

# BEYOND REASONABLE DOUBT

USING SCIENTIFIC EVIDENCE  
TO ADVANCE PROSECUTIONS  
AT THE INTERNATIONAL  
CRIMINAL COURT

23–24 OCTOBER 2012

Workshop Report

The Human Rights Center at the University of California, Berkeley, School of Law conducts research on war crimes and other serious violations of international humanitarian law and human rights. Using evidence-based methods and innovative technologies, we support efforts to hold perpetrators accountable and to protect vulnerable populations. We also train students and advocates to document human rights violations and turn this information into effective action.

Cover Photo: Serb tanks belonging to the VRS Drina Corp enter the town of Srebrenica on 11 July 1995. The take-over of the U.N. “safe haven” was filmed by the Serb journalist Zoran Petrović. Photo Credit: Gilles Peress.  
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# I INTRODUCTION

This report presents the major points of discussion from the workshop—*Beyond Reasonable Doubt: Using Scientific Evidence to Advance Prosecutions at the International Criminal Court*—which the Human Rights Center convened, in consultation with the Office of the Prosecutor of the International Criminal Court, on 23–24 October 2012 in The Hague.<sup>1</sup> The report includes recommendations prepared by the Human Rights Center based on the workshop proceedings and further discussions with representatives of the Office of the Prosecutor.

The goals of the workshop were two-fold:

- To promote an ongoing exchange of ideas, expertise, and strategies for the application of new and emerging scientific methods and technologies to judicial investigations of serious international crimes; and
- To expand the range of strategic and technological resources for investigators and prosecutors to use in pursuing accountability for such crimes.

Workshop participants included several representatives of the Human Rights Center and the International Criminal Court; experts in remote sensing, information technologies, digital and video evidence, sexual assault investigations, exhumations, clinical examination, DNA analysis, and forensic training; investigators and researchers from the United Nations High Commission for Human Rights and other international human rights organizations; and investigators and prosecutors from the International Criminal Tribunal for Rwanda, International Criminal Tribunal for the former Yugoslavia, Special Court for Sierra Leone, Special Tribunal for Lebanon, and the Extraordinary Chambers in the Courts of Cambodia. (See Appendix A for a list of participants.) At certain points during the discussion, the group went off the record.

The workshop consisted of three panels. The first panel—*Scientific Evidence at International Criminal Courts*—was comprised of representatives from the International Criminal Tribunal for the former Yugoslavia, International Criminal Tribunal for Rwanda, and the Extraordinary Chambers in the Courts of Cambodia. Speakers provided an overview of the use of scientific and forensic evidence at their particular tribunal, with a specific focus on types of scientific evidence, means of evidence collection and analysis, use of expert witnesses, significant challenges from the defense, reliance on scientific evidence in judgments, and lessons learned. (See Appendix B for the workshop program.)

The second panel—*Investigative and Research Methods of UN Commissions and Nongovernmental Organizations*—consisted of representatives from UN High Commissioner for Human Rights, Human Rights Watch, Amnesty International, Physicians for Human Rights, and Women’s Initiatives for Gender Justice. Speakers provided a general overview of the investigative and research methods used by their organizations,

<sup>1</sup> We wish to acknowledge the generous support of Humanity United, Oak Foundation, Open Society Justice Initiative, and the John D. and Catherine T. MacArthur Foundation.

including gaining access to crime scenes, training staff, interacting with local nongovernmental organizations, and developing the capacity to collect and analyze court-admissible evidence.

The third panel—*Types of Scientific Evidence*—consisted of representatives from the ICC, Physicians for Human Rights, Benetech, UNOSAT, American Association for the Advancement of Science, WITNESS, Special Tribunal for Lebanon, International Institute of Criminal Investigations, Netherlands Forensic Institute, Argentine Forensic Anthropology Team, and International Commission on Missing Persons, among others. Speakers described the development of particular scientific methods and their application in domestic and international jurisdictions, as well as an indication of their limitations and potential to improve in the future.

Speakers were asked to address six points:

1. **Expense:** What costs are involved in the application of a particular technology or method of investigation? Are costs for its application decreasing?
2. **Timeliness:** How much time is required to collect, verify, and analyze the evidence?
3. **Big Picture:** To what extent does a particular technology or method of investigation help explain the larger narrative of what took place? What is its potential to help triangulate testimonial, documentary, and physical evidence?
4. **Linkage:** How and to what degree does a particular technology or method of investigation provide “linkage evidence” bearing on the specific responsibility of the accused?
5. **Security:** What are the security concerns of a particular technology or method of investigation?
6. **Overcoming Costs and Security:** What new or emerging technologies could replace other forms of evidence, such as eyewitness testimony, that may be too costly or difficult to obtain in highly insecure situations?

## II BACKGROUND

Since the mid-1990s, a growing number of international and hybrid criminal tribunals—and since 2002, the International Criminal Court—have conducted large-scale investigations of genocide, crimes against humanity, and war crimes in more than twenty countries. These institutions have frequently relied upon information and assistance from a wide variety of sources including governments, journalists, peacekeepers, human rights researchers, forensic scientists, and intelligence specialists. While such cooperation has been beneficial, “there have also been many mishaps, misunderstandings, and missed opportunities. On numerous occasions, information that could potentially have been of great use to criminal cases was lost or was collected or preserved in a manner that made it unusable at trial.”<sup>2</sup>

In the meantime, a number of scientific and technological advances have improved the ability to document large-scale crimes with efficiency and precision. Yet, only in recent years have international criminal courts and other fact-finding institutions begun to embrace these innovations.

