Digital Investigations of Systematic and Conflict-Related Sexual Violence: Practice and Possibilities

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Abstract

This article discusses a new guide that has been developed to support the responsible use of digital open-source information to investigate systematic and conflict-related sexual violence (SCRSV). Drafted by the Institute for International Criminal Investigations and the Human Rights Center at UC Berkeley School of Law, the just-published pilot version of the Open-Source Practitioner's Guide to the Murad Code aims to minimize the risks and maximize the potential for digital investigations into SCRSV. Part I of this article opens with a brief history of accountability for SCRSV, touching on the need to strengthen SCRSV investigations and providing a brief introduction to existing ethical guidelines. That is followed by a short history of digital open source investigations. Part II brings those histories together, touching on the various roles that digital investigations are beginning to play in the investigation and prosecution of SCRSV, acknowledging challenges to integrating digital methods into investigations, offering suggestions for resolving those challenges, and summarizing the guide's relevant content. Part III looks to the future, exploring the potential for both tech-assisted and machine-led processes to strengthen the investigation and prosecution of SCRSV. The article concludes with some thoughts on how emerging digital technologies, and especially machine learning-based research methods, may prove useful to future accountability for SCRSV crimes.

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I. INTRODUCTION

In 1863, President Abraham Lincoln had a problem: He needed to constrain the conduct of his soldiers, who were fighting in the U.S. civil war. Tired, hungry, and often angry, too many of his men were committing crimes as they swept through the communities they conquered—just like so many combatants in so many countries before them.

An attempt at curbing their behavior resulted in a groundbreaking code of conduct, known in short as the Lieber Code.[1] The Code forbade soldiers from engaging in "all destruction of property not commanded by the authorized officer, all robbery, all pillage or sacking [and] all rape,"[2] each crime carrying the penalty of death.[3]

A precursor to the Geneva Conventions, which regulate the conduct of war worldwide, the Lieber Code has been hailed as a progenitor of today's international legal framework, including prohibitions on conflict-related sexual violence.[4] Despite these prohibitions and their frequent violation, however, investigators and prosecutors have historically been slow to focus on systematic and conflict-related sexual violence (SCRSV) when accounting for soldiers' and others' conflict-related conduct. In response, pioneering practitioners have dedicated significant time and attention to finding new ways to strengthen the investigation and prosecution of such crimes, doing so in ways that are sensitive to the needs of survivors.

The international justice community reached a critical milestone in 2020 with the publication of another code of conduct: the Global Code of Conduct for Gathering and Using Information About Systematic and Conflict-Related Sexual Violence (the "Murad Code").[5] Named after Yazidi activist Nadia Murad, a survivor of conflict who won the Nobel Prize for her advocacy for women held in conflict-related sexual servitude,[6] the Murad Code distills minimum standards

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[1]   U.S. War Dep't, *Instructions for the Government of Armies of the United States in the Field, General Orders No. 100*, THE AVALON PROJECT, https://perma.cc/5AQZ-76Z4 (last accessed Mar. 30, 2025).

[2]   *Id.* art. 44.

[3]   *Id.*

[4]   *See, e.g.*, Daniel Palmieri, *Sexual Violence in Armed Conflict: The Historical Limits of Humanitarian Action and the ICRC in the 20th Century*, HUMANITARIAN LAW & POLICY (Dec. 2, 2021), https://perma.cc/5P9Y-SXQ4; Jenny Gesley, *The "Lieber Code" – the First Modern Codification of the Laws of War*, LIBRARY OF CONGRESS BLOGS (Apr. 24, 2018), https://perma.cc/KF32-K4QW; Alexander H. Mindrup, *The Lieber Code: A Historical Analysis of the Context and Drafting of General Orders No. 100*, 1 CARDINAL EDGE 1 (2021).

[5]   INSTITUTE FOR INTERNATIONAL CRIMINAL INVESTIGATIONS, GLOBAL CODE OF CONDUCT FOR GATHERING AND USING INFORMATION ABOUT SYSTEMATIC AND CONFLICT-RELATED SEXUAL VIOLENCE, (Apr. 13, 2022), https://perma.cc/4TTJ-Q9YN [hereinafter "Murad Code"].

[6]   *About Nadia Murad*, NADIA'S INITIATIVE, https://perma.cc/88X9-SWVK (last visited Apr. 27, 2025) .

for the safe, effective and ethical gathering and use of information about SCRSV. It is designed for criminal and human rights investigators, helping to ensure that survivors' interests are prioritized in investigation and prosecution efforts, and conducted in ways that minimize the risks of retraumatization and other harms.[7]

While the Code is relevant to and briefly addresses digital investigation methods,[8] its focus is on more traditional techniques. This includes ethical interviewing, which has long been the primary means of information-gathering related to SCRSV crimes. Because the primary audience of the Murad Code isn't digital open source investigators (those who mine social media and other online content for relevant data), and because the Code is organized around a set of principles as opposed to a particular work process, the terminology and workflow deviate from open source investigative practice. Further impeding its use by digital investigators is that relatively few are aware of the Murad Code; those who are, may not recognize the full scope of its applicability to their practice, especially because open source workflows do not include the direct engagement of survivors, impeding recognition of the importance of integrating survivors' rights.

Since digital investigations offer tremendous promise to complement more traditional tactics, however, as information relevant to SCRSV increasingly appears online,[9] a number of practitioners have come together to bridge the gap. Collectively, the Institute for International Criminal Investigations and the Human Rights Center at UC Berkeley School of Law—with input from a global array of experts—have produced a pilot version of an Open Source Practitioner's Guide to the Murad Code, with the aim of minimizing the risks and maximizing the potential for digital investigations to responsibly support the investigation of SCRSV.[10]

This article details the formation and content of the practitioner's guide. It opens with a brief history of accountability for SCRSV, touching on the need to strengthen investigations. That is followed by a brief introduction to the Murad Code, and a short history of the emergence of digital open source investigations. Part II brings those histories together, identifying the various roles that digital investigations are beginning to play in the investigation and prosecution of SCRSV, acknowledging challenges to integrating digital methods into investigations, offering suggestions for resolving those challenges, and

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[7]   *See About the Murad Code Project*, MURAD CODE, https://perma.cc/LCP7-HCCR (last visited Mar. 30, 2025) [hereinafter "Murad Code Website"].

