Media Forensics & Fragmentary Evidence:
Locard's Exchange Principle in the Era of New Media

Abstract:
This article examines the forensic applications of media studies beyond its traditional theory-focused purview. By citing three case studies of new media scholarship as a successful interpretation and application of what is known as Locard's Exchange Principle, this article outlines the community value of media studies in re-examining historical crimes. By examining how digitization and trends in convergence have elevated new media to being an investigative device, this article also examines how the solicitous reportage of crimes such as serial murders by the commercial press allows for the accumulation of expanded data sets. By examining the methods and results of a controlled university experiment in the recovery of digital fragmentary evidence amongst these data sets, it is my position that modern law enforcement can draw on the best practices of this research methodology beyond academe for use in the field. Media studies should therefore be understood in the renewed context of becoming an area of forensic subject matter expertise as much as it is an area of interdisciplinary research.

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Introduction

This article examines the role of new media as an investigative tool in triaging and delineating new leads in cases of historical homicide, in particular cases of serial homicide. More specifically, this article—citing both theoretical and pedagogical methods—will propose a compulsory role for new media and civilian databases as part of a standardized investigative approach to multiple murder by Canadian law enforcement, merging media studies with established major case management methodologies.[1] With respect to theory, in this article I will outline the social history and ideology of new media as a democratic forum that simultaneously advances community interests and cultural production. With respect to the associated pedagogy, I will outline two case studies of this methodology being successfully adopted as part of an undergraduate media studies curriculum encompassing a rubric of investigative journalism for Web 2.0. I argue here that Canadian police services can draw on this pedagogy to impart investigative and procedural reform in current open investigations, as evidenced by the successful application and execution of this methodology as part of a university course-based experiment involving actual cases.

New media, being interactive, modular, and largely instantaneous as compared to its antecedents has additionally changed the way in which analogue content, once digitized, changes in context and becomes more democratic in modularlity. Hypertext, for instance, while commonly associated with Web 2.0 actually dates to Ted Nelson's

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[1] Establishing a digital 'Major Case Management' protocol is considered an essential adequacy standard amongst Canadian police servies, in most cases being mandated. The current guidelines are the result, in large part, of the recommendations of the Campbell Commission of 1995 that found that inconsistencies between police agencies in the investigation of serial homicide and other "major cases" is in part what enabled serial killer and rapist Paul Bernardo to operate simultaneously in Toronto and Niagara Region for so many years.

experiments in the 1960s, and his efforts to circumvent time and space by using texts to recruit other texts, connecting entire libraries and archives with events being written in real time (Rheingold 1998: 99). This process represents today in practice what it did in theory a half century ago, which is that it is not, as Castells (1996) writes, the centrality of information but the application of it, and the ensuing feedback loop between information and user, that empowers a networked society (31). The use of specific search algorithms in an effort to excavate specific information is therefore complicated by the fact that Internet search engines now frequently employ auto-fill text fields. This intuitive but entirely computer mediated process draws additional comparisons between new media user interfaces and crime scene analysis. Specifically, it mimics what is known in Canadian law as the *plain view doctrine* that is so essential to locating clues ad hoc, and without expectation or prejudice and then proceedings on the merits of the information that presents itself for interpretation and prioritization.

Whether this "plain view" phenomenon presents itself as an apparent blood smear on a living room baseboard in the background while speaking with a potential suspect through an open door, or is an unforeseen auto-fill annotation to an existing keyword search for dated evidence archived on-line, is ultimately immaterial. In either case, the evidence that presents itself as being in plain view leads to the additional search for clues (data and records) that are beyond the realm of what is known as patent evidence (visible to naked eye), to encompass latent evidence (invisible to the eye until examined using an expert recovery technique) The distinction between patent and latent evidence has historically proven to be especially key in serial murder investigations where larger

patterns and, to some extent, a narrative arc that speaks to the offender's motives, can be gleaned from the presence and absence of one or both.

Qualifying a series of crimes, in particular cases of murder, as being "serial" in nature generally reverts to the definition first established by the Federal Bureau of Investigation (FBI) in 1983. Defined as three or more acts of willful homicide over at least a thirty-day period, prompted by one or more of five psycho-sexual compulsions and defined by marked de-escalations in impulsivity and violence exhibited by the offender—or "cooling off" periods as they tend to be known—serial cases are readily distinguished from other occurrences of multiple homicide such of mass murder and spree murder based on these criteria (Hickey 2006: 3-6 & Holmes 1998: 9). For these same reasons, and as has been well-documented across myriad disciplines encompassing criminology as broadly defined, these crimes tend to usurp a great deal of law enforcement resources, particularly given their frequently multi-jurisdictional and protracted nature. It also goes without saying that cases of serial homicide tend to command a great deal of media attention, with these crimes being defined as much by solicitous news coverage and exploitative reportage as much as they are by the pursuit of a suspect, whether known or unknown. As David Schmid (2005) argues, the public's paradoxical fascination with serial killers and that the fact that Western consumers are "repelled but also fascinated" by their disturbing crimes (23), ensures an inevitable celebrity treatment and over-reportage by the press that, in the long term, can prove beneficial for procuring research data by future generations of media scholars.

