Teaching Media Forensics

Patrick Brian Smith and Kenzie Burchell

"The balance between open and secret intelligence is shifting. The most useful stuff is often public." [1] [#N1]

–Luke Harding, foreign correspondent, *The Guardian*

Documentary, journalistic, and human rights practices are experiencing a forensic turn. New media technologies are reshaping the ways in which power can be held accountable, with digital, informational, and aesthetic practices providing wider toolsets for exposing violations of human rights and broader forms of political violence. [2] [#N2] More precisely, a range of documentarians, media collectives, journalists, and human rights advocates—such as Forensic Architecture, SITU Research, Logische Phantasie Lab, WITNESS Media Lab, VFRAME, INDEX, and Mnemonic—increasingly depend upon a variety of emerging "forensic media" practices (image verification, data scraping and mining, geolocation, pattern analysis, photogrammetry, cartographic regression, remote sensing, amongst others) to supplement and augment traditional practices of investigative reporting and documentary research. [3] [#N3]

Etymologically, the latin word *forensis* refers to the "forum"—a site of communal gathering and contestation over the evidentiary. [4] [#N4] Thus, forensics is at its heart a matter not only of argumentation but also collaboration. Within this contemporary turn to the media forensic, such forms of participatory contestation are being supplemented through the marshalling of these emergent media tools. However, it is crucial that there is open access to the methods, techniques, and technologies that structure such nascent practices. These forms of practice must not become gatekept, protected and utilised only by an exclusive group of experts. At its most powerful, radical investigation is a non-hegemonic, non-hierarchical affair, and, as a result, widening the pool of interlocutors who can utilise these forms of media forensic investigation is key. Thus, we contend that any media forensic practice must have not only the communal and collaborative in mind, but also the *pedagogic*.

Forensic investigatory practices represent the cutting edge of journalistic and human rights work today, but undergraduate programs that span arts, documentary, media, and journalism studies largely overlook these strategies. This paper will outline a pedagogical strategy to help students across the relevant disciplinary areas to investigate, critically examine, and effectively utilize these emerging tools and the already-essential forensic media literacy. "The Forensic Journalism Teaching and Resource Toolkit" discussed throughout is a curriculum-oriented collaboration between Burchell and Smith to develop pedagogical resources for a specialized undergraduate journalism program, among other programs, in the Department of Arts, Culture and Media of the University of Toronto. [5] [#N5] Our undergraduate teaching modules employ open-source investigative techniques through digital analysis case studies to examine forms of malicious disinformation, establish evidence using online tools, and crowdsource scrutiny of multifarious forms of human rights abuse.

Media Forensics

We use the term "media forensics" to define the convergence of different investigatory modes and how they draw from the aesthetic-political dispositions of changing documentary, media, and journalism practices. Our pedagogical strategies draw from the conceptual and practical convergence the forensic turn entails. [6] [#N6] Within contemporary journalistic practice, open source investigation (OSI)—as a theoretical-political formation and a methodological approach—is fundamentally restructuring the networks and hierarchies of investigation and news production. Journalism has always been a hybrid affair, where emerging technologies for persuasive analysis challenge staid institutional conventions and methods of presentation and dissemination that are often idealized as definitional to the field. [7] [#N7] New infrastructures of openly-accessible information and platforms for participatory public investigatory practices are bringing a multitude of new actors who do something akin to journalistic or documentary work into the public domain. For example, organisations like Bellingcat and WITNESS have rapidly established themselves as key voices within this new hybrid space of praxis; bringing together a diverse mix of scholars, activists, artists, journalists and legal practitioners. The result is an emerging discursive space for bearing witness that has typically been dominated by the more reactionary professional norms of legacy media organisations, protective of their gatekeeping control over the professional domain. As Müller and Wiik suggest, "new actors break up old structures or, in other words, they disrupt legacy media boundaries." [8] [#N8]

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Image from Bellingcat's investigation *Invasion of Ukraine: Tracking use of Cluster Munitions in Civilian Areas.*

Across the increasingly porous boundaries of documentary and new media practice, much of this forensic media work amounts to what Eyal Weizman and Matthew Fuller are calling "aesthetic investigation," defined as "a process of collectively assembling accounts of incidents from media flotsam ... noticing unintentional evidence registered in visual, audio or data files or in the material composition of our environment." **[9] [#N9]** From the data-driven analytical work of SITU Research to the complex transnational investigations conducted by Forensic Architecture, an array of interdisciplinary organisations are reshaping the contours of contemporary investigative and activist human rights journalism. These groups are broadly united around the uptake, analysis, and critical redeployment of publicly accessible information such as satellite imagery, police body camera footage, CCTV footage, social media data, public government data, and commercial data, to name but a few examples. Consequently, these are not only hybrid ecologies of news work and citizen-led critiques; they are connecting and extending previously discrete arenas of public engagement and collaboration across the fields of documentary, journalistic, and media practice.

