represented by the AAAS membership, as well as explorations of other emerging technologies, such as artificial intelligence and machine learning. As these and other technologies become increasingly widespread, great attention must also be paid to ensuring that they are applied in an ethical manner—an obligation that is all the more pressing when the applications involve the types of vulnerable populations that are often associated with human rights investigations. AAAS is dedicated to ensuring that this obligation does not go unheeded, through activities dedicated to exploring the impacts, both positive and negative, that may be associated with these powerful new tools, in order to better fulfill the mandate of our organization's motto: "Advancing Science, Serving Society."

NEW TECHNOLOGIES IN INTERNATIONAL CRIMINAL INVESTIGATIONS

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My current research looks at ways in which people and institutions are using technology to build the evidentiary record in international criminal litigation. In particular, I focus on the collection of, and reliance on, what I call user-generated evidence.[1] This is footage that an ordinary citizen—the user—records on their smartphone, in an effort to achieve legal accountability.[2]

The collection of user-generated evidence is a phenomenon that the American public has become increasingly familiar with through the Black Lives Matter movement, thanks to user recordings of police brutality. Yet the phenomenon is a global one; with smartphones in the hands of an estimated 2.5 billion users, user-generated evidence is being captured worldwide.[3] The United Nations is working to secure evidence captured by local actors, even in the absence of courts with jurisdiction over the crimes in question.[4] And organizations like the International Bar Association and the long-time video advocacy group, WITNESS, have now developed user-generated evidence applications ("apps") to enable users to record footage with sufficient metadata to satisfy evidentiary standards for authentication.[5]

The question of authentication is obviously a key challenge for digital evidence in an era when DeepFake technology enables even those with minimal technical skills to create forgeries that are undetectable to the lay eye.[6] But the authentication of evidence is hardly a new challenge;

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[1] *See* Rebecca J. Hamilton, *User-Generated Evidence*, 57 COLUM. J. TRANSNAT'L L. (forthcoming, 2019).

[2] I consciously refer to the ordinary citizen who records this footage as a (smartphone) "user" rather than as a "citizen" in order to not exclude users who are stateless or do not have citizenship in the locations where they are filming.

[3] *Number of Smartphone Users Worldwide from 2014 to 2020 (in Billions)*, STATISTA, *at* https://www.statista.com/statistics/330695/number-of-smartphone-users-worldwide.

[4] The International, Impartial and Independent Mechanism (IIIIM), established by the UN General Assembly in relation to the conflict in Syria, is collating user-generated evidence for use in future prosecutions.

[5] *See* Int'l Bar Ass'n, *Eyewitness V2 English Subbed*, VIMEO (June 15, 2017), *at* https://vimeo.com/221239794 ("As an initiative of the International Bar Association, we know the legal requirements for photos and videos to be admitted as evidence in court. Recognizing the immense risks eyewitnesses take we believe these efforts should never be in vain and potential evidence should always be admissible in a court of law."); Harlo Holmes, *Making Cameras Count*, YOUTUBE (Oct. 24, 2013), *at* https://www.youtube.com/watch?v=lzjoAdhAKWU (describing encryption and metadata features of the CameraV app that enable authentication).

[6] *See* Robert Chesney & Danielle Citron, *Deep Fakes: A Looming Crisis for National Security, Democracy and Privacy?*, LAWFARE (Feb. 21, 2018), *at* https://lawfareblog.com/deep-fakes-looming-crisis-national-security-democracy-and-privacy (describing DeepFakes as the "digital manipulation of sound, images, or video to impersonate someone or make it appear

moreover, it is one that those supporting the production of user-generated evidence are attuned to. The implications that flow from the widespread production of user-generated evidence, however, extend far beyond the obvious.

Like all technology, there is the potential for both a positive and negative narrative to unfold as individuals and organizations experiment with user-generated evidence.[7] The positive narrative begins with a baseline that recognizes that international criminal investigations are in trouble on at least two counts. First, there are a number of crime scenes that international investigators simply cannot access. Nearly a decade after the International Criminal Court (ICC) issued an arrest warrant for the Sudanese president based on crimes in Sudan's western region of Darfur, the Court's investigators still have not set foot in the area. And even when international investigators do get access to sites of atrocity, security challenges abound.[8] The net result has been a weakened evidentiary record that has helped derail some important trials at the ICC.[9] Against this troubling backdrop, user-generated evidence provides a potential solution: the access problem disappears if the local population, already present at the scene of the crime, is collecting evidence.

Second, international criminal investigations are facing a legitimacy problem, with an African Union-led critique of their imperialistic features.[10] Detractors argue that international criminal investigations are an "extractive industry," with Hague-based investigators flying into African countries to take evidence from the local population and then flying out again with little in-country follow-up.[11] Here, user-generated evidence offers the possibility of democratizing international criminal investigations by transforming them into a bottom-up process.

However, the attractive story of user-generated evidence as a tool that empowers local communities to hold perpetrators accountable in scenarios where access issues might otherwise make international justice unavailable, is far from inevitable. A negative narrative could unfold, if the risks that come with the collection of user-generated evidence by individuals—and the reliance on it by courts—are not properly accounted for.