As I argue in this paper, complete with case studies, the foundational theorem that has formed the basis for identifying forensic trace evidence analysis in criminal

investigations for the last century—known as Locard's Exchange Principle—now finds

renewed relevance, cogency, and perhaps most importantly, a democratized applicability

in the digital milieu. By reassessing and reapplying the theory of fragmentary

environmental exchange for an age of new media, one finds that tracking the movement

of suspects is a comparatively open source process that can be completed with

comparative expediency and limited labor intensity. For instance, procuring or capturing

a topographical image of a crime scene or completing an evidentiary model to scale—

whether to catalogue exhibits or identify a geographical profile—was only a generation

ago a daunting and cost-prohibitive task reserved for the most serious and scrutinized of

investigations.

Today, countless new media products, most of them portable, allow for both

passive investigative work that approximates what I liken to a form of crime scene crowd

sourcing, drawing on a diversified set of perspectives to identify best practices and also

what might be missing. This methodology also naturally engages comparative data sets,

both qualitative and quantitative, that can draw a nexus between motive and opportunity

with respect to the specific physical acts of suspects. With the passage of time, the binary

of the *mens rea* (criminal intent) and *actus reus* (criminal act) that is essential to proving

culpability tends to become more transparent. As will be seen in the case studies

presented here, it can also establish relationships between offenders and victims, as well

as offenders and specific locations. While this technique is frequently used in real-time

by authorities today, it can be applied retroactively in many cases as secondary or

supplemental evidence. In other words, the prevalence of wireless networks and the

itinerary personal electronics as being representative of offender's movements is well

documented,[2] and has in part defined the incipient transition from Web 2.0 to Web 3.0.

As the latter is generally understood as being emblematic of the age where computers

themselves can identify, collect, and even generate new information (Smart 2010), the

informatic breadcrumbs left over the course of one's life—or even a single day—as a

Western consumer will be all-the-more telling through the investigative profile of

ritualistic offenders yielded by "dereferencing" linked data (Watson 2009: 229-230). This

process, whether executed as a police officer or civilian, is not by definition computer

forensics, but is what I argue can be described as media forensics. In fact, it might be said

that the modularity of Web 2.0 has revealed the Internet in its current transitional state as

being a forensic medium in earnest.

Qualifying a "Forensic" Methodology

While the term "forensic" and cases of serial homicide tend to be used interchangeably—

in part as a result of the disinformation imparted through televisual narratives and crime

scene dramas that misinform viewers—the reality is that they are often not, historically

speaking, so readily paired. Modifying any field of study, discipline, or process with the

forensic prefix simply describes it as being carried out as part of a public service and as a

matter of public record. Derived from the Latin *forensis,* which generally describes

processes that are "before the forum" or in the public sphere and otherwise subject to

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[2] This investigative technique has become increasingly prevalent commensurate with the sale of
smartphones, and where cellular tower information can be "dumped" to ascertain the movements
of suspects. Most recently, though not a serial homicide case, this method was used by the
Ontario Provincial Police, and later presented as evidence of guilt, in the nationally
sensationalized 2012 trial of Michel Rafferty for the kidnapping and murder of Victoria (Tori)
Stafford in Woodstock, Ontario in 2009.

public scrutiny, the etymology points to its true purpose.[3] Forensics is both a process and a philosophy, mired at times in a systemic public misunderstanding of science propagated by cable series such as *CSI*, *Dexter*, *Bones*, and others but one still held, in the real world, to stringent expectations of efficacy. The courts, as the most public and also the most theatrical and cathartic of all public spheres, is therefore the space with which we customarily associate the forensic label and the forum where it has found a home in the modern era, typically at the centre of some criminal proceeding. Forensic pathology, forensic accounting, forensic entomology, forensic linguistics, forensic toxicology, and forensic graphology are all therefore examples of these respective fields of expertise as carried out for the benefit of the courts and before the public eye—in service to the forum.