[8]   *See* Murad Code, *supra* note 5, at 1, 12.

[9]   *See* Alexa Koenig & Ulic Egan, *Power and Privilege: Investigating Sexual Violence with Digital Open Source Information*, 19 J. INT'L CRIM. JUST. 55 (2021); Alexa Koenig & Ulic Egan, *Hiding in Plain Site: Using Online Open-Source Information to Investigate Sexual Violence and Gender-Based Crimes, in* TECHNOLOGIES OF HUMAN RIGHTS REPRESENTATION (Alexandra S. Moore & James Dawes eds., 2022).

[10]   *See* Murad Code Project Website, *supra* note 7 (discussing the Guide on Survivor-Centered and Effective Open-Source Research).

summarizing the guide's relevant content. Part III looks to the future, exploring the potential for both tech-assisted and machine-led processes to strengthen the investigation and prosecution of SCRSV. The article concludes with some thoughts on how emerging digital technologies, and especially machine learning-based approaches, may prove useful to future accountability.

A. History of Accountability for Sexual Violence in Conflict

The investigation of SCRSV has historically faced numerous barriers,[11] resulting in frustrating under-prosecution and conviction.[12] Such barriers may be "psychological, bureaucratic, political, and socioeconomic[.]"[13] They include diverse phenomena, ranging from customs that "normalize" rape in war; stigmas, stereotypes, and fears of retaliation and other harms that result in under-reporting by survivors; misconceptions and attitudes about the difficulty of investigating and prosecuting such crimes; and the need for additional training of investigators, lawyers and judges so that they better understand the diversity of forms SCRSV can take and where relevant evidence might be found.[14]

Under-investigation, prosecution and conviction are a problem not only for survivors, but societies. Effective prosecutions of SCRSV have numerous benefits. As noted by professor Valerie Oosterveld, successful prosecutions 1) signal that SCRSV crimes are serious, 2) reverse historic discrimination that result in the ignoring or downplaying of such crimes, 3) have an "expressive function" that clarifies that "these acts are illegal and those who committed or permitted them are to be held accountable and condemned," and 4) confirm for "victims and their communities that their suffering was the result of illegal activity," an important step in validating the seriousness of their experiences.[15]

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[11] U.K. FOREIGN & COMMONWEALTH OFFICE, INTERNATIONAL PROTOCOL ON THE DOCUMENTATION AND INVESTIGATION OF SEXUAL VIOLENCE IN CONFLICT: BEST PRACTICE ON THE DOCUMENTATION OF SEXUAL VIOLENCE AS A CRIME OR VIOLATION OF INTERNATIONAL LAW (2d ed. 2017), https://perma.cc/B7U4-HBXR [hereinafter Sexual Violence Protocol].

[12] *See, e.g.*, Valerie Oosterveld, *Contextualizing Sexual Violence in the Prosecution of International Crimes, in* THEMATIC PROSECUTION OF INTERNATIONAL SEX CRIMES 193, 194–95 (Morten Bergsmo ed., 2d ed. 2018) (noting that "historically, sexual violence offenses directed against girls and women were ignored, mislabeled as an inevitable consequence of war, or deemed as less important than other forms of violence. Sexual violence directed against men and boys was similarly silenced"). Sexual violence conviction rates of one percent in England and Wales (as just one example) have been described as "de facto" decriminalization by the Victims Commissioner.

[13] Philipp Schulz & Anne-Kathrin Kreft, *Accountability for Conflict-Related Sexual Violence*, OXFORD RESEARCH ENCYC. INT'L STUD. (Feb. 24, 2022), https://perma.cc/4VQE-YGQQ.

[14] *Id.*

[15] Oosterveld, *supra* note 12, at 195–96.

1. Early attempts at prosecuting SCRSV

International criminal law, humanitarian law and human rights law developed significantly in the immediate aftermath of World War II. Yet the tribunals that emerged to address conflict-related atrocities frequently failed to include SCRSV among the charges. While Nazi crimes included "forced nakedness, intrusive body searches, forced sterilization, forced or solicited prostitution and rape,"[16] crimes of sexual violence were omitted from the Charter of the International Military Tribunal at Nuremberg's sections on war crimes and crimes against humanity.[17] The reasons for the omission are complex, integrating legal, historical and sociological causes. Although the Tokyo Tribunal and national courts fared somewhat better in addressing rape and other forms of sexual violence,[18] only a tiny subset of cases were ever addressed.[19]

In the 1990s, legal innovators created "ad hoc" tribunals to address conflict-related crimes in the former Yugoslavia and Rwanda, including war crimes, crimes against humanity and genocide.[20] Rape and sexual violence had been widespread and well-documented[21] and thus impossible to ignore. The tribunals' resulting jurisprudence on conflict-related sexual violence established an important foundation that helped to shift norms and strengthen later accountability. For example, the *Akayesu* decision in 1998 defined rape as an international crime for the first time, establishing that sexual violence "is any act of a sexual nature which is committed on a person under circumstances which are coercive,"[22] and that coercion could be established by the context of an ongoing conflict.[23]

Since then, courts have begun to improve their record in recognizing, acknowledging and securing convictions for SCRSV at the international, regional and national levels,[24] although progress has remained surprisingly slow and often frustrating. SCRSV cases continue to be riddled with stigmatizing language, revictimization of survivors, and poor outcomes based on limited understandings,

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[16]   Hilly Moodrick-Even Khen & Alona Hagay-Frey, *Silence at the Nuremberg Trials: The International Military Tribunal at Nuremberg and Sexual Crimes Against Women in the Holocaust*, 35 WOMEN'S RIGHTS L. REPORTER 43, 44 (2013).

[17]   *Id.*

[18]   *See* Kim Thuy Seelinger, *Close to Home: A Short history, and Rough Typology, of National Courts Prosecuting Wartime Sexual Violence,* 18 J. INT'L CRIM. JUST. 219 (2020).

[19]   *Id.*

[20]   *Id.*

[21]   Schulz & Kreft, *supra* note 13, at 7.

[22]   Prosecutor v. Akayesu, Case No. ICTR-96-4-T, Judgment, ¶ 688 (Int'l Crim. Trib. for Rwanda Sept. 2, 1998).