What follows is a brief overview of the use of scientific and forensic evidence<sup>3</sup> at several international criminal courts, as reported by the representatives of those courts at the workshop.

### International Criminal Court

Established in 2002, the International Criminal Court has jurisdiction over war crimes, crimes against humanity, and genocide as defined in the Rome Statute. At the time of the workshop, the Court had publicly indicted 30 individuals and proceedings had commenced against 24. Fourteen individuals had completed the critical pre-trial confirmation of charges hearing. Of these, the Pre-Trial Chamber had dismissed charges against four defendants because the judges did not find “sufficient evidence to establish substantial grounds to believe” that the accused committed the alleged crimes. Cases against three defendants from the Democratic Republic of Congo and one from the Central African Republic had advanced to trial. A verdict had been rendered in one case—that of Thomas Lubanga—and another involving two accused—Germain Katanga and Mathieu Ngudjolo Chui—were forthcoming.

While the use of scientific evidence was limited in the first two cases concerning the Democratic Republic of the Congo, the Court’s approach to scientific evidence has evolved over time. The Court’s use of scientific evidence has become more extensive and more diverse in its more recent investigations, such as those in the Central African Republic, Kenya, and Cote d’Ivoire. However, at the workshop, members of the

<sup>2</sup> See Maria Nystedt, Christian Axboe Nielsen, and Jan K. Kleffner, *A Handbook on Assisting International Criminal Investigations*, Folk Bernadotte Academy and Swedish National Defence College, Stockholm, 2011, p. 15.

<sup>3</sup> It is generally accepted that forensic science is the application of science to assess and analyze evidence to provide scientific information to matters litigated in a court of law. This report uses the term *scientific* (“scientific evidence,” or “scientific investigation”) interchangeably with the term *forensic*. For the purposes of this report, scientific evidence is considered to be physical, biological, and digital evidence. The term “scientific evidence” has been used in place of “forensic evidence” to emphasize that the evidence with which this report is concerned has a material quality—objects or images of objects—and can be analyzed by validated methods. See Keith Inman and Norah Rudin, *Principles and Practices of Criminalistics: The Profession of Forensic Science*. Boca Raton, FL: CLC Press, 2001, p. 15.

Office of the Prosecutor expressed concern about the Court's ability to increase or even sustain its current level of crime scene investigations and exhumations given the considerable challenges the Court faces gathering and analyzing such evidence. These challenges include securing and investigating crime scenes in conflict zones, obtaining the cooperation of states, funding limitations, and protecting the safety of victims and witnesses as well as Court staff. To overcome these challenges, Court prosecutors and investigators have begun to identify relevant and feasible technologies—such as remote sensing, cyber investigations, and digital and video analysis—that can contribute valuable evidence to its cases while reducing the security risk to investigators and potential witnesses. They also wish to explore ways in which they can better engage nongovernmental organizations and forensic institutes in evidence collection and analysis.

The International Criminal Court is certainly not alone in facing challenges in its use of scientific evidence. Representatives of other international criminal courts described similar obstacles as well as strategies for overcoming them.

### **International Criminal Tribunal for the former Yugoslavia**

Invoking its Chapter VII powers, the UN Security Council created the International Criminal Tribunal for the former Yugoslavia in May 1993 to prosecute war crimes, crimes against humanity, and genocide taking place during the conflicts in the Balkans in the 1990s. The Yugoslav Tribunal has charged over 160 persons. More than 60 have been convicted and more than 30 are in different stages of tribunal proceedings.

Since 1991, the Office of the Prosecutor has employed several major categories of evidence: expert testimony from military commanders and scientists; eyewitness evidence; forensic investigations, including crime scene analysis, exhumations and DNA analysis, photographic and video evidence; documentary evidence; insider evidence from subordinates who testified against their superiors; and interrogation of the accused. While the emphasis placed on some forms of evidence has evolved over the lifespan of the Tribunal—most notably with an increasing use of documentary evidence to link the accused with the crime—the Tribunal's use of forensic evidence in the form of exhumations and DNA identifications has been unmatched by other international tribunals.

To facilitate the use of forensic evidence, the Office of the Prosecutor established a small forensic unit and developed a roster of experts, including hand writing experts, crime scene investigators, pathologists, archaeologists, and anthropologists. Importantly, the Tribunal had a budget that allowed prosecutors to call on those experts at any time. The Office of the Prosecutor also benefited from a strong military mandate that served to secure crime scenes and protect investigators. That said, the Tribunal faced considerable difficulty in coordinating the work of the various experts called in to investigate and in standardizing the format of their work to ensure it was court admissible. In addition, prosecutors faced the challenge of managing the large quantities of information and potential documentary evidence, including official documents, videos, audio files, faxes, and financial and personal records.

## **International Criminal Tribunal for Rwanda**

Established in 1994 to investigate the Rwandan genocide and related violations of international humanitarian law, the International Criminal Tribunal for Rwanda has tried nearly 80 cases and, similar to the Yugoslav Tribunal, has begun implementing a completion strategy.