Media forensics as the phenomena and forensic media studies as the associated discipline—or model of expertise—are no different. While computer forensics, for instance, is a discursive field that generally describes the analysis of computers and other devices seized during the course of an investigation, including the imaging of hard drive data in hopes of recovering digital evidence that can point to specific activities carried out and offences committed by specific users, media forensics is by contrast the use of a computer for a public purpose, and the analysis of public versus private or privileged content, doing so for an equally public good. It describes computing in service to due process, the administration of justice, and the public sphere at once. Like all things forensic it also denotes a certain degree of expertise and expectation of esoteric,

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[3] By 1845, British medicala textbooks began to adopt the forensic label as a signature of pathology and post-mortem work being carried out for criminal or prosecutorial purpioses, the literature apparently refelcting the understanding of the courts as the mnodern forum.

discipline-specific knowledge and experience. Qualifying expertise in the context of forensic media studies as an area of both scholarship and public service is somewhat problematic in that the media being analyzed still tends to be relegated to being one of either a business and academic tool, or an outlet for social interaction and activism, seldom both at once. The construct of forensic media studies—expert computing and content analysis in service to the public—therefore requires a reconciliation of these two otherwise distinct matrices. It is a duality of use and purpose that in conventional institutional settings is typically deemed wasteful, in part the reason why workplaces firewall social media sties and blacklist certain key words. In terms of using media studies scholarship as an interactive and experiential knowledge community, the "new" expertise with respect to this forensic methodology requires expertise dictated by the efficacy of the user experience, and that is much about imagination and intuition as forms of cultural production that have real-world consequences.

Qualifying a witness as a subject matter expert in a Canadian court of law typically follows a somewhat doctrinaire process, one more onerous than in the world of academia. However, given that the 'forensic' paradigm need not be limited to the spectacle of the courtroom itself, and describes in a more multi-disciplinary context the public value of information, expertise in the area of forensic computing is best understood as operating according to a sliding scale. Generation-Y undergraduate students might therefore be seen as, if nothing else, emerging subject matter experts in any number of cognate fields and are, even in unknowingly, applying forensic principles every day of their lives as not only scholars but also consumers of new media. As stated, establishing an understanding of media forensics as an emerging knowledge parapdgim

and process of cultural production requires an understanding of the new binary role of scholarship and consumerism as being mutually inclusive, not exclusive.

Locard's Theory of Fragmentary Evidence

While by today's standards with respect to the asynchronous and non-linear movement of information, forensics is a term in flux, but one that—in keeping with its historical origin—has newly intensified relevance. The reality is that forensics began in the laboratory from which it has since been emancipated in both its practical and popular culture forms, having endured as one of the principle legacies of the Progressive Era (Theoharis 1999: 169), and can largely be attributed to the work of single polymath named Edmond Locard.

Having been schooled in both medicine and law, Locard had by 1910 convinced the Prefect of Police in Lyon, France to provide him an abandoned attic space and a handful of assistants and evidentiary exhibits to develop the world's first forensics laboratory. Focusing on what he called fragmentary evidence—now popularly referred to as latent, or trace evidence—Locard's pioneering work was soon capable of being summarized with a single maxim that endures as the prevailing sound byte of forensic sciences today: "Everywhere you go, you take something with you, and you leave something behind" (M'charek 2008: 521-522).

While Locard was, through these postulates, focusing on the exchange of fragmentary evidence in the molecular and chemical context, and working with trace biological samples—hair, fibers, blood, fingerprints, footwear impressions, etc—the reality is that smartphones, cloud computing, geometric hashing, archival informatics, cookies, keystroke loggers, Google Street View, MobileMe, Facebook Timeline, and all

of the signature hardware, software, and subroutines that define new media are able to

approximate the same surface contact identified by Locard over a century ago. Like any

form of fragmentary evidence, new media has ensured that so many of one's daily actions

intersect with a technological milieu subject to some sort of record-keeping module or

some of passive surveillance that everywhere we go we go, either physically or virtually,

we too leave something behind. As Locard postulated was the case with crime scenes,

cadaver dump sites, or the dwelling where a criminal might return after the commission

of a crime, all facets of daily life now harbor evidence of attendance, records of actions

and rationale, and a host of other unique behavioral and biometric indicators that that will

ultimately "serve as silent witness" of who we are, where we have been, and what we

have done—even years later (521).

<p style="text-align:center">Case Study 1: The Son of Sam & the Western Creeper</p>

As new media, and its popularization and normalization of our consenting to this system

of what Roger Clarke (1988) during the nascence of digital culture in the 1980s, seems to

have prophetically coined as "dataveillance" in terms of its being the new discreet and

privatized form of surveillance,[4] some specific examples are worth noting in terms of

both historical context and pedagogy with respect to the public role—the forensic merit—

of media studies in a practical context. The first is the case of David Berkowitz, the self-

proclaimed "Son of Sam" who between July 1976 and August 1977 murdered six people

with a .44 caliber revolver throughout the New York boroughs of Queens and The Bronx.

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[4] There are archived texts, including in journals such as the *Human Rights Law Review*, dating as far back as the 1970s that make use of the term 'dataveillance,' although Clarke claims—without any apparent contestation—to have coined the word in 1988. The coinage is now a household term borrowed on heavily by academics, and which has produced countless derivatives as surveillance studies has established something of a bandwagon following.