[23]   *See* Catherine A. MacKinnon, *Defining Rape Internationally: A Comment on* Akayesu, 44 COLUMBIA J. TRANSNAT'L L. 940, 942–43 (2006).

[24]   *See* Schulz & Kreft, *supra* note 13.

myths and attitudes towards the crimes, gender narratives, and victims. At the International Criminal Court (ICC), for example, two early cases proved deeply disappointing: in the *Lubanga* case,[25] focused on crimes committed in the Democratic Republic of Congo, the prosecutor failed to include criminal charges of sexual violence despite "ample" evidence of their occurrence.[26] In 2016, Jean-Pierre Bemba Gombo was convicted on the basis of command responsibility for SCRSV perpetrated by his troops in the Central African Republic[27] yet his conviction was overturned by an appeals court in 2018.[28]

Facing significant international scrutiny, and reflecting critical input from nongovernmental organizations, academics and other members of civil society, the prosecutor's office slowly began to improve its success rate. Bosco Ntaganda was convicted in 2019 for the war crimes and crimes against humanity of rape and sexual slavery, among other crimes.[29] Dominic Ongwen of Uganda—a former commander of the Lord's Resistance Army—was sentenced in 2021 after the court found him responsible for the crimes of forced marriage as a form of "other inhumane acts," forced pregnancy, rape, and sexual slavery.[30]

Notably, many cases at the ICC have involved crimes that predated the rise of the smartphone and use of social media in the affected communities, meaning digital investigations were less relevant than they are today. For more contemporary cases, the ICC has begun to systematically deploy the use of digital open source information. One relatively recent example is the *Al Hassan* case from Mali,[31] which included digital evidence related to the charges of the crimes against humanity of rape, sexual slavery, and other inhumane acts in the form of forced marriage, as well as the war crimes of rape, sexual slavery, and attacking protected objects.[32] However, while Al Hassan was convicted of torture and outrages against personal dignity, he was acquitted in 2024 of all of the charges expressly related to SCRSV, a decision that upset many in the international justice community, including survivors.[33]

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[25]   Prosecutor v. Lubanga, ICC-01/04-01/06, Judgment (Mar. 14, 2012).

[26]   *See, e.g.*, Seelinger, *supra* note 18, at 224.

[27]   Prosecutor v. Bemba, ICC-01/05-01/08, Judgment (Mar. 21, 2016); *see also* International Criminal Court, *Bemba Case: Timeline*, https://perma.cc/C34L-DLQN (last visited Apr. 17, 2025).

[28]   Prosecutor v. Bemba, ICC-01/05-01/08 A, Judgment on Appeal (June 8, 2018).

[29]   Prosecutor v. Ntaganda, ICC-01/04-02/06, Judgment (July 8, 2019).

[30]   Prosecutor v. Ongwen, ICC-02/04-01/15, Judgment (Feb. 4, 2021).

[31]   Prosecutor v. Al Hassan, ICC-01/12-01/18, Judgment (Nov. 20, 2024).

[32]   *Id.*

[33]   *See, e.g.*, *Al Hassan Case: A Welcomed Conviction that Falls Short of Justice for Victims of Gender-based Crimes*, International Federation for Human Rights (FIDH) (June 26, 2024), https://perma.cc/KW5L-NJRQ (discussing the balance between viewing the case as a success versus a failure for victims of sexual and gender-based violence). While there was significant evidence of SCRSV, including digital

Despite—and because of—this history, both survivors and practitioners have been working hard to improve survivors' experiences during legal processes. The difficult logistics and emotional experiences that witnesses endure when engaging with courts have been well-documented.[34] These challenges can be especially acute for SCRSV survivors. As noted by researchers Philipp Schulz and Anne-Kathrin Kreft, "feminist scholars in particular have critically laid bare how criminal proceedings often fail sexual violence survivors, especially by further silencing their voices and negating their agency."[35]

The advances needed to more successfully address SCRSV are therefore both substantive and procedural—substantive in the sense of better acknowledging the types of violence that should be accounted for, as well as the breadth of individuals who are impacted, and where relevant information may be found. For example, investigators, prosecutors and judges have increasingly recognized that sexual violence affects people of all genders,[36] and that violence is often intersectional in nature, affecting people on the basis of gender but also class, religion, ethnicity and more. Legal actors are also paying greater attention to legal processes—from courts expressing gratitude for a survivor's testimony, to investigators following up with witnesses as cases progress in courts—in order to better honor the inherent dignity of survivors.[37]

2. Protocols and guidelines for making SCRSV investigations more survivor-centered

Given the ongoing need to strengthen the investigation and prosecution of SCRSV and to do so in a survivor-centered and trauma-informed manner, experts have produced various tools to help investigators and other legal actors improve practice. In 2014, this included an international protocol for investigating sexual violence in conflict, "a set of guidelines setting out best practice on how to document, or investigate, sexual violence as a war crime, crime against humanity, actor of genocide or other serious violation of international criminal, human rights or humanitarian law."[38] The International Protocol on the Documentation and Investigation of Sexual Violence in Conflict (second edition 2017) has helped investigators and lawyers set norms and processes for more efficiently, effectively,

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information, the lack of conviction wasn't for lack of evidence that such crimes had occurred, but insufficient evidence to tie those acts to the accused. *See* Prosecutor v. Al Hassan, ICC-01/12-01/18-2594-OPI3-tENG, Separate and Partly Dissenting Opinion of Judge Antoine Kesia-Mbe Minuda (June 28, 2024).

[34] *See, e,g.*, ERIC STOVER, THE WITNESSES: WAR CRIMES AND THE PROMISE OF JUSTICE IN THE HAGUE (Bert B. Lockwood ed., 2007).

[35] Schulz & Kreft, *supra* note 13, at 3.

[36] *Id.*

[37] *See* STOVER, *supra* note 34; *see also* Robert M. Cover, *Violence and the Word*, 95 YALE L.J. 1601 (1986).

[38] Sexual Violence Protocol, *supra* note 11, at 11.

and ethically gathering evidence of sexual and gender-based violence in conflict settings.

