

Open Source Intelligence as Critical Pedagogy; Or, the Humanities Classroom as Digital Human Rights Lab

Jason Parry

Interdisciplinary Humanities

Cite this paper

Downloaded from [Academia.edu](#) 

[Get the citation in MLA, APA, or Chicago styles](#)

Related papers

[Download a PDF Pack](#) of the best related papers 



[FLEFF 2016 | Interface/Landscape](#)

Dale Hudson

[Advanced Sciences and Technologies for Security Applications From Strategy to Implementation](#)

[Studies in Art Education A Journal of Issues and Research Posthumanist Movement Art Pedagogy: G...](#)

Ryan Patton

Open Source Intelligence as Critical Pedagogy; Or, the Humanities Classroom as Digital Human Rights Lab

Jason Rhys Parry
Purdue University

If you enter the phrases “Arun Ferreira” or “Hernán Bedoya” into an online search engine, chances are you will come across Wikipedia pages for two activists—one recently imprisoned, one recently assassinated. These pages are the result of a class I taught in the fall of 2018, wherein my students and I compiled and verified information on a worldwide crackdown on activists protesting land grabs and environmental degradation. This pedagogical project involved research in foreign languages, reaching out to local NGOs and journalists, and, in the case of Bedoya, making contact with the family of the deceased. Conflicting reports regarding, for example, the number of bullet wounds suffered by Bedoya or the early life of Ferreira—an imprisoned cartoonist relatively unknown outside his home country—required making tough decisions about what to believe and which sources to trust. By virtue of collecting this information and making these decisions, the students effectively became investigative reporters. Moreover, by publishing this information online, in a forum open to everyone, they produced a public record of these human rights violations with links to available sources.

The course was inspired by recent work in the field of open source intelligence (OSINT). While a great deal of contemporary theory has criticized the emergence of new regimes of surveillance made possible by smartphones and the Internet of Things, insisting that we are experiencing novel systems of “dataveillance” under “surveillance capitalism,” journalists and activists using OSINT methods have exploited these same sources of digital data to collect and curate verified evidence of state-sponsored atrocities.¹ As the forensic architect Eyal Weizman says, such practices constitute inversions of the standard “forensic gaze,” through which the state seeks out criminals using advanced technologies.² Here, it is individuals appropriating the same tools of ubiquitous surveillance to gather evidence of criminal state behavior. It is certainly possible to overstate the symmetry produced by this inversion, however; after all, one side still has all the cops and armies. Nevertheless, the use of OSINT as a methodology for grassroots human rights investigations

showcases the possibilities for what Steve Mann calls “sousveillance,” or surveillance from below.³

But what is OSINT? The phrase refers to intelligence gleaned from publicly available, rather than clandestine, sources. As such, it is distinct from more traditional espionage, though these two varieties of intelligence are frequently pursued by intelligence agencies in tandem. Perhaps the most significant aspect of contemporary OSINT collection, however, is the low barrier to entry. The tools used to conduct open source intelligence are free and easily available online. Moreover, the digital evidence covered by OSINT has recently crossed a legal benchmark: in 2017, Mahmoud Al-Werfalli was indicted by the International Criminal Court for participating and overseeing mass killings in Libya based solely on the basis of videos posted to social media sites. Al-Werfalli’s indictment sets a precedent for the use of OSINT in international tribunals that reflects the prominent role of digital technologies in mediating contemporary conflicts.⁴ OSINT techniques have begun to revolutionize the practice of human rights fact-finding by dramatically increasing the number of potential witnesses and investigators.

What is missing, however, is widespread literacy in OSINT. In this essay, I show how OSINT functions as a mode of interdisciplinary pedagogy that not only draws on classic skills promoted in the humanities classroom, including the analysis and interpretation of texts and images, but also grounds these skills in an environment of ethical and political urgency. Moreover, by training students in OSINT techniques, educators empower students to navigate the online platforms that have emerged as the primary axes of ongoing discussions about the post-truth era and the phenomena of fake news.

The capacity of OSINT to function as a bulwark against the spread of disinformation has been explored by innovative journalism outlets such as Bellingcat and the New York Times’ Visual Investigations team. Moreover, agencies such as Forensic Architecture, Amnesty International’s Digital Verification Corps, and the BBC’s Africa Eye division have all collected and curated substantial evidence of human rights abuses using open source methods. Numerous guides are available online that instruct would-be human rights investigators in the use of OSINT tools.⁵ Here, I will highlight how using two such techniques in the classroom simultaneously allows students to participate in a field typically reserved for specialists and also creates a space for new applications of more traditional methods of humanistic teaching.