In a forthcoming article, I synthesize the three main areas of risk that those who are seeking to rely on user-generated evidence need to address as a matter of urgency.[12]

USER-SECURITY

Evidence collection is a risky business; perpetrators would rather not have witnesses document their crimes. User-generated evidence enables international lawyers to obtain hard-to-access

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that a person did something—and to do so in a manner that is increasingly realistic, to the point that the unaided observer cannot detect the fake").

[7] *See generally* EVGENY MOROZOV, TO SAVE EVERYTHING CLICK HERE: THE FOLLY OF TECHNOLOGICAL SOLUTIONISM (2013).

[8] *See, e.g.*, Prosecutor v. Lubanga Dyilo, ICC-01/04-01/06-Rule68Deposition-Red2-ENG, Deposition of Witness 34-40 (Nov. 16, 2010), *available at* http://www.icc-cpi.int/iccdocs/doc/doc1298128.pdf.

[9] *See* Int'l Criminal Court, *Kenyatta Case*, *at* https://www.icc-cpi.int/kenya/kenyatta ("Charges withdrawn due to insufficient evidence."); Int'l Criminal Court, *Ruto and Sang Case*, *at* https://www.icc-cpi.int/kenya/rutosang.

[10] *See* Rebecca Hamilton, *The ICC, the African Union, and the UN Security Council Narratives and Counter-narratives*, *in* THE ELGAR COMPANION TO THE INTERNATIONAL CRIMINAL COURT (Margaret DeGuzman & Valerie Oosterveld eds., forthcoming 2019). Of course, this critique was simply the latest iteration of a long-standing critique of international law's imperialist tendencies. *See, e.g.*, U.O. Umozurike, *International Law and Colonialism in Africa*, *cited in* James T. Gathii, *Africa and the History of International Law*, *in* OXFORD HANDBOOK OF THE HISTORY OF INTERNATIONAL LAW 420 (Bardo Fassbender & Anne Peters eds., 2013).

[11] Dustin N. Sharp, *Human Rights Fact-Finding and the Reproduction of Hierarchies, in* THE TRANSFORMATION OF HUMAN RIGHTS FACT-FINDING 69, 78 (Philip Alston & Sarah Knuckey eds., 2016) (explaining how the term "extractive industry" is used by some critics of human rights fact-finding missions led by INGOs from the Global North).

[12] *See supra* note 1.

evidence at no risk to themselves. But what if the risk associated with evidence collection does not disappear, so much as get transferred—from professionals backed by an international court to individual users with no such institutional safety net? As has so often been the case with new technology, user-generated evidence may serve to merely replicate, rather than transform, existing power hierarchies.

BIAS

Bias is a problem for user-generated evidence in two distinct respects. First, smartphones are unevenly distributed between and within conflicts. As a result, user-generated evidence is necessarily unrepresentative of the existing pool of evidence regarding atrocity crimes. Trained investigators can mitigate this problem by seeking out other forms of evidence, but they first must be aware that the problem exists. Second, notwithstanding the common perception that "seeing is believing," cognitive science has established a well-documented set of visual biases that pervade our processing of visual material.[13] Lawyers and judges need to be aware of common cognitive errors as they work with a body of evidence that is increasingly visual in form.

INEQUALITY OF ARMS

The emergence of user-generated evidence apps arose against a backdrop of high-profile prosecution failures at the ICC. While the developers of these apps believe that their software would be as useful to the defense as the prosecution, there are more users interested in holding perpetrators to account than there are users concerned with the fair trial rights of defendants. As a result, the emergence of user-generated evidence risks exacerbating already significant problems regarding equality of arms between prosecution and defense in international criminal trials.[14]

Overall, the first movers in this space are all working hard to be thoughtful about how they are utilizing this technology. But while they are the first, they will not be the last—and there are limits to what self-regulation and trust in the good faith of private actors can deliver.[15] User-generated evidence is changing the landscape of international criminal investigations and opening it up to new actors in ways that may ultimately be beneficial, but nonetheless involve a significant degree of risk. The question for those relying on this evidence is what policies and procedures they should put in place, not only to mitigate against these risks, but also to ensure there is an entity responsible if—and likely, when—problems arise.

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[13] *See, e.g.*, G. Daniel Lassiter, *Illusory Causation in the Courtroom*, 11 CURRENT DIRECTIONS PSYCHOL. SCI. 204, 204 (2002) (citing to research done by Koffka in 1935, K. KOFFKA, PRINCIPLES OF GESTALT PSYCHOLOGY (1935), establishing the phenomenon of "illusory causation," which leads us to attribute an unwarranted degree of causal influence to the object or person we happen to be looking at.); *see also* Dan M. Kahan, David A. Hoffman & Donald Braman, *Whose Eyes Are You Going To Believe?* Scott v. Harris *and the Perils of Cognitive Illiberalism*, 122 HARV. L. REV. 837 (2009).

[14] *See, e.g.*, Charles Jalloh & Amy DiBella, *Equality of Arms in International Criminal Law: Continuing Challenges*, *in* THE ASHGATE RESEARCH COMPANION TO INTERNATIONAL CRIMINAL LAW-CRITICAL PERSPECTIVES 251, 251–87 (William Schabas, Yvonne McDermott & Niamh Hayes eds. 2013).

[15] *See, e.g.*, Todd Shields, Steven T. Dennis & Sarah Frier, *Senators Tell Facebook CEO the Days of Self-Regulation May End*, BLOOMBERG (Apr. 11, 2018).