163] The fact that Ukraine is a member while the Russian Federation is not, combined with a lack of access to Russian-controlled territories, and added to victims' unwillingness to speak to investigators, risks the appearance of partiality and a potential systemic skew on the information collected.[164] Certain early warnings of bias—particularly that the Ukrainian Prosecutor General, in affirming that Ukrainian war crimes are also being investigated, stated that any possible prosecutions should be postponed until the post-war period;[165] the inordinately harsh sentencing and lack of transparency in the first domestic prosecutions of war crimes;[166] and the wording of the 2022 Ukrainian-ICC Cooperation law, which purports to limit cooperation to prosecution of Russians[167]—also give rise

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161. *Id.* Ten States (Albania, Georgia, Montenegro, North Macedonia, Norway, Serbia, Switzerland, Ukraine, the United Kingdom and the United States of America) currently have Liaison Prosecutors at Eurojust, which is intended to facilitate cross-border investigation and grants the States access to Eurojust operational tools and facilities. *See Liaison Prosectors*, EUROJUST, eurojust.europa.eu/states-and-partners/third-countries/liaison-prosecutors (last visited Sept. 16, 2023).

162. EUROJUST, *supra* note 157.

163. *See* Ambos, *supra* note 33; Tan & Yang, *supra* note 33.

164. *See* Tan & Yang, *supra* note 33.

165. *Transcript: World Stage: Ukraine with Ukraine Prosecutor General Iryna Venediktova*, WASH. POST (May 23, 2022) (cited in Ambos, *supra* note 33).

166. For instance, the first war crime conviction of Vadim Shishimarin, a 21-year-old Russian tank driver, resulted in a life sentence, despite him being convicted of a single civilian death and the applicable statute providing for a sentence of ten to fifteen years. *See* Ambos *supra* note 33.

167. Law 2236-IX, On amendments to the Criminal Procedure Code of Ukraine and other legislative acts of Ukraine regarding cooperation with the International Criminal Court (May 3, 2022) https://zakon.rada.gov.ua/laws/show/2236-20#Text ("This section applies exclusively to . . . persons . . . who . . .

to concerns about Ukraine's ability to investigate impartially.[168] Some have also raised concerns regarding E.U. funding of the JIT and what that will mean or signify for OTP independence.[169] While these are valid concerns, the OTP has long collaborated with States that are party to the situations they are investigating, and there is little reason to believe that the form of that collaboration will meaningfully change their relationship. Moreover, concerns that the OTP is collaborating with Ukraine but not the Russian Federation fail to account for the Russian Federation's refusal to participate in ICC proceedings.

D. *New Issues*

Beyond the previously voiced concerns, this conflict brings new challenges which user-generated and open-source evidence may help to address, and which bring new risks to its use.

1. *Exigent Record Keeping*

The first crimes for which the ICC has issued arrest warrants in the Ukraine situation concern the deportation of children from Ukraine into the Russian Federation.[170] The scale of these deportations is enormous—the Ukrainian government has collected 19,393 reports of children who had been deported to the Russian Federation by the end of April 2023, but estimates that the true number could be well over 200,000.[171] This context is crucial because evidence collection

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acted with the aim of carrying out armed aggression against Ukraine, and/or on the basis of decisions (orders, directives, etc.) of officials, military command, or public authorities of the Russian Federation . . . ") (Translated in Ambos, *supra* note 33).

168. Ambos, *supra* note 33. Ambos goes as far as to suggest that the Netherlands' and Germany's non-participation in the JIT may stem from concerns of bias.

169. *Id.*

170. Press Release, Int'l Crim. Ct., *Situation in Ukraine: ICC judges issue arrest warrants against Vladimir Vladimirovich Putin and Maria Alekseyevna Lvova-Belova*, Press Release (Mar. 17, 2023).

171. Nat'l Police of Ukraine, CHILDREN OF WAR, https://childrenofwar.gov.ua/en/ (Children of War is a platform hosted by the National Police of Ukraine, the Office of the Prosecutor General, and the National Information Bureau, which allows citizens to report deportations and other crimes