The *modus operandi*, or MO, used by Berkowitz—whose correspondence with the media while at large, and using the pseudonym the Son of Sam, has come to typify the self-commodification and reflexive celebrity of the American serial killer—was by no means calculating or complex. Berkowitz would typically ambush young couples in parked or idling vehicles, shoot both at close range, and then flee the scene in his white Ford Galaxie left parked nearby.

In the early morning hours of July 31, 1977, having moved outside of his historical hunting grounds and into Brooklyn to resume his crimes, Berkowitz ambushed and shot a young couple kissing in a car parked under a city lamp post, killing the young woman and injuring her boyfriend. At the same time, 2:05am, Berkowitz's Ford Galaxie parked on nearby Bay Street was being ticketed for being parked too closely to a city fire hydrant. When an area resident came forward to police two days later and described an odd looking man discarding a parking ticket from his windshield in anger just after the shootings, the archival search began for the city's hard copy record of that same citation—one that would bear the license number and other identifying markers of the vehicle, and would lead to the identification and whereabouts of its registered owner. Manually thumbing through analogue, paper files containing thousands of New York City hard-written, semi-legible parking citations issued on or about the date of the last murder proved to be something of a search for a needle in a proverbial stack of needles for task force detectives. Eventually, they located the ticket in question on August 9, 1977—nearly a week after the information had first come to light. The following evening, as Berkowitz emerged from his Pine Street apartment, he was swiftly arrested by police and his reign of terror that effectively held an entire city hostage, and kept

millions indoors for months had come to an end (Leyton 2005: 195-196). It had been slow and cumbersome, but ultimately it was locating that parking ticket—one that linked a unique license number to Berkowitz and by extension Berkowitz to both the vehicle and the crime scene—that brought down one of New York City's most prolific murderers on record.

Fast-forward thirty years to the campus of Western University where, in 2009, I was a PhD candidate and lecturer, and whose female student population were similarly under siege by a nighttime intruder known only as the "Western Creeper." Targeting specifically off-campus student houses owned or occupied by female undergraduate students, several months of overnight break-ins had escalated to the point where the suspect was no longer pilfering items of monetary interest, but collecting personal keepsakes belonging to the women who lived in the targeted dwellings. Of particular concern from a risk-assessment perspective, was that—according to a number of traumatized victims who awoke to come face-to-face with the intruder—he had also begun using a smartphone to surreptitiously video record the occupants while they slept. As a young police detective assigned to a burglary division at the time, I along with my colleagues was well-aware that the change in MO had all the makings of a shift away from financial gain and towards thrill seeking and dominance that would ultimately escalate to sexual violence once the voyeuristic elements of the crimes grew tiresome.

With my also being an emerging scholar at the time in the area of crime and technological determinism, I recalled the circumstances of the Berkowitz investigation— in particular the analogue data trail that led to his identification via the parking ticket. It occurred to me that in a digital world, the same methodology would not only prove

germane, but could applied with newfound efficiency. An aerial overview of all of the crimes of the Western Creeper confirmed their being limited to a densely populated student enclave adjacent the main campus, one thoroughly patrolled by city parking enforcement officers. Given that most of the crimes were reported as occurring between 3:00am and 5:00am—a temporal window where street parking in London is prohibited—it occurred to me that if the suspect were relying on the use of a vehicle, it would be unlikely that it would not have been ticketed during the commission of at least one of these crimes. Like Berkowitz, it turned out that just one ticket could prove more valuable, and engage Locard's fragmentary model, more than any number of other and more traditional forms of latent evidence such as blood, hair, fires, footwear impressions, and so on.

In 2009, parking tickets in London, Ontario were—as they are today—recorded by a mobile device that uses a thermal printer to generate the hard copy served at the vehicle, and with the associated license information, time, location and other variables later being uploaded to the city's main records management server. As such, locating the data in question using this digitized process takes neither days nor even hours, but minutes. As predicted, the Western Creeper—neither a university student nor an area resident—used a vehicle to get to and from his crimes. Digital records held by the city clerk's office soon confirmed that this same vehicle had also been issued a citation for parking on a city street during prohibited hours on a date, time, and at a location that all directly corresponded with one of the reported crimes. A surveillance detail set-up at the suspect's address later confirmed what the digital fragmentary evidence yielded by the mobile computing device used to issue his parking ticket had already furnished: the data

that had served as "silent witness" against him and his predatory activities that were stopped before they could escalate further.