Pedagogical Mapping

The pedagogical design for the toolkit focused on how forms of experiential and active learning could be blended with practice-based understandings of real-world case studies to provide media and journalism students with both "hands-on" experience of utilizing these new documentary analysis methods, while also critically reflecting on their political and ethical potentialities. Here, we aimed to push students from surface comprehension to deeper learning. The journalistic dimensions of forensic information gathering, production, and dissemination practices are not only mediated by the technologies and platforms used, but rely specifically on the ever-expanding infrastructures of digital communication and open-source data as spaces where particular types of political activity have become scrutable. This legibility relies on the

longer-term process of "mediatization," whereby communication practices across numerous domains and institutional workflows have been reconstituted as digital practices often integrated within information-producing networks of media-centred processes and platforms. [10] [#N10] This understanding builds from sociology's "practice theory" approach, by examining data and other digital traces excavated from real-world case studies for their legibility as practices inherent to events, interactions, and decisions that intersect with journalistic work. [11] [#N11]

Making these emergent and interconnected forms of practice and interaction not only *legible* but practically and materially *useful* for students was a central part of our course design. To do this, we built our pedagogical approach around David A. Kolb's "reflective" model of experiential learning. [12] [#N12] The Kolb Model structures experiential learning by cycling from the learner's existing knowledge and experience to reflection and generalization, and then finally to active experimentation with additional phases cycling through reflection and to the consolidation of new understanding at a greater level of complexity. [13] [#N13] We applied this pedagogical scaffolding at the multiple scales of class, course, and curriculum mapping, making collaborative forms of pedagogy crucial to student learning and development. Learning moved from dissecting contemporary issues in the news onto related case study modules through to a practical and collaborative workshop followed by an independent case study assignment, which in tandem then constituted the wider arc of a third-year undergraduate course. This course was strategically located within the wider map of the program curriculum and complimented by a suite of multi-level modules designed for introductory methods courses and final year courses focusing on independent research. Together these modules effected the transition from "introductory" through to "interrogative" and "experimental" learning phases for research-led education among industry—and arts—oriented disciplinary programs. [14] [#N14]

For the introductory methods course in media and journalism, we developed a methods workshop assignment to focus on practices of collaboration and crowd sourcing, asking students to crowdsource information on the 2021 wildfires in Greece as an accessible and contemporary case. Taking up a broad range of open-source information forms (news reports, social media posts, satellite imagery, surveillance images, government reports, and geotags, amongst others) students were asked to compile the diverse information and imagery they uncovered into a visual timeline that charted the progression and impact of the fire. Crucially, our interest here was less upon technical or technological proficiency. Instead, we focused on how students worked collectively, dividing tasks and practices amongst defined working groups in efficient and equitable ways.

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Maxar Technologies' satellite image of Greek island of Evia from Sunday 8th August 2021.

The third-year course was designed to focus on the theoretical and practical underpinnings of media forensics, divided into separate 4-week modules, each with theory and practice sections —allowing students to develop a conceptual base of comprehension through case studies, before bolstering this knowledge with more concrete yet exploratory practice-based work. Each module progressed in a similar manner. Module one focused on verification practices (images, video, data, etc.) while module two focused on the use of geolocation strategies and satellite imagery, and a final broader and reflective module dealt with the ethics of contemporary investigatory technologies and epistemologies for a final essay problematizing critical power disparities inherent to open access and data-oriented political interventions.

In the initial week of each module, we provided students with readings and a case study that gave them a theoretical introduction to the forensic media methodology under analysis. Examples here included geolocation, reverse image searching, and image verification, amongst others. In class, the instructor then guided students through a more advanced case study, allowing specific questions on issues of methodology and practice to be addressed collaboratively. From here, students moved into a practical computer lab session, where they could put into practice the theoretical work undertaken in previous weeks. For example, during the geolocation and satellite imagery lab-based workshop, we provided students with five images showing different instances of humanitarian crisis, natural disasters, or other political/social events. Each image was accompanied by a tailored description that varied in the level of detail and context provided. Students tried to pinpoint as precisely as possible the location of these images, offering either precise longitude and latitude coordinates or a place/street name. Ultimately, the structure of each 4-week

module aimed to enact a specific transition from "interrogative" to "experimental" learning phases: engaging students more deeply and pragmatically with these emerging digital tools and techniques of investigation.

The central focus of the teaching toolkit centred upon this third-year core course but with a planned footprint across the multiple years of the program's curriculum map. Our broad aim was to provide a set of *workable* and *transferable* resources for teachers who might want to utilize specific resources or teach modified versions of the modules in the future. Therefore, the toolkit included a wide variety of teaching resources beyond the traditional syllabus: wider instructor-focused reading lists, module and workshop walk-throughs, assignment models and rubrics, pedagogical frameworks, and key concept checklists.