In addition to providing critical process-based guidance, the protocol spotlights a series of indicators investigators should look for in order to better identify SCRSV. This includes evidence that sexual violence "may be imminent or ongoing,"[39] or, when documented online, has already occurred. Such indicators include forced recruitment, school raids, the separation of men and boys from women and girls, and torture. Political and legal indicators may circulate in both online and offline spaces, such as gendered forms of hate speech, declarations of states of emergency, and the targeting of women and members of the LGBTQ+ community.[40]

In 2020, the Institute for International Criminal Investigations, the U.K. Government, and Nadia's Initiative released a second seminal tool: the draft Murad Code, a global code of conduct for investigators and other gatherers and users of information about SCRSV, to help ensure that their processes are both survivor-centered and effective. Structured around a series of key principles, the Murad Code entreats investigators to engage in proper preparation to minimize harms, including retraumatization. Following close to two years of global review, the official version was published in April 2022. Now available in 13 languages,[41] the Murad Code has become a primary resource for ethical investigations into SCRSV.

Just months after the publication of the Murad Code, and more than 150 years after the release of the Lieber Code, then-U.S. President Joseph R. Biden acknowledged the importance of strengthening investigations of SCRSV, however possible. He explained that "wherever conflicts or crises occur, sexual violence continues to be wielded as a tool or is a byproduct of armed conflict. [Yet] impunity for [SCRSV] remains widespread, with accountability and justice the rare exception."[42] Noting the need, in particular, to "strengthen the capacity of executive departments and agencies to collect, identify, assess and share information on CRSV as appropriate,"[43] he underscored the importance of addressing impunity to better prevent SCRSV worldwide.

Enter digital investigations.

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[39] *Id.* at 24.

[40] *Id.*

[41] Murad Code Website, *supra* note 7.

[42] *Memorandum on Promoting Accountability for Conflict-Related Sexual Violence*, THE WHITE HOUSE (Nov. 28, 2022), https://perma.cc/3XM9-2C5P.

[43] *Id.*

B. History of Digital Open Source Investigations

A digital revolution arrived with the onset of the 21st century.[44] The first decade of the new millennium was marked by the emergence of social media platforms such as Facebook, YouTube, and Twitter (now X), as well as the proliferation of smartphones around the world. These developments enabled user-generated content captured on cell phones to be uploaded to social media, in some cases to serve as a source of evidence.[45]

By 2010, the relevance of that content was impossible to ignore. As the Arab Spring ignited and millions of activists posted their experiences online, NGOs and investigators began warning of a "coming storm" of potential digital evidence shared across social media sites.[46] A community of investigators began to actively explore how such content might play a complementary function to testimonial, physical, and more traditional documentary evidence in international cases,[47] even as a parallel set of investigators were continuing to work on strengthening investigations of SCRSV. Investigators in both fields were asking not only whether their respective areas of practice could be strengthened but *how*, exploring the ethical considerations needed to help ensure that survivors benefited from any methodological advances.

1. The Berkeley Protocol on Digital Open Source Investigations

In 2017, a team of lawyers, researchers, journalists, and investigators came together in Italy to discuss the need for global guidance on conducting digital investigations to support legal accountability.[48] With international input from a diverse set of experts in digital evidence, international prosecutions, computer science, human rights research, and journalism, the UN's Office of the High Commissioner for Human Rights and UC Berkeley's Human Rights Center released in 2020 the Berkeley Protocol on Digital Open Source Investigations: A Practical Guide on the Effective Use of Digital Open Source Information in

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44 *See, e.g.*, Brandiquo, *The Digital Revolution: Transforming Business in the 21st Century*, MEDIUM (Sept. 27, 2023), https://perma.cc/K2CQ-AMG2.

45 *See* Rebecca Hamilton, *User-Generated Evidence*, 57 COLUMBIA J. TRANSNAT'L L. (2018); Alexa Koenig et al., *Access Denied? The International Criminal Court, Transnational Discovery, and the American Servicemembers Protection Act*, 36 BERKELEY J. INT'L L. (2018); Keith Hiatt, *Open Source Evidence on Trial*, YALE L.J. FORUM (2016).

46 Peggy O'Donnell et al., Workshop Report, *Beyond Reasonable Doubt: Using Scientific Evidence to Advance Prosecutions at the International Criminal Cour*t (Oct. 2012), https://perma.cc/W3K3-3FGP at 7; *see also* Alison Cole, *Pictures of Atrocity: Turning Video Footage into Evidence of War*, OPEN SOCIETY JUSTICE INITIATIVE (Mar. 6, 2012), https://perma.cc/VMV7-W5YT.

47 *See* Alexa Koenig & Lindsay Freeman, *Strengthening Atrocity Cases with Digital Open Source Investigations*, ARTICLES OF WAR (Apr. 1, 2021), https://perma.cc/45VT-WA8Q.

48 *See generally* U.C. Berkeley School of Law Hum. Rights Center, *The New Forensics: Using Open Source Information to Investigate Grave Crimes* (2018), https://perma.cc/PB3H-ZZE5.

Investigating Violations of International Criminal, Human Rights and Humanitarian Law (the "Berkeley Protocol").[49] By 2024, the Berkeley Protocol was available in all of the U.N.'s official languages.[50] Several investigative teams have also created unofficial translations in additional languages for use in their countries.[51]

The Berkeley Protocol is now well-known and widely used by digital open source investigators. It contains a high-level set of principles and minimum standards for responsible online investigations. However, it does not address specific crimes like SCRSV, which require specialized knowledge of law, terminology, human behavior, and risks for both survivors and investigators. Such risks can include the re-traumatization of survivors and/or investigators; reprisals, retaliation and other harms to people exposed as victims within affected communities, including so called "honor killings," and the execution or imprisonment of men and boys accused of illegal homosexual behavior, for example when raped by perpetrators of the same sex. Given the sensitivities of this work and the unique ways SCRSV may be communicated online, investigators need an additional, specialized set of skills to do this work well.

2. Open Source Investigations and SCRSV

To date, digital open source information has rarely been the focus of SCRSV cases, and for good reasons. Most digital investigations have prioritized highly visual and accessible phenomena: the bombing of cities, or the mass execution of detainees, for example, caught on camera and uploaded to the internet. While this low-hanging fruit has fed breakthrough investigations like the downing of flight MH-17 over Ukraine[52] or the burning of villages in Myanmar,[53] less explored is open source information's utility for phenomena that are sometimes less visual, like SCRSV. And when online investigators do come across clear evidence of SCRSV, they may not realize the different and/or heightened risks that come with handling such material, both for survivors and for themselves. One example is the risk of prosecution if the investigator were to download, preserve, or use evidence

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[49]   *Launch of the Berkeley Protocol on Digital Open-Source Investigations - Berkeley University*, UNITED NATIONS OFFICE OF THE HIGH COMMISSION FOR HUMAN RIGHTS (Dec. 1, 2020), https://perma.cc/N9XM-GU4S.

