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IDENTIFYING TRACES: TECHNOLOGIES OF THE FORENSIC NARRATIVE

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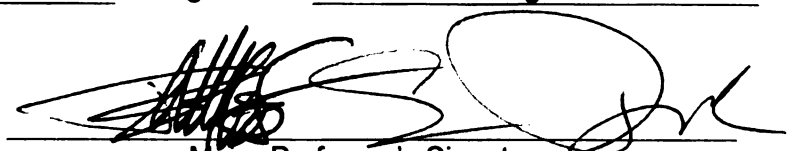

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IDENTIFYING TRACES:
TECHNOLOGIES OF THE FORENSIC NARRATIVE

By

Joy Elizabeth Palmer

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ABSTRACT

IDENTIFYING TRACES: TECHNOLOGIES OF THE FORENSIC NARRATIVE

By

Joy Elizabeth Palmer

This project takes as its starting point the contemporary cultural fascination with the "forensic" and asserts that since the discovery and later acceptance of DNA identification techniques in the early nineties, the forensic mode of narrative has fast become one of the most dominant truth-telling paradigms of our time. By positing that the tracing of empirical evidence can always lead to whole truth, forensic narratives control historical account by fixing the truth of events and identity. Indeed, if the central problematic of the forensic narrative is the problem of identity, then that narrative is necessarily bound up in the history of identification devices such as photography, fingerprinting and DNA profiling. This history is chronicled by the texts under examination in this dissertation. Each of the forms of identification discussed in this project--from the mug-shot to the DNA profile--is surrounded by popular discourses that illustrate the fascinating ways in which the forensic narrative takes shape within the cultural imaginary. These discourses also reveal the instabilities that inhere within that narrative. *Identifying Traces* tracks this fascinating interplay between the concepts of identification and elusive individuality, and also demonstrates the intrinsically multi-discursive construction of the forensic paradigms of narrative and identification.

DEDICATIONS

To Jack, my lovely laughing boy, for always making all this academic stuff seem to matter just a bit less.
To Mum, Dad, and Jonathan for never questioning that I'd get here one day, and for always being so bloody proud!
And to my husband Frank, most of all. For being with me on this long and winding road, and for always assuring me that my dissertation wouldn't suck.

I love you.

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Most of all Jill Anderson, who's been right there with me since that bloody class in Old English.

Finally, Frank, thanks for reading my drafts and watching *C.S.I. ad nauseum*, for your insights and gentle humor, and for not berating me *too* much for sloppy use of hyphens and Latinate phrases.

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Chapter One

"The *C.S.I.* Effect": Technologies of Contemporary Forensic Narratives

[W]e examined the rungs of every chair in the hotel, and, indeed the jointings of every description of furniture, by the aid of a most powerful microscope. Had there been any traces of recent disturbance we should not have failed to detect it instantly. A single grain of gimlet-dust, for example, would have been as obvious as an apple. (Edgar Allan Poe, "The Purloined Letter" 1844)[1]

To fix the human personality, to give to each human being an identity, and individuality that can be depended upon with certainty, lasting, unchangeable, always recognisable, and easily adduced, this appears to be in the largest sense the aim of the new method. (Sir Francis Galton, *Finger Prints,* 1892)[2]

It's the small things that will break a case. Post the O.J. trial this is the kind of thing people love. Definitiveness. You spray, there's blood, there's guilt, and I think that's one of the things people love, because you don't get definitive answers anywhere else. (Ann Donahue, *C.S.I.* DVD commentary, 2004)[3]