Concluding Remarks

Forensic media practices are not only engaging publics, but also helping to make those same publics active participants in the processes of investigation. From openly accessible and editable web-platforms to digital installations more attuned to museums and galleries than the domain of human rights, the modes of presentation and dissemination that forensic media initiatives utilize are establishing new forums of public engagement and collective action beyond traditional circuits of jurisprudence. [15] [#N15] These activist-aesthetic praxes—developed by hybrid scholarly and artistic collectives like Forensic Architecture and Mnemonic—are examples of politically and technologically driven forms of investigation that are extending opportunities for reshaping public engagement with contemporary human rights investigation and activism. Consequently, across contemporary journalism, documentary and new media practices, there is a need for radical restructuring of how we approach investigatory work but also how we approach notions of collaboration, communality, and, crucially, *pedagogy* in this work. Emerging forms of forensic testimony and bearing witness may gather and recall evidence from the past, but this will always be a matter of connecting with others in the present with our collective future in mind.

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1. Luke Harding, "We Are Bellingcat by Eliot Higgins review – the reinvention of reporting for the internet age," *Guardian*, February 1, 2021, https://www.theguardian.com/books/2021/feb/01/we-are-bellingcat-by-eliot-higgins-review-the-reinvention-of-reporting-for-the-internet-age [https://www.theguardian.com/books/2021/feb/01/we-are-bellingcat-by-eliot-higgins-review-the-reinvention-of-reporting-for-the-internet-age] . ⬆ [#N1-ptr1]

2. For more on the expansion of the "forum," see Eyal Weizman, *Forensic Architecture: Notes from Fields and Forums* (Ostfildern: Hatje Cantz, 2012). ⬆ [#N2-ptr1]

3. For more on this emergent forensic disposition, see Patrick Brian Smith and Ryan Watson, "Mediated Forensics and Militant Evidence: Rethinking the Camera as Weapon," in *Media, Culture & Society* (2022), Online first. ⬆ [#N3-ptr1]

4. Thomas Keenan and Eyal Weizman, *Mengele's Skull: The Advent of Forensic Aesthetics* (Berlin: Sternberg Press, 2012). ⬆ [#N4-ptr1]

5. This pedagogical research and development are supported by a Teaching Enhancement Grant (2021) from the Centre for Teaching and Learning of the University of Toronto Scarborough. ⬆ [#N5-ptr1]

6. For a discussion of the "forensic turn," see Charles Stankievech, "Exhibit a: Notes on a Forensic Turn in Contemporary Art," *Afterall: A Journal of Art, Context and Enquiry* 47, no. 1 (2019): 42–55. ⬆ [#N6-ptr1]

7. Tamara Witschge et al., "Dealing with the Mess (We Made): Unraveling Hybridity, Normativity, and Complexity in Journalism Studies," *Journalism* 20, no. 5 (2019): 651–59. ⬆ [#N7-ptr1]

8. Nina C. Müller and Jenny Wiik, "From Gatekeeper to Gate-Opener: Open-Source Spaces in Investigative Journalism," *Journalism Practice* (2021): 11. ⬆ [#N8-ptr1]

9. Matthew Fuller and Eyal Weizman, *Investigative Aesthetics: Conflicts and Commons in the Politics of Truth* (Brooklyn: Verso, 2021). ⬆ [#N9-ptr1]

10. Nick Couldry and Andreas Hepp, "Conceptualizing Mediatization: Contexts, Traditions, Arguments," *Communication Theory* 23, no. 3 (2013): 191–202. ⬆ [#N10-ptr1]

11. See Theodore R. Schatzki, *Social Practices: A Wittgensteinian Approach to Human Activity and the Social*, (Cambridge: Cambridge University Press, 2008); Nick Couldry, "Theorising Media as Practice," *Social Semiotics* 14, no. 2 (2004): 115–32; and Kenzie Burchell, Olivier Driessens, and Alice Mattoni, "Practicing Media – Mediating Practice: Introduction," *International Journal of Communication* 14 (2020): 2775–88. ⬆ [#N11-ptr1]

12. David Kolb, *Experiential Learning: Experience as the Source of Learning and Development* (Englewood Cliffs: Prentice-Hall, 1984). ⬆ [#N12-ptr1]

13. See Carolin Kreber, "An Analysis of Two Models of Reflection and Their Implications for Educational Development," *International Journal for Academic Development* 9, no. 1 (2004): 29–49; Fred Korthagen and Angelo Vasalos, "Levels in Reflection: Core Reflection as a Means to Enhance Professional Growth," *Teachers and Teaching* 11, no. 1 (2005): 47–71; and John Cowan, *On Becoming an Innovative University Teacher: Reflection in Action*, (New York: Open University Press, 2006). ⬆ [#N13-ptr1]

14. Mick Healey, Alan Jenkins, and John Lea, "Developing Research-Based Curricula in College-Based Higher Education," *Higher Education Academy* (Higher Education Academy, March 2014). ⬆ [#N14-ptr1]

15. For more on the work of the forum in relation to the forensic, see Eyal Weizman, *Forensic Architecture: Notes from Fields and Forums* (Ostfildern: Hatje Cantz, 2012). ⬆ [#N15-ptr1]

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