[50]   *See HRC and U.N. Human Rights Launch Berkeley Protocol*, BERKELEY HUMAN RIGHTS CENTER, https://perma.cc/SH39-BBNG (last visited Apr. 7, 2025).

[51]   *See, e.g.*, Edward Lempinen, *In Ukraine, Berkeley Experts Are Shaping the Legal Fight Against War Crimes*, U.C. BERKELEY NEWS (Feb. 21, 2023) https://perma.cc/MU9F-N8CT (discussing how Ukrainian investigators translated the Berkeley Protocol into Ukrainian to support conflict-related investigation in their country).

[52]   *MH17: The Open Source Evidence: A Bellingcat Investigation*, BELLINGCAT, https://perma.cc/3JFY-2ZFR (last visited Apr. 27, 2025).

[53]   *Myanmar: Video and satellite evidence shows new fires still torching Rohingya villages*, AMNESTY INTERNATIONAL (Sept. 22, 2017) https://perma.cc/XQV9-87P8.

that depicts sexual violence against children, which may constitute child sexual exploitation material, content that is strictly forbidden to download or possess in most jurisdictions.

Yet, the potential to find evidence of SCRSV in online spaces–even unintentionally–is significant. Relevant content is abundant. For example, the U.S. National Human Trafficking Hotline documented a 95% increase in reports of labor and sex trafficking on Instagram and 125% on Facebook between 2019 and 2020.[54] ISIS and other groups often use social media to recruit new members and terrorize targeted populations.[55] Witnesses to conflict may post videos to social media that either explicitly or implicitly indicate SCRSV. Such crimes discovered online tend to fall into two types: those that take place offline but are documented on the Internet, and those that are technology-facilitated, such as the trafficking of persons through online sources.[56]

The *Hassan* case at the ICC[57] is a good example of the potential value of digital open source information. The prosecution's petitions to admit open source content are especially illustrative. In one petition, the prosecutor requested admission of 63 documents that were published by various U.N. bodies, including the U.N. Office of the High Commissioner for Human Rights and the U.N.'s Educational, Scientific and Cultural Organization. The prosecutor argued the documents were relevant to patterns of crimes found in northern Mali, as well as to sentencing.[58] With regards to the admissibility of seven photographs that had been downloaded from the website for the U.N. Multidimensional Integrated Stabilization Mission in Mali (MINUSMA), the prosecution argued that there were sufficient indicia of authenticity, as each image included the name of the photographer and the date the photo was taken. In response to a potential defense objection that the reports constitute hearsay, the prosecutor noted that hearsay, including "information based on anonymous sources may also be considered as corroboratory evidence."[59]

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[54]   *Human Trafficking Trends in 2020*, POLARIS, https://perma.cc/6J6L-TVPD (last visited Apr. 27, 2025) (as cited in Medora Jones, *No Victim, No Problem? How Open Source Investigations Can Strengthen Prosecutions of Human Trafficking* (2024) (on file with the author)).

[55]   *See, e.g.*, Lisa Blaker, *The Islamic State's Use of Online Social Media*, 1 MILITARY CYBER AFFAIRS 1 (2016).

[56]   *See, e.g.*, Sarah Zarmsky, *Is International Criminal Law Ready to Accommodate Online Harm? Challenges and Opportunities*, 22 J. INT'L CRIM. L. 169 (2024) (discussing the sharing of footage related to criminal acts on the internet versus using the internet to facilitate crimes).

[57]   *Prosecutor v. Al Hassan*, *supra* note 31.

[58]   *See, e.g.*, International Criminal Court, *Situation in the Republic of Mali in the Case of* Prosecutor v. Al Hassan*, Prosecution's second request for the admission of documentary evidence from the bar table*, ICC-01/12-01/18 (Apr. 13, 2021).

[59]   Importantly, however, international courts are not the only relevant venue. As law professor Kim Thuy Seelinger has noted, "national courts have increasingly become especially vibrant fora for prosecuting [SCRSV]," especially given frustration with the evolution of the jurisprudence and the success rate of such prosecutions at the ICC. Seelinger, *supra* note 18.

Ultimately, however, despite the introduction of both open source and closed source evidence, Hassan was acquitted of all sexual violence charges. Although a majority of the judges found that sexual violence had occurred, they did not find sufficient evidence that the crimes were linked to the accused.[60] While in the *Hassan* case, prosecutors had sufficient evidence of the base crimes, that is not always the case; in addition, securing adequate linkage evidence is one of the biggest barriers to successful international prosecutions. One way to overcome such challenges is for digital investigators to incorporate multiple strategies for identifying SCRSV when designing their investigations. Traditional investigators may not recognize the diversity of evidence potentially available online, or the ways such information may prove helpful. For example, in the trafficking context, recruitment may take place on platforms like Facebook or Instagram;[61] the transportation of people may be traced through photos and videos of hotels; people may even be sold online.[62] In a recent investigation into violence against protestors in the Woman, Life, Freedom movement in Iran, for example, numerous videos circulated online depicting violence perpetrated by security forces against women for "improper hijab," including behavior as explicit as an officer appearing to grab a victim's breast.[63] Such videos might help establish various elements of the crime of gender persecution as a crime against humanity[64] or help to tie any underlying crimes to a particular military or police unit, for example by the style of uniform, or identification of patches or other indicators of unit or rank. Social media accounts may also be used to help determine if a victim or perpetrator is an adult or child, for example from posts wishing someone a happy birthday and stating their age. They may also help identify perpetrators, especially when insignia or other symbols are used by in-groups in their social media bios, such as a parking sign or the number 16 to indicate the letter P, the sixteenth letter in the English alphabet, to advertise that someone is a pimp,[65] or using terminology like "get a key" in their communications to signal trafficking in

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60   *See* Rosemary Grey & Valerie Oosterveld, *Al Hassan: The International Criminal Court's First Judgment on Gender Persecution (Part 2)*, Opinio Juris (Feb. 8, 2024) https://perma.cc/H8F3-F833.