One technique used in open source investigations is reverse image searching. Using online services such as TinEye or Amnesty International’s YouTube DataViewer, users can discover the histories of digital images—either stills or video thumbnails. These tools can alert users to the possibility that an old image or video is being recycled and rebranded as depicting a more recent event. In my class, I showed screenshots of dozens of tweets that featured nearly identical text and were accompanied by the same image. The oldest extant tweet to use this combination of text and image was posted by the user @QuotePsychology on March 9, 2018. The text reads: “Amazing

photo says it all. A 100,000-dollar American missile, launched by a 20 million-dollar plane that flies at a cost of 6000 dollars/hour to kill people who live on less than \$1 a day in Yemen.”⁶ Accompanying this text is a dramatic picture that shows a bomb falling toward a cluster of white buildings while several people in the foreground are shown running away.

Using TinEye’s free reverse image search tool, I showed students how the image’s authenticity could be verified. After uploading the image, a search produced 198 similar results. By adjusting the search filter to show the oldest appearance of the photo online, we were able to see that the photograph had been circulating as far back as 2008, a full decade before the tweets had appeared. By comparing the oldest archived photo with the one embedded in the tweets it was clearly evident that the photo used in the tweets had been significantly cropped. Searching the older, more complete photograph with the same TinEye tool revealed additional search results that had not appeared in the earlier search. Furthermore, with the additional results came additional search filters, and I selected the options to display only “stock and collection results.” Several links to Getty Images appeared, and the first of these revealed the details of the photograph. It was in fact taken in the Nusseirat Refugee Camp in 2008 by the photographer Mahmud Hams. That same year, in recognition of the power of this image, Hams was a finalist for the Pulitzer Prize in Breaking News Photography.

At this point, it was clear that the tweets were at least partly false. The image did not depict people running from a missile in Yemen, but in the Gaza Strip. But did this inaccuracy, we asked, completely undermine the larger point articulated by these tweets? Could we, at this stage, simply label the tweets “fake news” and move on?

First, I asked the students if they thought the tweets should be viewed as examples of misinformation (accidental falsehoods) or disinformation (deliberate ones)? In an attempt to answer this question empirically, the students trawled through the comments on these tweets and discovered that multiple other users had also noticed the mischaracterization of the image and commented to that effect. In response to comments indicating the actual location depicted in the photograph, the posters of the image generally responded that they had not known that it was taken in Gaza, not Yemen; but, nevertheless, many insisted that the larger claim articulated by the tweet—that expensive weaponry manufactured in the Global North was unjustly being put to use to kill members of an impoverished population—was still accurate. The user @_amroali claimed that

[p]eople debating whether the photo is from Yemen or not are missing the point. Do you need to see more images of thousands of injured, dying & dead Yemenis, destruction of ancient buildings, weapons in action, western complicity etc to realise the scale of this catastrophe?⁷

After seeing several similar responses, it seemed fair to say that a substantial number of the users tweeting this information had not realized they were misrepresenting the image.

Nestled within the question posed by @_amroali in defense of his use of the image, I sensed there were several more general questions to be asked about rhetorical ethics: To what degree are we responsible to check the validity of the information we spread? Is mischaracterization morally permissible when it occurs in the course of advocating for a stance one believes is morally right? And, for that matter, to what extent does the presence of pieces of misinformation in a message invalidate the entirety of that message?

In order to determine the validity of the textual component of the tweets, I asked the students to engage in a fact-checking activity. While divided into groups, students were asked to find evidence that American-made missiles were being used in Yemen. Google searches immediately turned up multiple articles by major news agencies demonstrating that this was indeed the case. As many students had not even been aware that a conflict was occurring in Yemen, the discovery that the American government was facilitating the conduct of this war was surprising and a source of subsequent questions about American foreign policy. One student suggested that if the intention of the tweets was to raise awareness about a conflict that has not received a great deal of media attention, then they were successful—irrespective of the inaccurate characterization of the photograph.

The process of reverse image searching thus served as a prelude to a discussion about rhetorical ethics and the nature of truth. We considered how the label “fake news” implies a monolithic judgment that may not always be useful. Frequently, statements can contain truthful components and false ones, and fact-checking is most helpfully performed at this more granular level. Several students admitted that they themselves did not always double-check the validity of every detail of a post before they shared it on social media. TinEye thus presented a user-friendly way to help them judge the reliability of information online.