The Rwanda Tribunal's forensic investigations have focused primarily on the Kibuye and Kigali prefectures and were conducted by forensic scientists associated with Physicians for Human Rights. In these cases, the forensic evidence was used primarily to demonstrate the cause and manner of death, prove that the victims were not combatants, and establish the age and sex of the victims and the widespread nature of the crimes. The Tribunal faced many challenges in its collection and analysis of forensic evidence. Among the challenges were the cost of exhumations, which was not in the Tribunal's budget; lack of internal expertise at the court; limited intergovernmental cooperation; risk of re-traumatizing families by exhuming bodies; uncovering graves which had already been unearthed by family members searching for their loved ones; and lack of security. However, forensic evidence did help to secure convictions and counter revisionists' claims dismissing the genocide.

## **Extraordinary Chambers in the Courts of Cambodia**

Established in 2006 after prolonged negotiations between the Cambodian government and the United Nations, the Extraordinary Chambers in the Courts of Cambodia is a national court. It has a mandate to try senior leaders and those most responsible for genocide, crimes against humanity, serious war crimes, and other crimes under Cambodian law that were committed during the Khmer Rouge era, which lasted from April 1975 to January 1979. This time period puts the Court in the unique position of having to investigate crimes and crime scenes that are 30–40 years old.

The Court has examined many types of evidence to varying degrees. However, it has not pursued medico-legal evidence from mass graves sites. In April 2010, the co-investigating judges stated that “[I]t was highly unlikely that forensic exhumations would provide any additional evidence that would be conducive to ascertaining the truth, whether exculpatory or inculpatory, than that which is already on the case file.” As a result, the Court has relied heavily on documentary evidence, including lists of prisoners who were executed, photographs, and annotations written on “confessions” of prisoners by their torturers. The Documentation Center of Cambodia (DC-Cam) has also provided the Court with information on the location of hundreds of prisons and detention centers and thousands of mass graves across Cambodia.

### III MAJOR ISSUES

Workshop participants discussed how the International Criminal Court could improve its use of scientific evidence, and the potential for future coordination and collaboration between the Court and nongovernmental organizations, the United Nations, and forensic and scientific institutions (hereafter referred to as “fact-finding organizations” or “non-court actors”).

#### **Evidence Collection, Preservation, and Analysis**

- **Timeliness and Cost:** Workshop participants stressed that arriving as early as possible at crimes scenes and collecting evidence promptly can help ensure that evidence is not tampered with, degraded, or destroyed. Yet several factors have limited the ability of investigators at the International Criminal Court to gather evidence in a timely manner. These include legal impediments (such as the requirement that the Court can only assume jurisdiction once domestic jurisdictions have demonstrated their unwillingness or inability to prosecute particular crimes); operational challenges (including the need to balance security risks with the need for timely evidence collection); diplomatic considerations (which are automatically implicated when non-nationals enter a country to investigate criminal activity); and fiscal limitations. It is highly likely the Court will operate on a zero- to negative-growth budget for the next few years, even as its caseload expands.

Court personnel increasingly recognize that the Court will need to partner with non-court actors to overcome these constraints. The reality is that many fact-finding organizations arrive at scenes of international crimes long before Court prosecutors and investigators. In particular, human rights organizations are often in a better position to access such crime scenes in a timely and cost-effective manner than the International Criminal Court, particularly if they are already operating in the target country.

Aware of the constraints faced by the International Criminal Court, workshop participants noted that there was a critical need not only to improve coordination among fact-finding organizations but also to strengthen and expand cooperation between the Office of the Prosecutor and these organizations. For such collaborations to be most effective, prosecutors would need to communicate what is required of these institutions. This would include the development of Standard Operating Procedures (SOPs) on the collection, handling, and preservation of evidence to ensure admissibility and procedures for obtaining informed consent. Workshop participants further recognized a critical need for scientific and forensic expertise to be integrated into all stages of the Court’s investigations.

- **Remote Sensing and Satellite Imaging:** Several workshop participants spoke about remote sensing and satellite imagery as potential alternative methods for demonstrating various elements of the crimes. Remote sensing circumvents administrative barriers and security impediments, and minimizes risk to investigators while creating a permanent record of a crime scene or allowing a reconstruction of events over time. Additionally, relative to the cost of sending in investigative teams, remote sensing and satel-

lite imagery are economical ways to establish factual grounds for an accusation in a form that is easily understood in a courtroom setting.

- **Humanitarian Needs of Survivors vs. Evidentiary Needs of Tribunals:** Several presenters highlighted a tension that may arise between the humanitarian needs of families of the missing and the evidentiary needs of international criminal tribunals in the aftermath of mass killings. On one side are families who wish to know the fate of their missing relatives and, if they have died, to receive their remains for proper burial. This right is enshrined in the Additional Protocol I to the Geneva Conventions of 1949, which provides that families have the right to know the fate of their missing relatives.<sup>4</sup> On the other side are international criminal tribunals that are charged with investigating large-scale killings but may lack the resources or political will to undertake forensic investigations aimed at identifying *all* of the dead. Several workshop participants warned that the Office of the Prosecutor should not open a grave unless it is prepared to work with the cultural and personal needs of the families and has taken the necessary steps to ensure that all remains will be exhumed for the purposes of identification.
- **Social Media and Video Evidence:** Workshop participants discussed “the coming storm” of potential evidence from social media outlets. Such evidence could include photographs, videos, or messages posted on Facebook, YouTube, Twitter or other social messaging sites. While this increase in footage of potential crimes offers the Court an incredible opportunity to gather evidence, it also poses significant technological problems. The group agreed that the Court needs to consider how it will deal with the increasing volume of information and potential evidence captured on cell phones and other mobile devices, and how to verify the authenticity and integrity of photographs and videos uploaded to the Internet. To this end, the Court will need to work with outside experts to develop guidelines on the reliability and admissibility of social media and video evidence.