In the aftermath of this case, and as I went on to design my own courses in media studies at Western, it became evident that beyond the digitization of Locard's postulates, David Harvey's (1989) model of time-space compression suggested that if a search on parking tickets could yield a proverbial smoking gun in minutes regarding an unsolved case ongoing in nature, that a non-linear analysis using a mixed methodology would theoretically yield similar fragmentary evidence with respect to dated cases, it might just take longer. It also occurred to me that the more protracted the crimes and the greater the breadth of reportage, the greater the corresponding data set to work with. In the case of the Western Creeper, the data set was of such a proprietary nature that access was— legally at least—restricted to law enforcement personnel. While the fodder of much rumor and innuendo on campus, taking on something of a boogeyman aura, the Western Creeper had also by that time failed to be widely reported on publicly. In cases such as the Son of Sam—or any serial killer for that matter—the morbidly celebratory nature of their crimes, and with multiple murderers amounting to what Mark Seltzer (1998) calls the media "superstars of our wound culture" (2), ensures solicitous reportage from a variety of sources that now pervade digital archives of a wholly public nature. With respect to media forensics in the search for digital—or digitized—fragmentary evidence, the up side to the media's commodification of the serial killer is that their archives inevitably leave bread crumbs for new media scholars, as investigators, to follow and follow-up on as a matter of scholarship and public service reconciled as one.

The Cold Case Curriculum

Beginning in the winter term of 2010, I began offering an undergraduate course on media studies and the cultural production surrounding the serial killer as a public figure in Western consumer culture. Students, in seeing the title and description in the course calendar, not surprisingly enrolled en masse. While no doubt guided in part by their desire to indulge their dark fascination with the related—and frequently graphic and disturbing—material, they soon discovered that the price of admission, so to speak, was that these same curiosities and guilty pleasures were going to be re-tooled under the veil of the technological sublime and used for a utilitarian purpose. In the tradition of Locard, but in adopting a new media purview, the principle assignment for the course was to employ the same methodology used in the Berkowitz case in an analogue format, and the Western Creeper case in a digital format, by using mixed media and mixed methodologies to identify and synthesize new information and new leads in serial killer cold cases. The learning objective was to apply principles of good deduction and sound academic reasoning—rather than jaded police stereotyping—in conducting content analyses and documentary research. The results quickly transcended the university to lend credence to the idea of the student as the ultimate unbiased and intrinsically motivated investigator—a forensic media scholar whose efficacy and deductive abilities rival those of seasoned police investigators.

In demonstrating a natural, socialized understanding of—and aptitude for—the consequences of digitized surface contact and the excavation of fragmentary evidence, the cold case curriculum was found speak to students' daily experience in both a scholarly and forensic context. By allowing students to pool their resources and

respective skills sets as a team, students were placed into cold case "squads" in keeping

with the established police major case management model. The division of labour in each

squad was then delineated by areas of personal or academic interest, previous course

work, part-time work or volunteer experience, extra-curricular involvement, and existing

life experience. By replicating this legislated best practice amongst Canadian law

enforcement—yet in many respects also improving on it in a democratic academic

environment—the internal composition of each squad allowed for a system of integrated

peer review that not only ameliorated investigative tunnel vision,[5] but which paired each

student with a role that best suited them, the squad, and therefore the progress of the

investigation. Roles included, as they do in a standard major case police detective bureau,

a case manager, field investigator, exhibit manager and archivist, and a media liaison. For

this particular case study, I also created a new position—academic liaison—tasked with

seeking second opinions on dated "expert" testimony and conclusions, as well as mining

the expertise available in the relevant areas of study by contacting scholars and scientists

with faculty appointments across Canada. Like the students themselves, contemporary

scholars in their respective fields were in most cases[6] enamored of the opportunity to

contribute their knowledge and research for a forensic and altruistic purpose. They were

also in most cases enamored of the opportunity to similarly transcend conventional

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[5] The term 'tunnel vision' is a recurring denouncment at wrongful convivcion inquries in Canada, and generally describes as fundamental lack of peer review and impartiaily in the police investigative methodology. Some of the best known examples, such as Stephen Truscott and Thomas Sophonow, were not only determined to have been railroaded by police tunnel vision, but the crimes for which they were wrongfully convicted are now unsolved cold cases.

[6] In a few circumstances, academics in certain fields were reluctant to commit "expert" opinions that might be scrutinized beyond the safe and aclinical confines of the academy, and declined to contribute lest their expertise be (rightfully) challenged and they be exposed as charlatans.

academic work and lend their resources to assist in a multidisciplinary think tank

approximating a major case investigation.

Case Study 2: The Grim-Sleeper Case

In the initial section of the course offering, five squads consisting of eight students were

permitted to choose—by random lottery system—from a list of unsolved serial homicides

that I had previously identified as having not only a rich existing archive of media

reportage, but also an associated data set. Existing in both analogue and digital forms,

these data sets furnished a number of investigative indicators, or forthcoming leads, that

might allow for expanded deduction, induction, and both a non-linear and creative

approach to interpreting the records.