will play two roles going forward: in addition to establishing criminal guilt, it will assist in reuniting children with their families. As many of the children taken are too young to seek out their families themselves or even remember what happened to them, recording the identities and potential locations of those missing is vital for both criminal liability and mitigating harm. Observers have suggested building a DNA database for missing children that could prove useful for identifying them in the future, relying on the submissions of individuals in a manner similar to collections of user-generated digital evidence.[172] The tracking of missing children has also employed open-source investigative methods. Yale Humanitarian Research Lab (YHRL), a member of the Conflict Observatory, a project of the U.S. State Department's Bureau of Conflict and Stabilization Operations,[173] has researched deportation of children beginning in 2022. This research began with posts on Telegram, a popular secure messaging app with publicly viewable "channels," and VKontakte, Russia's largest social media platform,[174] then determined the location of potential camps based on social media posts, government announcements and publications, and news reports.[175] Information including photographs, videos, and descriptions of children from Ukraine at these locations was then cross-referenced with photographs on the camp's website or user-generated photographs on mapping sites (*e.g.*, Yandex Maps). Claims were then additionally corroborated using Very High-Resolution (VHR) satellite imagery to identify visible components, such as activity at a location

committed against Ukrainian children, as well as to seek assistance in recovering deported children. It is funded by the government of Canada) (last visited May 28, 2024). The U.S. State department estimated that 260,000 Ukrainian children had been forcibly relocated to the Russian Federation, but that number does not distinguish whether the children were accompanied or not.

172. Mike Corder, *Ukrainian groups learn about DNA use to identify war victims*, Associated Press (Apr. 6, 2023), https://apnews.com/article/ukraine-russia-war-missing-people-dna-9ef70af8df8c3ecbcb7dc7ecdf48b21d.

173. Kaveh Khoshnood et al., *Russia's Systematic Program for the Re-education and Adoption of Ukraine's Children*, Humanitarian Research Lab, Yale Sch. Pub. Health, at 4 (Feb. 14, 2023).

174. Deborah Amos, *Russia deports thousands of Ukrainian children. Investigators say that's a war crime*, NPR (Feb. 14, 2023), https://www.npr.org/2023/02/14/1156500561/russia-ukraine-children-deportation-possible-war-crime-report.

175. Khoshnood, *supra* note 173.

during a relevant period.[176] YHRL noted that determining the involvement of specific camps was made easier by the fact that many actors celebrated their involvement.[177] Indeed, the public acknowledgement of this campaign likely enabled the ICC to quickly indict Vladimir Putin, President of the Russian Federation, and Maria Lvova-Belova, the Russian Federation's Children's Rights Commissioner on related charges, although this cannot be confirmed until the arrest warrants are made public.[178] Locating the camps and tracking their activities will help with accountability, although these tools' utility for tracking down missing children appears to be limited.

Deportations are somewhat unique[179] in that they are evolving crimes. While investigating a killing, air strike, or assault entails *post hoc* evidence-gathering of an event or series of events, deportations require updates of what has happened to the child since she was deported. updated information is essential both to classify the crime based on whether the child was returned, killed, or adopted into a Russian family, and in the hopes of recovering the child. Nevertheless, the uniquely sensitive nature of crimes involving children makes open-source investigation particularly difficult. As YHRL acknowledged, many parents are more reticent to share information regarding their children's mistreatment online than they would be if they themselves were victimized[180] and while parents may post online to seek help in recovering their child, the absence of an update does not necessarily indicate that the child has not been recovered.[181] For this reason, centrally collected user-generated evidence, rather than open-source evidence remains the better option for collecting information about deportations.

2. *Heightened Risk of Cyberattacks*

Cybersecurity has been on the ICC's radar since at least 2007 when the Court developed a consolidated e-court protocol for

176. *Id.*
177. *Id.* at 22.
178. Press Release, Int'l Crim. Ct., *supra* note 170.
179. Similar challenges may arise in investigating crimes like imprisonment or other severe deprivation of physical liberty in violation of fundamental rules of international law, if the victim remains in custody.
180. Khoshnood, *supra* note 173, at 7.
181. *Id.*

the *Lubanga* case, considering security issues associated with having consolidated databases of witness information as well as the risk of "viruses" in files sent to the Court.[182] The Consolidated e-Court Protocol addressed these issues by allowing redaction of witness-identifying metadata from files, as well as a policy that the recipient of data is responsible to test for viruses while the sender should take all reasonable measures to ensure data is virus-free.[183] These approaches were subsequently incorporated into the 2011 Unified E-court Protocol.[184] Given the Russian Federation's past use of cyberattacks[185] and the increased reliance on digital evidence in the present conflict, cyber security is crucial to ensure the integrity of evidence that has been collected and to protect the identities of victims and witnesses who have contributed that evidence. Viktor Zhora, Deputy Head of the State Service for Special Communication and Information Protection of Ukraine, says his office has observed that pages publishing and collecting information about war crimes

182. *See* Prosecutor v. Dyilo, ICC-01/04-01/06, Report to Trial Chamber I on the e-court, Expert witness: Ms. Sandra Potter, ¶¶ 56–58 (Nov. 12, 2007); Prosecutor v. Dyilo, ICC-01/04-01/06-1182, Second Addendum to Report to Trial Chamber I on the e-court, Expert witness: Ms Sandra Potter, ¶¶ 8–17 (Feb. 18, 2008).