"Who Are You? I Really Wanna Know!" The opening sequences of *Crime Scene Investigators (C.S.I.)* television's "most watched drama" is a frenetic montage set against *The Who's* 70s rock anthem. The "who" in question here is the unknown subject, or "unsub," that has committed a crime, but unwittingly left behind traces of his or her identity. The opening montage of highly abstract, high-tech images, intercut with shots of agents peering into microscopes and scrutinizing computer-generated images, conveys the stylized spectacle of forensic science representation. Each episode of *C.S.I.*, and its numerous imitators, depicts a stunning array of forensic devices at work--ALS lights make trace evidence burst into the field of vision, comparative microscopes match hair follicles, lasers criss-cross a room in a reconstruction of gun-fire. These contemporary "scientific detectives" replace Sherlock Holmes's humble magnifying glass with sophisticated new imaging technologies. In the forensics laboratory, investigators' faces illumine as they peer into light boxes or scrutinize victims' bodies with fiber optic devices. Under these specialized forms of light and imaging the most mundane of trace evidence—hair follicles, carpet fibers—become startling images, digitally enhanced to increase both their visibility and their aesthetic appeal. As the crime scene investigators gaze upon these physical traces of crime and identity, they literally "piece together" an entire account of crime and culprit, creating a forensic narrative that fits minute elements of evidence into a cohesive chain of causal links.

This project takes as its starting point the contemporary cultural fascination with the "forensic." Images from forensic science regularly illustrate popular magazines like *Scientific American, Time,* and *Newsweek* where hypermediated "traces" of evidence generated from an array of newly enhanced imaging technologies—scanning electron

microscopes, fiber optic light sources, mass spectrometers—appear colorized and sharpened in order to enhance their visual pull. In the last decade, televised narratives depicting forensic science have also exploded on the popular scene, each conveying an apparently radical and revolutionary form of detection that appears infallible in its scientific exactitude. While in the late 70s, *Quincy* became the first television show to highlight the use of forensic pathology in solving crime, over a decade later the depictions of methods of forensic detection have moved the form away from the intuitive detective-work of the crusading and somewhat idiosyncratic Quincy. *C.S.I.*, leading in the primetime drama ratings for the last three years, has spurned a number of spin-offs—*C.S.I. Miami*, *C.S.I. New York*. Meanwhile other networks compete with dramas such as *Crossing Jordan*, *Without a Trace*, *Navy C.I.S.*, *Cold Case* and *Medical Investigation*. With the success of forensic detective fiction and shows such as *Autopsy*, cable producers have vastly exploited the entertainment value of forensic science over the last decade, with forensic shows becoming the mainstay of "educational" and "investigative" channels, CourtTV, Discovery, and TLC, and reaching its pinnacle with the recent glut in primetime network programming.[4] Forensic detective fiction continuously occupies the bestseller lists, most notably Patricia Cornwell, whose Kay Scarpetta series, depicting a forensic pathologist-cum-detective, has become the archetypal formula for the multitude of imitators that have followed.[5]

Since the discovery and later acceptance of DNA identification techniques in the early nineties, and especially the trial of O.J. Simpson that would bring such technologies to the forefront of public debate, the forensic mode of narrative has fast become one of the most dominant truth-telling paradigms of our time. By asserting that the tracing of

empirical evidence can always lead to whole truth, these forensic narratives control historical account by fixing the truth of events and identities. In popular rhetoric, forensic science cannot only flawlessly resolve the question of "whodunit?" by simply interpreting the material evidence, but even more miraculously it can reach across time, rewriting histories and identities, revealing to us the "real" identity of Jack the Ripper,[6] the sexual relations of Jefferson and his slave Sally Hemmings,[7] the genetic core of Beethoven's "genius,"[8] or the "real" face of Jesus Christ.[9]

Formally a term used to refer to argumentation within a legal context, "forensics" has now become a cultural shorthand that denotes an entire set of scientific procedures and practices conducted in the name of the law.[10] "Forensics" suggests not simply the scientist as witness making an argument within a court of law, but teams of forensic investigators and their methods, from field work such as evidence collection, to high-tech chemical processing and imaging and the autopsying of dead bodies. This co-opting of forensics away from the law is thematized in the majority of the fictionalized representations of forensics; here courts of law are largely absent from the plot, and lawyers are only represented to depict the inherent and subjective corruption of a legal system gone awry.[11] "Forensics" is now a term far removed from connotations of argumentation and debate; while truth might be negotiable in the criminal justice system, these plots assert, the definitiveness of the scientific method is far more absolute and trustworthy than any evidentiary truth derived in a court of law.