One of these cases was that of the "Grim Sleeper," a pseudonym assigned by the

tabloid *LA Weekly*, and whose own investigative reporters had in 2008 identified the

patterns of the killer. The periodical's investigative news team was also the first to bring

the story public, ahead of the Los Angeles Police Department (LAPD) who had

apparently known for some time that a serial killer was targeting predominantly African-

American women in South Central Los Angeles (Pelisek 2008). The Grim Sleeper

moniker, as an obvious and somewhat ludic parody of Grim Reaper, denotes the fourteen

year "sleep" that separated the first set of eight murders between 1985 and 1988, and the

set of three murders that occurred between 2002 and 2007. While marked respites, or so-

called "cooling off" periods between crimes and the ensuing narrative structure, is in part

what separates the MO and pathology of the serial killer from other forms of multiple

murderers (Leyton 2005: 53-54), the fourteen year respite in this case remains

exceptional. In fact, were it not for a link made by DNA to the original set of murders

confirming the same offender as having resumed apparently random attacks in 2002 for reasons unknown, the premise have been largely unbelievable.

In February 2009, LAPD Chief William Bratton, facing media scrutiny and public backlash for holding back information with respect to the crimes, not only confirmed the existence of the killer, but published to the Internet a newly digitized .mp3 file containing original audio of a 911 call following one of the murders that occurred during the original set of crimes over twenty years earlier. The call was placed from a pay phone by an unidentified eye witness to one of the suspect's body dumps, and described the killer driving a passenger van later determined as being associated to the Cosmopolitan Church, a defunct place of worship located nearby and which was thought to have some connection to the case. Aside from the fact that this particular case bridged two generations of media formats, one largely analogue the other digital, the Grim Sleeper file was both an unsolved case and an academic research project in both the applications of digitization and media convergence, as well as the merits of new media reportage and on-line publishing for a public purpose. The dual value of this particular file was further underscored by the fact that the Grim Sleeper case was simultaneously a cold case and also a newly revived, ongoing case. The Grim Sleeper's crimes were literally *in progress* as students took on the assignment in 2010 with this key piece of evidence—the original 911 recording in a now accessible digital format—being made public using technologies that would likely have deemed unfathomable by the 911 caller, the suspect, and even the police in the 1980s.

In later presenting their theories and the sum of their research at the end of the 2010 undergraduate winter term, the Grim Sleeper cold case squad used the original *LA*

Weekly piece and the LAPD's 911 recording as primary source material. They also procured endless secondary sources encompassing everything from Google map and other geographic information system protocols, to the original field notes of reporters covering the initial murders in the 1980s, to used vehicle sales records available through online vehicle history report services, all in methodically developing an actionable theory informed by both good scholarship and informed deduction—the dual foundation of a matrix of media forensics.

In their report, students proposed that the suspect was neither a parishioner nor a member of the clergy or staff at the Cosmopolitan Church, but that the vehicle had been salvaged from the church following its closure by the suspect in the course of his employment in mechanics and storage. They theorized that the suspect was a single male, middle-aged or older, likely also African-American given his ability to operate without suspicion or notoriety in the area, and that he likely had a minor, or misdemeanor, criminal record. This last distinction was key, as a misdemeanor conviction would not necessarily require a mandatory DNA sample be provided to police while in custody, and would theoretically explain the lack of a DNA match to known donors (convicted offenders) with samples on file with the DNA databank. Most importantly, students hypothesized that the suspect was employed at least in a secondary or casual capacity as an automobile mechanic or similar, allowing him access to scrapped or salvaged vehicles, and the ability to exploit loopholes in the law with respect to the use of license plates for test drive and safety check purposes.

Following the end of the winter term, in May 2010, I forwarded the media student squad's final written report—the most cogent and compelling of all case summaries

presented in this inaugural offering of the course—to the LAPD task force responsible for the Grim Sleeper investigation. The "800 Task Force" as they were then known colloquially—named after the suite number in LAPD's Parker Center where the detectives were headquartered—never officially acknowledged receipt of the report. However, just two months later, in July 2010, the LAPD arrested fifty-seven year old Lonnie Franklin Jr., a weekend junkyard mechanic who during the 1980s—including the original set of murders—had been employed as a licensed mechanic with the City of Los Angeles and stationed to various departments. This included, for a brief time, his working as an LAPD motor pool mechanic (Simon 2010).

Whether the students' report was the impetus behind the LAPD expediting the arrest of Franklin, or in publicly announcing his arrest, will never be fully clear. What is clear is that students were correct about every element of the offender's profile except for one. Franklin did not have a minor criminal record—he had a major one. In 2003 Franklin was convicted of a felony and had his DNA taken by authorities, yet for some inexplicable reason—ostensibly due to a backlog and purge stemming from a moratorium on DNA sample uploads while the relevant laws were under review—the sample was never submitted to the police databank. As such, a bizarre comedy of bureaucratic errors ensured that Franklin's DNA profile was never submitted for cross-referencing against unidentified crime scene samples. In the end, the LAPD had identified Franklin through a more complex and still embryonic system of familial DNA analysis, focusing on Franklin's adult son's sample in the databank for unrelated felony convictions. My student squad obviously did not have the use of this DNA technology. However, in applying the same principles of fragmentary evidence by proxy—using documentary

specimens in lieu of biological samples—they furnished the same suspect profile all but in name, doing so in weeks what took the LAPD, in relation to the second set of murders alone, nearly a decade. As unsung sleuths in this case, the first cohort of media studies student investigators, in using the same version of Locard's principles used to net the Son of Sam and the Western Creeper, ultimately and definitively proved the forensic media methodology to be sound. They also proved it to be especially effective as a practice amongst civilian investigators possessing a youthful enthusiasm and a certain—and necessary—naïveté regarding the otherwise pedantic and repetitive nature of police investigations.