## Relations with Outside Fact-Finding Organizations

- **Outsourcing:** Workshop participants noted many potential opportunities for the Office of the Prosecutor to expand its interactions with other fact-finding organizations. At the same time, the group acknowledged that cooperation between the International Criminal Court and such organizations also poses challenges, particularly when their goals and mission do not fully align with those of the Court. Nongovernmental organizations, which often aim to expose international crimes in real time, tend to focus their investigations on crimes committed by State or non-State entities and are often, at least in the initial phase of an investigation, less concerned with the criminal liability of specific individuals.

By contrast, when international criminal courts investigate crimes, they focus their inquiries on two connecting levels referred to as the *crime base* (the events and actors present at or near the scene of the

<sup>4</sup> Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts, of 8 June 1977, Art. 32. Also see Eric Stover and Rachel Shigekane, “The missing in the aftermath of war: When do the needs of victims’ families and international war crimes tribunals clash?” *International Review of the Red Cross* 84:848 (2002): 845–866.

crime) and the *leadership structure* (the role of actors who may be far away from the crime scene but who are linked in some way to the commission of the alleged crimes).<sup>5</sup>

In many cases, the Office of the Prosecutor has submitted reports by fact-finding organizations as “evidence” to support their prosecutions, especially when other documentary and physical evidence has disappeared or has degraded before the Court investigators arrive in-country. However, Court judges have criticized this practice and have, at times, questioned or dismissed the reliability and probative value of such reports. This has led both Court and non-court actors to recognize an urgent need to explore whether researchers with fact-finding organizations might be trained to better support the Court’s evidentiary needs. At the very least, non-court actors might be instructed on ways to avoid inadvertently destroying critical evidence and/or tainting the testimony of potential witnesses.

While promising, such potential partnerships and trainings raise critical issues that must be carefully considered. The first is the need for non-court organizations to determine whether supporting the court’s evidentiary demands would compromise their own mandates. The traditional role of many human rights organizations is to document and publicize human rights and war crimes violations to encourage their end. How might that crucial role be compromised if they begin to work more closely with the International Criminal Court?

The same question will need to be addressed by local organizations that provide critical health and social services to survivors of serious international crimes. Such organizations often possess incriminating information about perpetrators of violent acts that could be helpful to the Court. Yet, in some situations, disclosing such information, even when informed consent issues are satisfied, could potentially endanger clients and, in turn, undermine an organization’s ability to provide services in the community. Understanding and finding effective ways to mitigate these risks will require careful deliberation.

When fact-finding organizations determine their work will not be compromised, they must then make sure they understand the Court’s technical needs. While many organizations already send the Court photos, videos, testimony and other crime scene “evidence” hoping to be helpful, their output is frequently inadmissible due to problems with chain-of-custody documentation, image angles, etc. However, relatively simple modifications can greatly increase the potential court-related value of such efforts. But this requires clear communication from the Office of the Prosecutor regarding its needs, and training as to the Court’s requirements.

Practical issues that fact-finding organizations may have to consider in order to make sure they help and don’t hinder the court’s efforts include 1) changes they might have to make to their fact-gathering methods; 2) the potential impact(s) of their activities on individuals, the court and non-court organizations; 3) considerations specific to the preservation of physical evidence; 4) issues regarding witness

<sup>5</sup> See Maria Nystedt et al, above note 2, p. 42. Nystedt and her co-authors note: “International crimes can perhaps be best understood as criminal activity on a large-scale in which many people are usually involved in committing or aiding and abetting the commission of crimes. Some people—the perpetrators—will actually commit crimes directly. Many others—perhaps even a larger group of people than the perpetrators—make the crimes possible. The category can include anyone from the politician who encourages ethnically motivated attacks to the construction workers who dig mass graves in order to hide the evidence of the crime. International criminal investigations aim to link these actors together in order to under the crimes and prosecute those responsible.” Also see Charles M. Alifano, “Fundamentals of Criminal Investigation,” Worldwide Law Enforcement Consulting Group, Inc., available at: <http://www.worldwidelawenforcement.com/docs/FUNDAMENTALS%20OF%20CRIMINAL%20INVESTIGATIONS.pdf>

protection; 5) confidentiality concerns (including the protection of valued or vulnerable sources in light of potential subpoenas),<sup>6</sup> and more.

- **NGO Orientation and Training:** Workshop participants suggested that outside fact-finding institutions, whether at the local or international level, could benefit from a series of seminars and trainings on the methods and procedures applied in criminal investigations of large-scale crimes. They noted the critical role local organizations, such as the Documentation Center of Cambodia, have played in collecting testimonial and documentary evidence during conflict and post-conflict situations. Such organizations would benefit greatly from basic criminalistics training in the collection and preservation of documentary and physical evidence, including establishing chain-of-custody. They also noted that researchers with local and international fact-finding organizations often are the first responders to arrive at crime scenes and may interview victims and witnesses in the course of their investigations. Thus, they could benefit from training in the procedural and ethical aspects of interviewing vulnerable individuals who, at some point in the future, may be called on to testify in court.
- **Coordinating Multiple Investigations:** Given the number of different organizations that may be conducting separate investigations of the same crime scene or incident (local and international nongovernmental organizations, governmental bodies, and in some cases the International Criminal Court), several workshop presenters noted that attention must be paid to the coordination of multiple simultaneous investigations to limit confusion or admissibility issues when the results of these investigations are brought before the Court. This would involve standardizing investigation and reporting methods across various organizations or groups of investigators.