Another technique explored in the class was geolocation. While reverse image searches can help locate the appearance of a photograph in time, geolocation can help locate a photograph or video in space. Using digital maps composed of satellite imagery, it is sometimes possible to determine the area depicted in a video or photograph. A video posted by the Russian-backed news agency Ruptly to YouTube on September 18, 2018, titled “Yemen: Historic Hodeidah site destroyed in clashes,” served as the basis for our geolocation exercise.⁸ I first saw the video when it was posted to Ruptly’s Twitter account; and, it should be said that for educators wishing to incorporate OSINT in the classroom, Twitter is often an invaluable resource.

In the video, shaky handheld footage shows the twisted remains of an arch over a highway. The first step toward geolocating the video involved asking students to identify landmarks—buildings, trees, signs—that might be visible to satellites in space. I told them that publicly available satellite imagery in the

United States has a legally imposed resolution limitation of 30 centimeters per pixel, meaning that objects smaller than this will most likely not be visible on satellite images.⁹ Accordingly, I asked them to point out features in the landscape that would be large enough to cross this sensory threshold. We paused the video at the twenty-four-second mark, which provided us with a broad view of the scene, and began to identify salient features. The ruined arch is itself quite distinctive, and it stretches over a road that is at least two lanes wide with a median dividing the traffic lanes. A large sign remains untouched to the left of the arch, and, in the background, it is possible to see a building resembling a warehouse with a distinctive blue roof.

The next stage involved drawing a representation of what the scene might look like from a satellite's point of view. Using the dry erase board in the room and taking directions from the students, I started to create a schematic depiction of the scene. Once this was completed, it was time to turn on Google Earth. I brought up the satellite view of Hodeidah and asked the students where they thought the arch might be located. One student pointed toward a highway running through the center of the city towards the eastern outskirts. The highway was labeled "Sanaa Road." Others agreed that it would make sense for a large arch to straddle what appeared to be the primary entrance to the city. With this in mind, we zoomed into Sanaa Road and followed it eastward. The traces of the ongoing conflict were numerous. Barricades had been constructed every half-mile or so, and buildings on both sides of the road were collapsed or showed signs of damage. After scrolling along the map for some time, we eventually saw an arch. Next to it was a warehouse with a blue roof on which the letters UNHCR were painted in white. We compared the satellite image with both the drawing on the board and the still from the video. It appeared to be a match.

Besides verifying the location of a recent video posted from a warzone, the exercise also functioned to cultivate literacy in new media forms. In our discussion of the limitations on the resolution of publicly available satellite images, we saw how certain areas, including Israel/Palestine and various military facilities, were of lower resolution than the surrounding regions. I pointed out that these restrictions are often the result of legislation or back-channel negotiations between Google and state governments.¹⁰ Although many students had appeared to consider Google Earth as a seamless and transparent representation of an objective reality, this exercise showed how the platform is in fact frequently distorted by geopolitical forces.

Moreover, the process of reading the original video for notable features that could be seen from orbit involved developing a new sensitivity to landscape—a new literacy in remote sensing that demanded that we imagine the space-based perspective of a sophisticated machine sensing apparatus. I posed the question: what does a war crime look like from outer space?¹¹ To answer this, we explored the other ways in which Google Earth could be mobilized to produce evidence of human rights violations. Using the "show historical imagery" function, which allows users to select between images of

the same location captured at different times, I showed how the images of the port in Hodeidah testified to the success of the Saudi-led blockade of Yemen. The satellite image dated November 2, 2017 shows hundreds of containers stacked in the port and several large cargo ships moored to the docks. In later images, the containers and ships have nearly all disappeared. Although it is impossible at this resolution to see individual humans, the disappearance of cargo at the port is a telling index of the widespread starvation and deprivation being inflicted on the Yemeni people.

In conclusion, it is worth considering some precautions to take before encouraging students to engage in OSINT collection and verification. Despite the advantages of open source investigations, they also raise questions about the pedagogical ethics of exposing students to violent images. While trawling social media for videos from conflict zones, it is quite likely that one may come across images depicting extreme suffering and destruction. Open source investigators are liable to experience “vicarious trauma,” a condition stemming from the fact that

[v]iewing traumatic images of death, destruction, blood and unimaginable horrors all day every day—often for years on end—is now an integral part of the daily work of many desk-bound staff working for news, human rights and humanitarian organizations who are often located thousands of miles away from where the actual horrors occur.¹²

Verifying digital evidence may require sorting through high volumes of content generated by users living in conflict zones. Exposure to such violent images can have psychological consequences that those undertaking open source investigations, or training students in the ability to conduct their own, must take steps to mitigate.