Case Study 3: The Capital City Killer Case

In winter of 2011, I offered the second installment of the undergraduate course focusing on serial homicide as commodified by the media. Once again, the theoretical and pedagogical flip-side being that this same system of reportage engenders a rich secondary source repository, and allows for expedited data exploitation in search of fragmentary evidence. As demonstrated yet again this offering, it is evidence that, in the tradition of the digital humanities, survives the test of time through expanded collections and readership enabled by a virtual format—one that now enables a forensic context and application.

A new list of cases in this second offering included the lesser-known Capital City Killer case, the "capital city" in question being Madison, Wisconsin, and with most of the unsolved crimes being connected to the campus of the University of Wisconsin at Madison between 1967 and 1984 inclusive. With as many as seven victims thought to be connected, and with all of these crimes being cobbled together under the auspice of their

having been committed by a single perpetrator, students in this case ultimately reached two informed conclusions based on the available data and the interdisciplinary Locardian, forensic methodology.

The first conclusion was the Capital City Killer is a misnomer, and that "killers" in the plural is likely a more accurate assessment of the multi-generational crimes. Using new media to scour for clues, a number of the unsolved deaths appear connected to similar murders elsewhere in the United States, as well as the state of Wisconsin during this same period, with no two murders in Madison having the same MO or victimology. In this sense, students, deferring yet again even if unknowingly, to Locard but in a virtual context, are able to use the lack of fragmentary evidence to *exclude* a suspect as much as incriminate them. The willingness to let the evidence speak for itself and rule out suspects, even in this relatively clinical exercise, is also the definitive acid test of credibility with respect to an investigator's restraint and reasonability. It is also in part why this squad's subsequent findings were deemed so compelling by stakeholders, both civilian and police alike.

Their second conclusion pertained to a specific homicide, and led to the use of public media texts as inculpatory (inclusive and incriminating evidence) versus exculpatory (exonerating or alibi evidence) sources. In examining the first of the unsolved deaths of the series, the 1967 slaying of Madison freshman Christina Rothschild, students were able to locate—on microfiche—an original news report on the stabbing death of the former Chicago catalogue model behind the campus mathematics building. Using this same original media report to strategically develop keyword search algorithms for digital sources, students ultimately turned up a match between the victim's

dormitory roommate, who provided a statement to the press back in 1967, and a current user profile on the social media site Facebook. After reviewing the relevant research ethics protocol for interviewing human research subjects, students initiated an ongoing correspondence with the former roommate who, it turns out, had spent the better part of the last forty years using her own private resources and funds to conduct her own investigation, including retaining the services of private investigators to keep tabs on a former scorned suitor of Rothschild who she had always suspected of the crime. In later turning over a number of documents and other exhibits that provided significant new evidence, and for which a detailed inventory and explanation exceeds the scope of this paper, students contacted the original police department tasked with investigating Rothschild's murder. After confirming that the individual in question had at one point been a person of interest—dropping out of university and fleeing Madison shortly after Rothschild's death, and skipping out on his scheduled police polygraph appointment in the process—authorities had for years been unaware that he was still alive, let alone where to find him. After a near century of living off of the grid, his whereabouts and recent activities and affiliations—all inculpatory by definition—were later confirmed by students who provided the information, on their own accord, to police investigators to allow the case to be officially reopened as a result f this exercise (Sher 2011).

Conclusions

Having recently transcended the traditional classroom to become an extra-curricular and campus-wide initiative, new media and its scholarship have allowed this exercise to function as an alloy of numerous disciplinary perspectives and research methodologies. Currently drawing scholars at both the undergraduate and graduate levels from numerous

disciplines and backgrounds, it is the experiential and utilitarian nature of the work

performed that separates academic-based investigations from the more traditional rubric

of law enforcement that ultimately ensured that these cases went cold in the first place. In

fairness, however, many of these cases the technologies currently available—and taken

for granted—would have been not only unavailable, but unfathomable amongst the

original investigators. As students come to understand, the media's solicitous treatment

of crime stories, once digitized and made immediately searchable, populates a rich

repository of secondary source data that can lead them in new directions as they re-

examine unsolved cases through an interdisciplinary lens. My students as budding

investigative reporters and forensic media scholars have achieved tremendous personal,

professional, and public success, and additionally learn that they needn't postpone being

influential citizens, nor defer the use of their creativity and resourcefulness until after

graduation, but that media studies when properly executed is at the heart of a practical

education.