## Internal Management and Analysis of Evidence

- **Use and Management of Information Technologies:** Representatives of all of the tribunals present at the workshop, including the International Criminal Court, mentioned the challenges they have faced in collecting, storing, and analyzing large quantities of information that could potentially be presented as evidence. This issue became particularly salient during discussion about the collection and management of evidence derived from digital items (computers, USB keys, external hard-drives, CDS, DVDs, etc.), social media, remote sensing, data mining, and other new and emerging information technologies. Workshop participants felt it was critical for prosecutors to develop an integrated and comprehensive database to better manage the large volume and quantity of evidence it receives. Such a high-density system should include sophisticated search and correlation functions.
- **Incorporating Scientific Expertise into Investigations:** Because scientific and forensic experts are best equipped to identify aspects of a case or situation that might benefit from scientific investigation, workshop participants agreed that there is a critical need for forensic and scientific expertise to be integrated at all stages of an investigation. The group discussed the potential for establishing a Scientific Advisory Board in the Office of the Prosecutor to advise prosecutors and investigators and keep them abreast of

<sup>6</sup> These questions were compiled from working notes created during the Human Rights Center's October 2012 workshop "Using Scientific Evidence to Advance Prosecutions at the International Criminal Court, and from Fiona McKay, *The Role of Human Rights NGOs in Relation to ICC Investigations Discussion Paper* (Human Rights First 2004).

recent developments in new and emerging technologies and scientific methods and procedures that could potentially enhance their collection, management, and analysis of evidence.

- **Scientific Evidence as Linkage:** One of the key points presenters were asked to focus on was the extent to which a particular technology or scientific method could provide “linkage evidence” bearing on the specific responsibility of the accused. While some participants felt that scientific evidence has been most effective at demonstrating that a crime took place, several workshop participants argued strongly that scientific evidence could be critically important in demonstrating linkage to the accused. Examples such as the distinctive rose pattern left by shells which can reveal the direction from which—and potentially by whom—they were launched, types of bullets, movement of bodies, and, in particular, forensic recovery of telephone or email activity were raised as tangible ways in which scientific evidence has been used in international criminal trials to demonstrate the responsibility of the accused.
- **Investigation of Sex Crimes:** Workshop participants discussed the difficulties of investigating cases of rape and other sexual offences. Documenting sexual violence is particularly challenging as (1) evidence of such crimes can degrade and disappear quickly; (2) sex crimes often take place in war and post-war settings where rape kits or trained clinicians are unavailable to perform medical examinations; and (3) victims are often fearful of reporting such crimes because of the stigma attached to them, or do so only after much time has elapsed. Moreover, physical examinations, including photographing injuries, can be potentially traumatic for some survivors.

Several presenters pointed out that there is great potential for the use of scientific techniques to investigate sexual violence. For example, when gathered over time and space, DNA evidence can demonstrate a pattern of systematic rape as part of a war strategy. The group also noted that the analysis of longer-lasting sources of DNA evidence (such as hair shafts without follicles) could potentially revolutionize sex crimes investigations in the future. Using scientific techniques to establish acts of sexual violence can also have the benefit of providing a “gendered lens” through which courts view the crimes they prosecute, demonstrating in stark terms that international crimes often involve sexual and gender-based violence.

## **Presentation of Evidence in the Courtroom**

- **Exposing Judges to the Potential of New and Emerging Scientific Methods and Technologies:** Workshop participants noted the importance of educating judges and other Court staff about the reliability of scientific methods and procedures and new and emerging technologies that have already been accepted in domestic jurisdictions. It was proposed that, whenever possible, the Court should convene workshops and/or seminars about new advancements in the fields of forensics and information-gathering technologies, including remote sensing, social media, and cyber investigations.
- **Establishing the “Big Picture”:** Because it can establish patterns over time and across vast distances, scientific evidence can provide judges with a richer understanding of events and their impact on war-affected populations. For example, traditional forms of medico-legal evidence such as clinical examinations and exhumations can help judges comprehend the human aspect of a case, while other forms such as satellite imaging or digital reconstruction of a crime scene can help judges gain a visual and conceptual understanding of the events in question.

## IV CONCLUSIONS AND RECOMMENDATIONS

Following the workshop, representatives of the Human Rights Center and the Office of the Prosecutor met to discuss potential next steps. The following conclusions and recommendations are derived from those discussions and the workshop proceedings:

- **Scientific Advisory Board:** The Office of the Prosecutor should establish a Scientific Advisory Board to advise prosecutors, investigators, and analysts about recent developments in new and emerging technologies and scientific methods and procedures that could potentially enhance the collection, management, and analysis of testimonial, documentary, and scientific/forensic evidence.
- **Scientific Response Unit:** The Office of the Prosecutor should consider ways to improve and upgrade the capacity of the Scientific Response Unit to conduct cyber investigations and process digital evidence. This could include hiring or contracting with a forensic expert in cyber investigations and digital forensics and/or obtaining such expertise through the “visiting professionals” program.
- **Salzburg Seminars on War Crimes Investigations:** Workshop participants discussed several potential opportunities for the Office of the Prosecutor to expand its interactions with other fact-finding organizations. To that end, the Human Rights Center, in partnership with the CITRIS Data and Democracy Initiative at the University of California, Berkeley, will seek funding to convene three two-day seminars at the Schloss Leopoldskron in Salzburg, Austria over the next two years.