183. Prosecutor v. Dyilo, ICC-01/04-01/06-1263-Anx1 04-04-2008, Technical protocol for the provision of evidence, material witness and victims' information in electronic form for their presentation during the Trial, at 15, table 1 (Apr. 4, 2008).

184. Unified Technical protocol ("E-court Protocol") for the provision of evidence, witness and victims information in electronic form, ICC-01/14-01/18-64-Anx 23-01-2019, at table 1 ("source identity"),¶ 36 (Feb. 5, 2021). Notably, under the Unified E-court Protocol, unlike the protocol developed for *Lubanga*, leave from the chamber is not required to redact witness names from metadata, rather the identities of all protected individuals are automatically replaced with witness identification numbers.

185. *See, e.g.*, Andrzej Kozlowski, *Comparative Analysis of Cyberattacks on Estonia, Georgia and Kyrgyzstan*, 3 Eur. Sci. J. 1 (Nov. 2020); Przemyslaw Roguski, *Russian Cyber Attacks Against Georgia, Public Attributions and Sovereignty in Cyberspace*, Just Security (Mar. 6, 2020), https://www.justsecurity.org/69019/russian-cyber-attacks-against-georgia-public-attributions-and-sovereignty-in-cyberspace/; Lilia Yapparova, *'Just the tip of the iceberg' How Russian neo-Nazi paramilitary fighters steal cryptocurrency through Ukrainian charity sites — and use it to fund the war*, Meduza (Nov. 17, 2022), https://meduza.io/en/feature/2022/11/17/just-the-tip-of-the-iceberg.

have been mentioned as potential hacking targets in Russian Telegram channels.[186]

Raised awareness of NGOs conducting open-source investigations has also opened the door for phishing by actors pretending to be conducting investigations. Bellingcat recently stated that it had become aware of at least one instance of an actor using the name of a Bellingcat contributor as part of an apparent phishing campaign.[187] The author reached out to Bellingcat for more information and was informed that the name used in the email was a pseudonym the contributor used for publication, meaning that the actors likely did not successfully ascertain the contributor's true identity,[188] which may indicate that the email was sent by relatively unsophisticated actors. While the purpose of this particular scheme is not yet clear, it is foreseeable that such a strategy could be used to collect sensitive information from witnesses, exposing them to risk.

IV. Conclusion

For better or worse, convincing the ICC to accept submission of open-source and user-generated evidence will not be difficult. Precedent has demonstrated the Court's willingness to accept even evidence of questionable authenticity, giving rise to concerns of overproduction, bias, unacknowledged prejudicial effect, and misuse of the Court as a platform for narrative-building. These criticisms are likely to intensify if the mass of evidence collected from open sources and directly from users results in high-volume submissions to the court. The real challenge for open-source and user-generated evidence will be persuading the ICC to accord significant weight to it. The outcome of that question depends in part on how well technological advances and methodological shifts have addressed the Court's past concerns regarding such evidence. Greater use of metadata, corroboration of evidence with other open-source

186. Hendrix, *supra* note 118. As mentioned in *supra* n. 146, the war crimes submission portal has been repeatedly down in the last month, suggesting that this risk may be materializing.

187. Bellingcat, Linkedin, https://web.archive.org/web/20230504161805/https://www.linkedin.com/posts/bellingcat_weve-been-made-aware-of-a-possible-email-activity-7059888793461350400-Na06/ (last visited May 5, 2023).

188. E-mail from Eliot Higgins, Creative Director and Founder of Stichting Bellingcat, to Beth Kelley (May 5, 2023, 05:05 EST) (on file with author).

information, and apps for collection of user-generated evidence which establish a chain of custody will all help establish the authenticity and reliability of evidence. Still, without the ability to directly question the witnesses who collected the evidence, skepticism will likely persist.

These advancements also help mitigate concerns beyond admissibility by providing greater assurances of secure data storage and anonymization of witness data. However certain risks, like that of a sophisticated cyberattack, carry a level of unpredictability, such that it will be difficult to know whether sufficient safeguards have been instituted until after an event has occurred. Finally, this conflict has demonstrated a crucial non-judicial use of open-source and user-generated information to potentially help investigators track children who have been deported to the Russian Federation. Nearly six years after the *Al-Werfalli* warrant promised to put open-source, user-generated evidence to the test at the ICC, the investigative community appears better positioned than ever to maximize the evidentiary potential of this information in trials related to the war in Ukraine.