With the related research having to date having resulted in one cold case being

officially re-opened, and corroborating the findings of the police *prior* to the arrest being

publicly announced in another, the multi-mediation of Locard's exchange principle also

suggests that media studies' frequently overlooked empirical—and forensic—

applications rest in the very products it seeks to deconstruct through the familiar lens of

critical theory. As conferences to probe the future of media have been proliferating over

the last decade, and as universities continue to amend their departmental philosophies and

course offerings, it is inarguably a discipline in flux. I do not advocate an entirely

atheoretical subfield of media scholarship with the methods cited here, but am proposing

a more balanced and integrated approach towards some of the products and institutions

that media scholars have traditionally relied on critiquing strictly as a matter of course.

For instance, the convergence of social media, cultural production, and established major

case management protocols as an awkward but effective amalgam that informs a new, or

renewed, definition of forensics—brings it back to its origins as a fundamentally public

and populist construct. All of these phenomena have traditionally, and at times

regrettably, found themselves in the cross-hairs of media studies as purportedly

hegemonic processes reflective of surveillance regimes.

      The reality is that in an age when avatars and smartphone self-portraits in the

bathroom mirror uploaded to the Internet serve as most people's expression of their

individuality and character, discourses on the perils of self-commodification no longer

have the same resonance with students, and seem rightfully hypocritical. I propose that an

expanded understanding of how these phenomena, in the Locardian sense, have a larger

utilitarian value—a substantive forensic application—will ultimately allow media studies

to undertake a new public role. Such a shift will allow media studies, as seen in the cold

case experiment as an isolated example, to find relevance and credibility beyond the

classroom, ultimately meeting the threshold of a forensic discipline where subject matter

expertise can be qualified and quantified by both academe and the public at large. Media

forensics as the new media studies for an age of new media will ultimately serve to

educate a public who, as the collective "forum" of today, have as limited an

understanding of the historical role of media and its scholarship as they do of forensics.

Works Cited

Castells, Manual (1996) *The Rise of the Network Society*. Cambridge, MA: Blackwell

Clarke, Roger A. (1988, May) Information Technology & Dataveillance. *Communication Studies of the ACM*. 31(5). 498-512

Harvey, David (1989) *The Condition of Postmodernity: An Enquiry into the Origins of Cultural Change*. Cambridge, MA: Blackwell

Hickey, Eric W. (2006) *Serial Murderers and Their Victims, 4th Ed*. Belmont, CA: Thomson-Wadsworth

Holmes, Ronald & Stephen T. Holmes (1998) *Contemporary Perspectives on Serial Murder*. Thousand Oaks, CA: Sage

Leyton, Elliot (2005) Hunting Humans: *The Rise of the Modern Multiple Murderer, 2nd Ed*. Toronto: McLelland & Stewart Ltd.

M'charek, Amade (2008) Silent Witness, Articulate Collective: DNA Evidence & the Inference of Visible Traits. *Bioethics*. 22(9) 519-528

Pelisek, Christine (2008, Aug. 28) Grim Sleeper Returns: He's Hunting Angelinos, as Cops Hunt his DNA. *LA Weekly*. Electronic document. Last access June 1, 2012 at URL: http://www.laweekly.com/2008-08-28/news/grim-sleeper/

Rheingold, Howard (1995) *The Virtual Community: Finding Connection in a Computerized World*. London: Minerva

Schmid, David (2005) *Natural Born Celebrities: Serial Killers in American Culture*. Chicago: University of Chicago Press

Seltzer, Mark (1998) *Serial Killers: Death & Life in America's Wound Culture*. New York: Routledge

Sher, Julian (2011, Aug. 29) UWO Meets CSI as Student Investigate Cold Cases. *The Globe & Mail*. A1 & 3.

Simon, Mallory (2010, July 8) Police Suspect in Los Angeles Grim Sleeper Case to be Arraigned. *CNN.com*. Electronic document. Last accessed May 31, 2012 at URL: http://articles.cnn.com/2010-07-08/justice/grim.sleeper.case_1_lonnie-david-franklin-franklin-s-dna-grim-sleeper?_s=PM:CRIME

Smart, John (2010, June 2) How the Television Will be Revolutionized: The Exciting Future of the iPad, Internet TV, and Web 3.0. *Acceleration Studies Foundation*.

Conference paper. Electronic document. Last accessed April 23, 2012 at URL:
http://www.accelerating.org/articles/televisionwillberevolutionized.html

Theoharis, Athan G. (1999) *The FBI: A Comprehensive Reference Guide*. Phoenix, AZ:
Oryx Press

Watson, Mark (2009) *Scripting Intelligence: Web 3.0 Information Gathering &*
Processing. Berkley, CA: aPress