While the October workshop was largely a stocktaking exercise of the range of scientific methods and technologies applicable to criminal investigations of international crimes, the Salzburg Seminars will focus more directly on (1) elucidating the operational aspects of future relationships between the International Criminal Court and non-court actors; (2) assessing and improving the probative value of evidence collected through social media, remote sensing, and cyber investigations; and (3) improving the capacity of the International Criminal Court and other fact-finding organizations to manage, analyze, and present evidence derived from electronic and digital information. Up to thirty participants will attend each session and will include scientists and technology experts, as well as representatives from the International Criminal Court, United Nations, national and international nongovernmental organizations, and state and private forensic institutes engaged in investigating violations of international humanitarian law.

The seminars will address three topics:

- **Field Methodologies: Guidelines, Ethics, and Risks:** Non-court actors—whether journalists, peacekeepers, human rights researchers, aid workers, or others—often witness war crimes and other violations of international humanitarian law or arrive soon after they have been committed. International and national fact-finding organizations can be particularly helpful to the work of international criminal courts and other justice and accountability entities. For information to be useful for Court prosecutors and investigators and to preserve its admissibility in court, the material must be handled and processed cor-

rectly from the time of collection until its transfer to the custody of court investigators. Mistakes made during this phase may not be possible to correct later.<sup>7</sup>

The first Salzburg Seminar will provide a forum for beginning a crucial dialogue between the International Criminal Court and fact-finding organizations about their role in collecting, handling, and providing potential evidence to the Office of the Prosecutor. Specifically, the seminar will bring together court and non-court actors to discuss (1) the factors that need to be considered when formalizing evidence-gathering activities involving the Court and non-court actors; (2) the ethical issues, including accepting information confidentially,<sup>8</sup> implicated by such partnerships; and (3) modifications to existing field methodologies and procedures, including consent forms, to maximize the reliability and admissibility of evidence gathered on the Court's behalf.

The Seminar's output will be a report that documents the issues, discussions, and conclusions that emerge during focused debate on these three topics. An additional output may be an outline for a protocol or set of guidelines (directed at non-court organizations and based on the Office of the Prosecutor's practical needs) that establishes a basic overview and structure for increased formalization of court/non-court relationships.

- **Documentary Evidence: Social Media, Remote Sensing, and Cyber Investigations:** From the Nuremberg and Tokyo trials to the present-day ad hoc and hybrid tribunals, as well as the International Criminal Court, judges have relied extensively upon documentary evidence in reaching their verdicts. Such evidence can include
  - *official documents* (e.g., situation reports, or "sitreps", military orders of battle, diplomatic cables);
  - *official log books* (e.g., shifts of prison guards and duty officers, equipment or vehicle logs);
  - *financial and personal records* (e.g., telephone and transport billing records);
  - *court files and prison records* (e.g., records pertaining to the detention and release of prisoners);
  - *photographs and audio-video recordings* (e.g., crime scenes, damaged infrastructure, combat activities);
  - *medico-legal reports* (e.g., autopsies and exhumations)
  - *remote sensing imagery* (e.g., troop and armed vehicle movements, destruction of villages); and
  - *electronic and Internet-based information* (e.g., social media traffic, telecommunications intercepts, call logs, and incriminating files retrieved from hardware such as phones, SIM cards, and computers).<sup>9</sup>

<sup>7</sup> See Maria Nystedt et al, above note 2, pp. 61–62.

<sup>8</sup> Article 54(3)(e) of the Rome Statute addresses the issue of accepting information confidentially and protecting the confidentiality of the provider. But "the Rome Statute also requires that all potentially exonerating facts must be disclosed to the defence. In practice, this results in situations in which the obligation of the prosecutor to disclose information to the defence overrides whatever assurances of confidentiality the prosecutor has given." This can be a complex issue for fact-finding organizations particularly if they have given an assurance of confidentiality to an individual and realize later that information derived from the interview could provide the prosecution or defence with a critical piece of information. *Ibid*, p. 60. These are the sorts of issues that will be addressed at the seminar.

<sup>9</sup> For a more complete list see Maria Nystedt et al, above note 2, pp. 62–63.

In recent years, international criminal courts and fact-finding organizations have increasingly turned to social media, remote sensing, and, to a lesser degree, cyber investigations (i.e., using information communications technologies, as described in the last bullet point above) to expose violations of human rights and international humanitarian law. Yet, so far, there has been little discussion about the reliability and probative value of such evidence in the context of serious international crimes.

Using a case-study approach, participants in the second Salzburg Seminar will discuss the reliability and probative value of crime-based or linkage evidence collected through social media, remote sensing, and cyber investigations. Specifically, the seminar will bring together court and non-court actors to (1) examine the state-of-the-art of each of these modes of information sharing and retrieval, as well as ways of testing<sup>10</sup> and improving their reliability and probative value; (2) present specific case examples, followed by a discussion of their evidentiary value from the perspectives of both the prosecution and defense; and (3) draft a set of minimum standards and procedures to help guide fact-finding organizations in the collection and analysis of such information so as to improve its evidentiary value in court proceedings and other transitional justice mechanisms.