61   In Polaris' 2021 report, it's striking how much more recruitment seems to happen online, proportionately, than in physical spaces; more specifically, while they identified 40 cases of school-based recruitment, and 17 cases of recruitment from group and foster homes, they identified more than 600 recruitments that took place over the Internet. Polaris Analysis of 2021 Data from the National Human Trafficking Hotline (2022), https://perma.cc/6JXX-HZPN, at 16.

62   ICC Office of the Prosecutor, Policy on Slavery Crimes (2024), https://perma.cc/2Q44-T5UA.

63   Andrea Richardson & Khosro Isfahani, Gender Persecution in the Islamic Republic of Iran: An Open Source Investigation (2025), https://perma.cc/EES7-K85W.

64   *Id.*

65   *See, e.g.*, Jones, *supra* note 54, at 10.

people.[66] Investigators also need to be aware of the ways that communications online can vary by gender, with sexual violence against men and boys often described as torture instead of rape.[67]

Investigators should never assume there is a lack of online information about sexual and gender-based violence.[68] Abundant information related to SCRSV exists online, whether photographs or videos that depict base crimes or their aftermath, or contextual information that provides a larger understanding of the actions of perpetrators, their relationships, their knowledge of the crimes, and/or their unwillingness to address those crimes once perpetrated. Publicly-recorded statements by high-level commanders can illustrate attitudes towards targeted populations to help make the case for genocide. At a minimum, online information can help to illustrate the "chapeau" elements of international crimes, helping establish SCRSV as a crime against humanity, war crime, act of aggression, or genocide.[69]

Ultimately, digital open source information may assist every stage of the investigation and prosecution of SCRSV, from preliminary research to investigation, trial, sentencing, and reparations. Digital open source information can be especially useful during the preliminary investigation phase[70] when investigators are trying to figure out the basics of what happened in a particular conflict. Such content may help identify base crimes, develop timelines, assess networks of relationships, and generate lists of potential witnesses and victims for interview. When international investigators have limited or no ability to go in country, such online research is essential.[71] Carefully assessing who may be communicating in online spaces, where, when, and about what can make finding relevant information especially effective.

II.   THE OPEN-SOURCE PRACTITIONER'S GUIDE TO THE MURAD CODE

Given this history, by the early 2020s it was inevitable that investigators with digital open source expertise and investigators with SCRSV expertise would begin

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[66]   Koenig and Egan, *Power and Privilege, supra* note 9, at 75.

[67]   *Id.*

[68]   Koenig & Egan, *Hiding in Plain Site, supra* note 9.

[69]   *See, e.g.*, Lindsay Freeman, *"Digital Evidence and War Crimes Prosecutions: The Impact of Digital Technologies on International Criminal Investigations and Trials,"* 41 FORDHAM INT'L L. REV. 283 (2018).

[70]   Alexa Koenig, Felim McMahon, Nikita Mehandru, and Shikha Silliman Bhattacharjee, *Open Source Fact-Finding in Preliminary Examinations, in* QUALITY CONTROL IN PRELIMINARY EXAMINATION: VOLUME 2 (Morten Bergsmo and Carsten Stahn, eds., 2018).

[71]   *See, e.g.*, *Nuremberg at 75: Launching the Berkeley Protocol on Digital Open Source Investigations* (Dec. 1, 2020) https://perma.cc/L4TB-MKGA (comments of Michelle Bachelet, then-U.N. High Commissioner for Human Rights).

to intersect. Previously—at least outside of formal, integrated legal teams—the two sets of experts rarely interacted. And when they did, they were marked by very different norms and practices. Investigations into SCRSV frequently center interviews with survivors and are driven by a need for sensitive engagement. Digital investigations, by contrast, depend on digital technologies, which can feel the opposite of human given the centrality of machines. While one set of practitioners requires extensive training in trauma-informed interviewing, the other relies on an understanding of how the internet works and how people communicate in online spaces.

This disjunct drove the need for guidelines that could serve as a "translator" or "facilitator" between these communities of practice. Yet early conversations yielded significant concerns. On the part of some SCRSV experts, there was reluctance to bring in digital methods in case those methods began to overshadow the critical testimony provided by survivors and other witnesses. They were also concerned about judges' shifting expectations. It had taken years to get jurisdictions to adopt rules that prioritized survivor testimony without requiring corroborating information. If digital open source information became too widespread, would judges start to expect it, and see cases without it as less reliable, undermining decades of advocacy?[72] Further, there were concerns about authenticating such material, reaching out to survivors with little previous exposure to investigators, and the psychosocial discomfort that such material can produce. Most digital investigators, on the other hand, either weren't focusing on SCRSV or weren't aware of the ways in which such content might differ in terms of discovery strategies or risks from other conflict-based crimes. Many also didn't understand the full range of ways that such information could be helpful, for example as linkage or pattern evidence, or as leads to other relevant information.

As digital investigators began to increasingly come across SCRSV content, conversations shifted to how to introduce digital open source investigators to the Murad Code. Yet some experienced investigators remained concerned about encouraging digital investigators to investigate SCRSV without appropriate training; other equally-experienced investigators felt strongly that collecting more evidence should *absolutely* be encouraged to support the experiences of survivors and strengthen cases, to improve what was often a discouraging conviction rate.

Importantly, the Murad Code is relevant to all investigations, regardless of whether the underlying investigations are digital or traditional, and regardless of whether investigations are centered on SCRSV or not. This is because both traditional and digital investigators will likely encounter content related to SCRSV even without looking for it, and therefore should have a plan for handling such content once found. Yet, as noted above, there is a significant gap between the language, norms, and practices of digital investigators and SCRSV investigators,

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72   *See* Koenig and Egan, *Power and Privilege*, *supra* note 9, at 81.

making much of the Murad Code seem irrelevant to digital investigations even when essential. For example, Principle 2 discusses the need to "work through existing and vetted access or referral points or . . . create safe pathways so that a survivor can decide to approach [investigators]."[73] However, open source information is already online and therefore already accessible, while survivors' information, when shared privately, is closed-source and therefore not relevant to those who work exclusively with open sources. In Principle 2.3, the Murad Code discusses the need to ensure survivors provide "express informed consent" before the investigator uses or shares information.[74] With digital open source information, it can be especially confusing whose consent is needed and whether that person can even be accessed.[75] Those depicted in videos may be deceased or anonymous or unrecognizable; a video may contain a primary victim but also bystanders, perpetrators, and others. Digital investigators may have a poor understanding of who to reach out to, or even the risks of reaching out, especially if none of their team are on site in the region, or have linguistic or cultural knowledge related to an incident.[76]

How one would reach out to a survivor—and whether that would even be appropriate—might also differ between the groups of investigators. When interviewing a survivor, consent may be given face to face and their identity may be relatively straightforward to verify, but that is complicated in an online context. If the only contact with affected parties is through digital sources, what is the appropriateness of reaching out over social media platforms like Twitter/X to someone who posted information to a public feed? What are the risks of sending a direct message through a social media platform? Could that message be intercepted? Might someone's partner or perpetrator also have access? Are there encrypted (and thus safer) alternatives? Does the investigator even know if the person behind the account is who they claim to be?