Accordingly, the training of students in the application of open source web tools to human rights issues should always be accompanied by training in strategies for lessening the potential for experiencing vicarious trauma. Fortunately, helpful guides published by open source investigators outline simple steps would-be investigators can take in order to protect themselves. Turning off audio, for example, has been found to lessen the psychological impact of shocking footage. Frequent breaks taken in the course of collecting and verifying footage can also relieve the stress of witnessing images of violence.¹³

Provided that students are equipped with strategies for managing the potential psychological impact of OSINT collection, the practice offers a possible model for future humanities classrooms. Not only do these exercises lend themselves to discussions of the politics of new media platforms and the sociology of technology, they also broach more general philosophical questions regarding the nature of truth and the uses of rhetoric. Moreover, these techniques can serve as the basis for collaborative and creative

assignments that not only give students practice in verifying media sources, but also democratize the process of documenting and publicizing ongoing human rights abuses. The promise of OSINT for the humanities classroom, in other words, is the possibility of a pedagogical model that simultaneously encourages active digital citizenship and creates a space for theoretical discussions that allow students to reflect on their own digital conduct.

Notes

¹ On dataveillance: Rita Raley, “Dataveillance and Countervailance,” in *“Raw Data” is an Oxymoron*, ed. by Lisa Gitelman (Cambridge: The MIT Press, 2013), 121–146. On surveillance capitalism: Shoshana Zuboff, *The Age of Surveillance Capitalism: The Fight for a Human Future at the Frontier of Power*. New York: Public Affairs, 2019.

² Eyal Weizman, “Introduction: Forensis,” in *Forensis: The Architecture of Public Truth*, ed. by Forensic Architecture (Berlin: Sternberg Press, 2014), 11.

³ Steve Mann, “Sousveillance: Inverse Surveillance in Multimedia Imaging,” in *International Multimedia Conference: Proceedings of the 12th Annual ACM International Conference on Multimedia* (New York: ACM Press, 2004), 620–627.

⁴ P.W. Singer and Emerson T. Brooking, *LikeWar: The Weaponization of Social Media* (Boston: Houghton Mifflin Harcourt, 2018), 75–76.

⁵ Indeed, I am especially indebted to Aric Toler of Bellingcat’s guide titled “Advanced Guide on Verifying Video Content,” *Bellingcat*, June 30, 2017, <https://www.bellingcat.com/resources/how-tos/2017/06/30/advanced-guide-verifying-video-content/>.

⁶ Psychology Quotes (@quotepsychology), “Amazing photo says it all. A 100,000-dollar American missile, launched by a 20 million-dollar plane that flies at a cost of 6000 dollars/hour to kill people who live on less than \$1 a day in Yemen. Stop military spending,” Twitter, March 8, 2018, 9:36 p.m., <https://twitter.com/QuotePsychology/status/971983067215667200>.

⁷ Amro Ali (@amroali), “Amazing photo says it all. A 100,000-dollar American missile, launched by a 20 million-dollar plane that flies at a cost of 6000 dollars/hour to kill people who live on less than \$1 a day in [#Yemen](#).” - Ted Greiner (via fb), Twitter, March 9, 2018, 11:57 a.m., https://twitter.com/_amroali/status/972154413258289153?lang=en.

⁸ “Yemen: Historic Hodeidah site destroyed in clashes,” YouTube video, 0:45, posted by Ruptly, September 14, 2018, <https://www.youtube.com/watch?v=HppJaeYY5d4>.

⁹ Philip Bump, “Here’s Why the Resolution of Satellite Images Never Seems to Improve,” *The Washington Post*, April 21, 2017, <https://www.washingtonpost.com/>.

¹⁰ Alan Weedon, “Why Large Swathes of Countries are Censored on Google Maps,” *ABC News*, February 21, 2019, <https://www.abc.net.au/news/2019-02-21/why-large-parts-of-earth-are-censored-by-google-maps/10826024>.

¹¹ This question was inspired by the following article by Uri Friedman: “What War Crimes Look Like From Space,” *The Atlantic*, February 11, 2015, <https://www.theatlantic.com/international/archive/2015/02/satellites-human-rights-space-nigeria/385063/>.

¹² Sam Dubberley, Elizabeth Griffin, and Haluk Mert Bal, “Making Secondary Trauma a Primary Issue: A Study of Eyewitness Media and Vicarious Trauma on the Digital

Frontline” (Eyewitness Media Hub, 2015), https://firstdraftnews.org/wp-content/uploads/2018/03/trauma_report.pdf.

¹³ These tips and others are available in Dubberley, Griffin, and Bal, “Making Secondary Trauma a Primary Issue.”