- **Information Technologies and Management: Data Storage, Organization, and Presentation:** Information technologies have revolutionized how we gather, store, and manage vast quantities of information. Indeed, governments and armed forces are now highly dependent on electronic systems and communications, which provide an excellent source of information for war crimes investigators. At the same time, the sheer volume of such information can overwhelm the storage, management, and discovery capacities of international criminal courts and fact-finding organizations and, in some cases, create problems for such institutions if confidential information is collected illicitly or has been tampered with by a provider or intermediary.<sup>11</sup> Moreover, both prosecutors and human rights researchers face the daunting task of presenting—whether in court proceedings or to the general public—vast amounts of complex data in creative and accessible ways.

Participants in this final Salzburg Seminar will examine ways of improving the management, analysis, and visual presentation of evidence derived from electronic and digital information. Specifically, the seminar will bring together court and non-court actors, including information management specialists, to discuss the following topics:

- (1) archival preservation of documentary evidence, from paper-based files to floppy disks, USB drives, DVDs, etc.;
- (2) organization, storage with back up systems, and triangulation of different kinds of data (e.g., text, audio, video, and satellite and drone imagery);
- (3) chain-of-custody considerations;
- (4) file sharing between prosecution and defence;

<sup>10</sup> Demographers and statisticians have techniques to test the quality of data taken from census, surveys, and administrative reporting systems, but such procedures are still in their infancy when it comes to new and emerging technologies. See Herbert F. Spirer and William Seltzer, “Obtaining Evidence from the International Criminal Court Using Data and Quantitative Analysis,” in J. Asher et al., *Statistical Methods for Human Rights* (New York/Heidelberg: Springer, 2008), pp. 195–226.

<sup>11</sup> See, for example, Maria Nystedt et al, above note 2, pp. 62–63.

- (5) new methods for data mining and translation using natural language processing and machine learning techniques; and
- (6) visual presentation.

The Seminar's output will be a report that documents the issues, analysis and conclusions that emerge from the workshop discussion. An additional output may be a concept paper describing a "Visiting Professionals" program whereby data management specialists spend time, either in person or through video-conferencing, with fact-finding organizations and the International Criminal Court to help improve their capacity to manage, analyze, and present data.

Feed back from participants indicated they felt the initial workshop was a valuable stocktaking exercise. A series of follow-up meetings on the topics described above could enhance the Court's effectiveness in using new scientific methodologies to achieve its mandate of bringing greater accountability for serious violations of international humanitarian law.

# APPENDIX A

***Beyond Reasonable Doubt***  
**Using Scientific Evidence to Advance**  
**Prosecutions at the International Criminal Court**  
**23–24 October 2012**

## WORKSHOP PARTICIPANTS

This list of participants does not include the numerous OTP staff who also attended the workshop as observers.

**XABIER AGIRRE** is Senior Analyst, Office of the Prosecutor, International Criminal Court.

**CECILE APTEL** is the Senior Legal Policy Adviser in the Executive Direction of the Office of the High Commissioner for Human Rights and Associate Professor of International Law at Tufts' Fletcher School of Law and Diplomacy.

**GLORIA ATIBA-DAVIES** is Head of the Gender and Children Unit, Office of the Prosecutor, International Criminal Court.

**ERIC BACCARD** is Forensic Coordinator, Head of the Scientific Response Unit, Office of the Prosecutor, International Criminal Court.

**FREDERICO BORELLO** is Director of Investments at Humanity United.

**PETER BOUCKAERT** is Emergencies Director at Human Rights Watch.

**LARS BROMLEY** is Principal Analyst and Senior Advisor at the UN Institute for Training and Research/ Operational Satellite Applications Programme (UNITAR/UNOSAT).

**SARAH CRISCITELLI** is Deputy Prosecution Coordinator, Office of the Prosecutor, International Criminal Court.

**ALISON COLE** is the Legal Officer for International Justice at the Open Society Justice Initiative.

**CAMILLE CRITTENDEN** is Executive Director of the Data and Democracy Initiative, CITRIS, University of California, Berkeley. (Co-Chair)

**MICHEL DE SMEDT** is Head of Investigations, Office of the Prosecutor, International Criminal Court.

**SCOTT EDWARDS** is Managing Director of Crisis Prevention and Tactical Response at Amnesty International, based in Washington DC.

**MARKUS EIKEL** is Investigation Team Leader, Office of the Prosecutor, International Criminal Court.

**ELIZABETH EVENSON** is Senior Counsel in the International Justice program at Human Rights Watch.

**LUIS FONDEBRIDER** is President of the Argentine Forensic Anthropology Team (EAAF).

**SAM GREGORY** is Program Director at WITNESS.

**VINCENT IACOPINO** is Senior Medical Advisor at Physicians for Human Rights (PHR) and Adjunct Professor of Medicine with the University of Minnesota Medical School.

**BRIGID INDER** is Executive Director of the Women’s Initiative for Gender Justice and Special Advisor for Gender to the Prosecutor of the International Criminal Court.

**ALEXA KOENIG** is Executive Director of the Human Rights Center, School of Law, University of California, Berkeley.

**XAVIER LAROCHE** is the Forensic Coordinator for the Special Tribunal for Lebanon.

**OLE LEHTINEN** is Investigation Team Leader, Office of the Prosecutor, International Criminal Court.

**JAMES LOGAN** is Program Officer at the Oak Foundation.

**DALE LYSAK** is Assistant Prosecutor, Office of the Co-Prosecutors, Extraordinary Chamber in the Courts of Cambodia.

**HOLO MAKWAIA** is Senior Appeals Counsel, Office of the Prosecutor, International Criminal Tribunal for Rwanda.

**DONNA MCKAY** is Executive Director of Physicians for Human Rights (PHR).

**PEGGY O’DONNELL** is a Researcher at the Human Rights Center, School of Law, and a Ph.D. candidate, Department of History, University of California, Berkeley.