To address these issues and facilitate communication, numerous organizations and individuals came together to create a pilot set of guidelines for global input. The Institute for International Criminal Investigations (IICI), which spearheads the Murad Code Project, partnered with the Human Rights Center at UC Berkeley (HRC), which coordinated the Berkeley Protocol. They convened a global circle of advisers comprised of experts in international criminal investigations, sexual and gender-based violence, privacy law, child rights, and digital open source investigations, as well as SCRSV survivors who contributed their significant expertise.

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73   Murad Code, *supra* note 5, at 6.

74   Murad Code, *supra* note 5, at 10.

75   Alexa Koenig, Anthony Ghaly, & Simone Lieban Levine, *Merging Responsibilities: Ethical Considerations for Securing Consent in Open-Source Investigations of Conflict-Related Sexual Violence*, 22 J. INT'L CRIM. JUST. 263 (2024).

76   *Id.*

The project emerged with two primary goals: 1) increase traditional investigators' awareness of potentially-relevant digital investigation methods, and 2) increase digital investigators' awareness and understanding of minimum standards relevant to effective and survivor-centered investigations of SCRSV, in order to minimize the risk of harming someone with their methods. Across both of these communities, any guidance would serve as a "translation" of the various principles of the Murad Code for digital open source investigators, and an explanation of how its principles apply to online practice. Ultimately, the Guide would build off Principle 8 of the Murad Code, which acknowledges that "indirectly sourced information by or about survivors,"[77] such as that found online, can raise privacy, legal, and security implications, which the Guide would spotlight and address.

To kick off the project, IICI and HRC hosted a workshop to test their assumption that a guide was needed and if so, what it might appropriately contain. The resulting document went through several rounds of drafting. While the content seemed relatively straightforward—and everyone recognized the importance of incorporating specific examples to illustrate various points—identifying an appropriate format was surprisingly difficult. Should the document go section by section through the Murad Code, with a "translation" for digital investigators under each provision? That proved unfeasible as the document became unduly long, discouraging engagement. When sections were collapsed, the shorter format still did not work, as digital investigators' processes differ significantly from that of traditional investigators, and therefore the principles seemed out of order. Ultimately, based on extensive feedback, the team structured the content around the stages of a digital investigator's workflow, borrowing from the Berkeley Protocol, which divides investigative phases into Preparation, Investigation, and Post-Investigation.[78] Select principles from the Murad Code were then interpreted for digital investigators as they would likely arise during the course of their work.

Preparation ended up being the most extensive section of the Guide.[79] Ethical considerations weigh especially heavily before an investigation begins, as

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[77] Murad Code, *supra* note 5, at 10 ("Principle 8.3: Recognise rights and risks from indirectly sourced information").

[78] *See* HUMAN RIGHTS CENTER UC BERKELEY SCHOOL OF LAW AND UNITED NATIONAL HUMAN RIGHTS OFFICE OF THE HIGH COMMISSIONER, BERKELEY PROTOCOL ON DIGITAL OPEN SOURCE INVESTIGATIONS: A PRACTICAL GUIDE ON THE EFFECTIVE USE OF DIGITAL OPEN SOURCE INFORMATION IN INVESTIGATING VIOLATIONS OF INTERNATIONAL CRIMINAL, HUMAN RIGHTS AND HUMANITARIAN LAW (2022), https://perma.cc/ZTK9-NGK4.

[79] *See* INSTITUTE FOR INTERNATIONAL CRIMINAL INVESTIGATIONS AND HUMAN RIGHTS CENTER UC BERKELEY SCHOOL OF LAW, OPEN-SOURCE PRACTITIONER'S GUIDE TO THE MURAD CODE: APPLYING MINIMUM STANDARDS FOR THE SAFE, ETHICAL AND EFFECTIVE GATHERING AND USE OF OPEN-SOURCE INFORMATION ABOUT SYSTEMATIC AND CONFLICT-RELATED SEXUAL VIOLENCE--PILOT VERSION (2025) at 13–36.

investigators plan for their investigation in ways that minimize risk. The section dealing with the investigative process includes material like the appropriate state of mind to bring into an investigation, how to most ethically and effectively identify relevant information, what to collect and/or preserve, and how that information should be verified.[80] The section on reporting, communication, and use focuses on maximizing survivor control over the use and communication of content, honoring various privacy considerations, and ensuring accuracy at all times, ranging from internal team communications to displays in the courtroom to sharing information publicly.[81]

During the review process, satisfying the dual audiences was a challenge. In general, traditional investigators of SCRSV felt that the sections on sexual violence were less helpful since that information was already widely known in their circles, while they tended to find the digital investigation pieces more interesting. Many digital investigators felt the opposite (as one reviewer stated privately, "why recreate the Berkeley Protocol when everyone already knows it?"). The drafters ultimately created a resource that intends to provide something of value for each community and ideally helps break down barriers between these areas of practice.

Given the multiple audiences, a number of caveats had to be frontloaded, including a clear articulation of context and scope. The combined audience is actually quite broad: the Guide is meant to be a resource for all investigators, whether paid or unpaid, whether looking for evidence of SCRSV or not. The document also opens with a series of warnings, strongly discouraging intentional investigation into SCRSV without appropriate training, preparation, and response protocols in place. The annexes at the end of the document define relevant terminology, as well as identify laws related to online child sexual abuse material (CSAM) and child sexual exploitation material (CSEM), given the extreme ethical and legal risks that arise from viewing, downloading, or transmitting sexual material involving children.

