How to Look: Apprehension, Forensic Craft, and the Classification of Child Exploitation Images

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The detection and removal of child pornography online is a vexing process, weighted with moral urgency. In recent years, this process has become increasingly digitally automated. In 2016, the National Center for Missing and Exploited Children (NCMEC) reported that they had reviewed over 500,000 image and video files suspected to contain child pornography; and since 2002 they had reviewed an aggregate of 192 million images in order to identify 12,500 child victims. NCMEC is a nonprofit that serves as the United States’ main clearinghouse for child exploitation content, and works directly with federal and local law enforcement to produce case files in criminal investigations of missing children, child abuse, and child exploitation recorded for the intent of commercial distribution. Under a 2008 bill, electronic communication service providers such as Facebook and Microsoft are also mandated to report suspected child abuse images to NCMEC. My research tracks how this legislation has marked a turning point in the reporting and classification of child pornography and its bracketing under the recent political movement against child trafficking. As electronic media companies’ stake in exploitation cases grows, corporate research teams have begun developing tools to automatically detect images that might potentially contain nudity or child pornography. NCMEC and law enforcement, similarly, have begun using software to match flagged images against databases of known missing children or criminal records.

Historians of computing and software might notice that the “new” technologies I am following have a much older precedent, one that relies upon a different sort of representational craft—forensic image sketching. Policing institutions have long maintained artists on forensic teams to assist in producing composite images through oral description, to do age progressions on missing persons, or to produce facial reconstructions based on postmortem skeletal remains. The composite sketches produced of a victim or a suspected offender are the result of a collaborative and discursive process between investigators, lab experts, witnesses, and family members before becoming manifest through the artist’s pencil. The production of a forensic sketch is thus a highly collectivized task, one oriented toward the “apprehension” of a potential victim or offender. Apprehension implies the prospect of arrest or rescue, and simultaneously the process of making apparent through the crafting or procurement of identifying data to build a corpus of evidence. I add to this that in order to know what to detect one must become knowledgeable about the object (e.g., data, face, person) sought. I suggest we may view the work of digital image forensics in child exploitation cases as similarly heteromated, a practice of distributed cognition between computer vision algorithms and the humans who interpret algorithmic outputs. The notion of heteromation acknowledges the necessity of human mediation in a technical process and suggests the distributed nature of apprehension.

Over the past three decades, forensic investigations have become increasingly specialized to fall under the domain of technical personnel. Ericson and Shearing describe this process of professionalization as a “scientification” of the police, with the division of policing into public safety and criminal investigations. While “street cops” devoted to public safety routinely patrol areas, investigative police are trained to work more acutely on long-term cases and to use forensic technologies, from fingerprinting to DNA testing, to obtain evidence and bolster claims in legal proceedings. Scholars in social studies of science and technology have documented the historical and cultural contexts of reliance on technological methods in forensic investigation—especially the symbolic value afforded to technological evidence and those who can wield it—in a society that increasingly upholds the power of scientific truth and production. Historians of technology have also described how representational devices—technologies, practices, objects—have been made central to the structuring of scientific practice. The discourse around digital image forensics mirrors that of DNA forensics, with a “belief in science and technology as a way to attain the truth and effectiveness in criminal investigation.” Forensic technologies have an “aura of infallibility.” The marketing of image forensics and classification software often touts its high accuracy and low rate of false positive results; that it will attain a speed and accuracy not possibly by human eye alone. Many researchers working on image detection algorithms emphasize the possibility of a future where
humans may not need to see child abuse images for legal content review, and that it might be entirely mechanized.

As I continue this fieldwork I ask historians of computing to consider the significance of perception and corporeality in the practice of using representational and classificatory technologies. I note that detection technologies, whether forensic pencil sketches or facial recognition algorithms, are only successfully implemented through a collaborative and distributed process between multiple agencies. These parties must come to adapt shared ways of seeing with a common goal of apprehension and securing the rescue of a missing child victim. Image detection software is used in tandem with human content moderators to sort and identify violent scenes and offenders in order to find missing children.10 By “violent scenes” I mean both the recordings of child sexual assault made by perpetrators of such abuse into “child pornography,” as well as the sorting of such scenes into “data” for technical detection and classification as evidence in legal prosecutions. By identifying current and potential abuse, teams of software designers and police must also become intimately knowledgeable about such violence, making it reachable—making the “distant” proximate. Corporeality takes on salient hues in a digital space where bodies are imagined and crafted in order to be sought by law enforcement institutions. Ahmed has argued that “rather than othering being simply a form of negation, it can also be described as a form of extension. The body extends its reach by taking in that which is not it...”11 Those investigators who seek to locate and apprehend offenders must first become intimately knowledgeable about abuse—bring close, in a sense—before arresting and enacting punishment. Digital technologies perform this act of extension—apprehending and making proximate violent others—by extending the corpus of policing power in order to seek certain bodies. To make these analyses, I find instructive the feminist scholarship on assessing how scenes of violence and subjection are metaphorically packaged for political purposes, especially the constitutive role12 of the depiction of harm to the feminized body in the establishment of moralizing politics. The current political atmosphere around “anti-trafficking” in the U.S. upholds a particular, often racialized, vision of victimization and offenders, and tends to emphasize prosecutorial and enforcement-heavy solutions over more community-based and service-oriented alternatives to reducing instances of exploitation. The moralizing politics that produce and maintain the anti-trafficking network depend upon the production and circulation of violent scenes; they maintain a “wounded attachment”13 to the “injured body”14 of the sexually exploited child. How do current software developments draw from, and recirculate, such conceptualizations of children and offenders?

My research suggests that new algorithmic developments fall under a broader phenomenon of expanded digital surveillance that has become amplified by efforts to fight child pornography and trafficking. Digital investigation trainings and data sharing between police and technologists produce shared sensibilities of security and insecurity. Based on my fieldwork, I argue that the movement for child protection has evolved to strengthen the reach of the carceral, policing and prosecuting, state. New digital experts entering anti-exploitation work (computer scientists, social media companies, digital forensics developers, and graphic designers) have bolstered the child protection agenda traditionally held by law enforcement and anti-trafficking activists; namely, that protection is best achieved through punitive measures. By following the historical trajectory of scientification within law enforcement, as well as current collaborative efforts, I trace how these actors may embed punitive logic into the investigative process through dual forms of apprehension: image detection software for identifying and locating abuse photos and videos online, and the actual arrests of abusers made possible through partnerships between law enforcement and software companies.

References and Notes


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