**CRISTIÁN ORREGO** is Director of Forensic Projects at the Human Rights Center, School of Law, University of California, Berkeley.

**IRENE O’SULLIVAN** is International Forensic Advisor/Scientific Support Coordinator at the Netherlands Forensic Institute.

**THOMAS PARSONS** is Director of Forensic Science at the International Commission on Missing Persons (ICMP).

**JONATHAN PONTING** is Head of Planning & Operations Section, Office of the Prosecutor, International Criminal Court.

**MEGAN PRICE** is a Senior Statistician at Benetech Human Rights Program (HRP).

**JOHN RALSTON** is Executive Director of the Institute for International Criminal Investigations (IICI).

**BOB REID** is Chief of Investigations, International Criminal Tribunal for the former Yugoslavia.

**CHEN REIS** is Clinical Associate Professor and Director of the Humanitarian Assistance Program, Josef Korbel School of International Studies, University of Denver.

**CRISTINA RIBEIRO** is Investigation Coordinator, Office of the Prosecutor, International Criminal Court.

**KIM THUY SEELINGER** is Director of the Sexual Violence and Accountability Project at the Human Rights Center, School of Law, University of California, Berkeley.

**PATRICIA SELLERS** is an international criminal attorney, and a Visiting Fellow at Kellogg College of Oxford University, and a professor of international law.

**ERIC STOVER** is Faculty Director of the Human Rights Center and Adjunct Professor of Law and Public Health, School of Law, University of California, Berkeley. (Co-Chair)

**BUKENI WARUZI** is Program Manager, Africa and the Middle East, at WITNESS.

**ALEX WHITING** is Prosecution Coordinator, Office of the Prosecutor, International Criminal Court.

**SUSAN WOLFINBARGER** is Project Director at the American Association for the Advancement of Science.

**SABINA ZANETTA** is Forensic Officer, Scientific Response Unit, Office of the Prosecutor, International Criminal Court.

# APPENDIX B

***Beyond Reasonable Doubt***  
**Using Scientific Evidence to Advance**  
**Prosecutions at the International Criminal Court**  
**23-24 October 2012**

**PROGRAM**

**Tuesday, 23 October**

- 9AM     *Introductions*
- 9:15     *Welcome* (Michel De Smedt, Head of Investigations, Office of the Prosecutor, International Criminal Court)
- 9:30     *Workshop Objectives* Eric Stover & Camille Crittenden, Co-Chairs
- 9:45     *ICC: Role of the Office of the Prosecutor and Investigations Division: What Constitutes Court-Admissible Evidence?* (Alex Whiting and Eric Baccard)
- 11AM     Coffee break
- 11:15     *Human Rights Center Working Paper: Using Scientific Evidence to Advance Prosecutions at the International Criminal Court* (Peggy O'Donnell)
- 12:30     Lunch
- 1:30     *Evidence Collection and Analysis at International Criminal Courts*
- International Criminal Tribunal for the former Yugoslavia (Bob Reid, Chief of Investigations)
  - International Criminal Tribunal for Rwanda (Holo Makwaia, Senior Appeals Counsel)
  - Extraordinary Chambers in the Courts of Cambodia (Dale Lysak, Assistant Prosecutor)
- 3:30     Coffee break
- 4PM     *Investigative and Research Methods of the Office of the High Commissioner for Human Rights and Non-governmental Organizations*
- Office of the High Commissioner for Human Rights (Cecile Aptel)
  - Human Rights Watch (Peter Bouckaert)
  - Amnesty International (Scott Edwards)
  - Physicians for Human Rights (Vincent Iacopino)
  - Women's Initiatives for Gender Justice (Brigid Inder)

6PM Adjourn

### **Wednesday, 24 October**

9AM *Types of Scientific Evidence*

- Exhumations (Luis Fondebrider, Argentine Forensic Anthropology Team)
- DNA Analysis/Identification (Tom Parsons, International Commission on Missing Persons)

10AM *Types of Scientific Evidence*

- Clinical Examination (Eric Baccard, ICC)
- Physical and Psychological Sequelae of Torture (Vince Iacopino, Physicians for Human Rights)
- Sexual Violence (Patricia Sellers, international criminal attorney)

11AM Coffee break

11:15 Continued: Baccard, Iacopino, and Sellers

12:15 Lunch

1:15 *Types of Scientific Evidence*

- Sexual Violence and Evidence-Gathering Methods (Chen Reis, University of Denver)
- Databases (Megan Price, Benetech)

2:15 *Types of Scientific Evidence*

- Satellite/Remote Sensing (Lars Bromley, UNOSAT and Susan Wolfenbarger, American Association for the Advancement of Science)
- Digital and Video Evidence (Sam Gregory, WITNESS)
- New Forensic Techniques in International Investigations (Xavier Laroche, Special Tribunal for Lebanon)

3:15 Coffee break

3:30 Continued: Bromley, Wolfenbarger, Gregory, and Laroche

4:30 *Extending the Resources of the Court: Outside Expertise and Training*

- International Institute of Criminal Investigations (John Ralston)
- Netherlands Forensic Institute (Irene O'Sullivan)

5:30 General Discussion and Recommendations

6:15 Adjourn

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