In April 2025, a pilot version of the Guide was released for global use and feedback. Resulting input will be integrated into a final Guide before the end of 2025, at which point it will be translated into a number of languages.[82]

III.   THE FUTURE OF ACCOUNTABILITY FOR SEXUAL VIOLENCE IN CONFLICT

The Guide reflects a deep need to think critically and constructively about the appropriate role of new and emerging technologies in helping shape the future of justice and accountability. How can legal practitioners ensure that legal

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[80]   *Id.* at 37–40.

[81]   *Id.* at 41–43.

[82]   *Id.*

processes remain survivor-centered and trauma-informed, especially as processes increasingly depend on digital tools, including AI-based tools? Human-machine partnerships will likely weigh heavily in the future, but the balance must never tip away from meeting the needs of survivors, even as digital investigators discover exciting new avenues for investigation. As the Berkeley Protocol warns, and as the former U.N. High Commissioner Michele Bachelet underscored at the protocol's launch, digital investigators must approach their work with humility.[83]

So how can a relationship between humans and machines be optimized? First, both traditional and digital open source investigators will benefit from training that helps turn principles into practice. Ideally, traditional investigators will gain proficiency in using digital resources and understanding the full breadth of ways that online information and other digital data can support SCRSV cases. Digital investigators will ideally gain a deeper understanding of legal and ethical considerations for appropriately handling SCRSV-related content, and a better understanding of the indicators that signal the presence of SCRSV-related information online. Judges' receptivity to such content is also an issue; unless judges trust the content and are confident in both machine-driven and tech-enabled processes, the deployment of digital tools is unlikely to reach its full potential. All investigators should mainstream digital methodologies in investigation planning, which requires wider awareness of the various ways and places that people share information online, whether on the surface, deep, or dark web. Advancing legal practice also requires an understanding of the types of authentication packages that must accompany digital open source evidence in order to maximize its value for court.

Second, given the often large quantities of data that are collected during digital open source investigations, machine-learning-based tools will need to be increasingly refined to help identify relevant content. This is an area with exceptional promise with regards to reducing human error and making the search for helpful information more effective. If one of the ways to better identify SCRSV is to know the indicators that suggest such crimes have occurred, how much progress might be made by training models on those variables? Machine learning processes are especially good at finding patterns in large datasets.[84] In some ways, with the necessary development, fine-tuning, and oversight by human experts from relevant professional fields, machines may prove even better than humans at identifying subtle variables, especially across large information repositories, and signaling to humans a particular incident is one where sexual and gender based violence likely took place.

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[83] *See Nuremberg at 75, supra* note 71, at 8:45-8:54 (noting "I welcome, in particular, its principles of humility, inclusivity and dignity"), https://perma.cc/L4TB-MKGA.

[84] *See, e.g.,* Ali Mannan Tirmizi, *Machine Learning vs. Predictive Analytics*, DATAVERSITY (Feb. 16, 2023) https://perma.cc/WY7C-ZY9U.

Large language models can also be trained to identify the coded terminology that frequently accompanies evidence of sex-based crimes. Object recognition tools may be used to mine large databases of videos and photos for relevant content far faster than humans, and in the process identify implicit and contextual evidence related to cases that humans might miss, as well as explicit content.[85] Machine learning tools can also make static documents optical character readable so that they can be searched[86] and can help to translate thousands of pages of foreign-language documents. Ideally, such systems and processes will be refined not only for highly visible crimes, but for those most difficult to prosecute (such as sexual violence), making the identification of relevant material more effective.

Finally, using machines may reduce the psychological burden on investigators, who often review large quantities of graphic or otherwise upsetting material. Machines can minimize the quantity of information they review, flagging such content to eliminate the risk of surprise, or even blurring especially graphic visuals by default. Of course, in order to strengthen the utility of such tools, developers will need to identify and consume large quantities of appropriate training data, a process that will likely require new public-private partnerships.

IV.   CONCLUSION

In the 2010s, the field of digital open source investigations was conceptualized as a "wild west," a new terrain where rules were just being established, norms being set, and relationships being formed. Perhaps inevitably, innovative practitioners with different bodies of expertise are increasingly migrating to that space.

But, as with any people from different backgrounds who hope to work together well, the investigators who collaboratively develop this field will need to patiently translate their various expertise to each other. All who interact will need a process for mutual learning, one that is characterized by mutual respect.

In today's world, the effective investigation and prosecution of SCRSV requires proficiency in gathering information from both offline and online sources. In 2024, then-U.S. Vice President Kamala Harris launched a "Dignity in Documentation Initiative," which was "designed to support survivor- and civil society-led efforts to investigate and document [conflict-related sexual violence]

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[85] For more on the ways in which digital content can provide implicit, explicit and contextual evidence of SCRSV, *see* Koenig, Ghaly and Levine, Merging Responsibilities, *supra* note 75.

[86] *See, e.g.*, *What is OCR (Optical Character Recognition)?*, AMAZON WEB SERVICES, https://perma.cc/JX8P-LHF6 (last visited Apr. 27, 2025) (explaining that OCR "is the process that converts an image of text into a machine-readable text format," providing the example that "if you scan a form or receipt, your computer saves the scan as an image file. You cannot use a text editor to edit, search or count the words in the image file. However, you can use OCR to convert the image into a text document" through the machine-driven process of making an image document optical character readable).

in line with the Murad Code."[87] Today, the Murad Code and Berkeley Protocol, as distant but living descendants of the Lieber Code, exist in parallel while collectively shaping the future of ethical investigative practice. The Open Source Practitioner's Guide reflects their coming together to create a next generation of investigations—a generation that ideally inherits the best of both of its progenitors. As the Guide matures with global input and support, it will hopefully become increasingly adept at fulfilling its mandate: helping to secure greater accountability for SCRSV while advancing the dignity of survivors.

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[87] *FACT SHEET: The Biden-Harris Administration's Actions to Address Conflict-Related Sexual Violence*, THE WHITE HOUSE (June 17, 2024), https://perma.cc/5HZV-TZNR / (last visited 8 Jan. 2025). Funded with a $10 million investment from the U.S. State Department, the program is designed to "support justice for survivors by promoting accountability for crimes punishable under international law." *Id.*