The current intrigue with forensic science can be tied directly to advances in forensic identification that have apparently "revolutionized" our ability to identify individuals, specifically DNA typing, and also to the dramatic advancement in visual

imaging made possible with the advent of digitally enhanced technologies. From its inception, the rhetoric surrounding DNA typing has been hyperbolic in tenor, emphasizing how crime has met its ultimate foil as we stand at the "dawn of a new age." Such renderings are characterized by the assumption that changes in technology will precipitate changes in society, in the ways in which we understand crime and even in identity itself. Progressivist accounts of the history of forensics thus begin with the invention of photography and the crude mugshot, and end with a discovery that brings the forensic drive to know to its logical culmination, the discovery of DNA "fingerprinting" in 1984 and the ability to "identify" an individual at the very level of the gene.[12] *A Question of Evidence: The Casebook of Great Forensic Controversies, from Napoleon to O.J.,* for instance, charts the progress of forensics by examining fifteen controversial case studies. Author Colin Evans writes of this advancement:

> The evolution of forensic science has been a long, complex, and fascinating journey. For the most part it is a story of triumph, a succession of victories--some large, others barely noticeable--in a never ending battle to close the loopholes through which criminals slip. This progress has been exponential. Although the first tenuous steps in scientific crime-solving came as early as the eighteenth century, the giant strides didn't really happen until after World War II. With crime levels soaring through the roof, it became blindingly obvious that the old standbys of crime detection--shoe leather, informants, and methodical elimination (though these still form the bedrock of any investigation)--were not enough to stem the onslaught. New weapons were needed.

> Enter the crime lab. Suddenly the electron microscope, the spectrograph, gas chromatography, DNA typing, and a hundred and one other sub-branches of the forensic detection tree became indispensable allies of the investigating officer. (Evans 1-2)

Newspaper and feature articles from the late eighties and early nineties that detail the new technologies similarly exploited a sense of change, where "traditional" detection, embodied (somewhat erroneously) by Sherlock Holmes must move aside for pure science. As such, crime is now, more than ever, a question for empirical scientists and geneticists: "A late twentieth-century Holmes would be glad of his Watson," a 1989 article in *The Economist* declared, for as "a modern medical man, Dr. Watson would be well versed in genetics. He would know how a drop of blood or semen or a hair follicle could—at least in theory—prove that a certain person had been at the scene of a crime." Detective work had been removed from the streets and placed in its "proper" home, the laboratory (Begley 81).

Contemporary representations and discourses surrounding forensics, and specifically DNA, hyperbolically assert that we are at the "dawn" of a new age. Forensic science is unsurpassable, the rhetoric asserts, and such revolutions in technology will no doubt precipitate changes in society and in the ways in which we understand crime and even identity itself. As a culture we have become preoccupied with the rapid advances made in all technologies that intervene in the production of identity and the very notion of what it means to be human: computer science, genetic-engineering, organ transplantation, cosmetic surgery, *In Vitro* fertilization.[13] Mid-to-late nineties rhetoric surrounding the advent of the internet and communications technologies, for instance,

both reveled in and despaired over the loosening of identity from body—digital space enabled the realization of a Cartesian paradigm where pure mind (or self) could interact in a space completely free of the body.[14] While the hyped tenor of this rhetoric has now abated somewhat as the internet moves into the mainstream of everyday life and interaction, a new discourse emerges in which identities are "networked" or "distributed" in new spaces of interaction and cognition. Banks now tap into (and create) anxiety over identity-theft; recent commercials by Citibank playfully dramatize how a nefarious internet hacker (oddly, of doubtful intellect) can appropriate the identity/body of an unsuspecting credit card holder.

Theoretical discourses have described the condition of postmodernity as a period of profound epistemological and ontological change that is triggered by the rapid acceleration of such technological advances in communication and representation. Donna Haraway's description of postmodernity as a "translation of the world into a problem of coding" celebrates our "cyborg ontologies" and the decentering of the modernist subject (164). Frederic Jameson's distinctly more pessimistic version of the postmodern as "hyperreal" adopts the concept of "hyperspace" a term that refers to a profoundly alienating dislocation between the subject and the material world, and the loss of the integrated subject of modernity (10-11). Baudrillard's assessment of the postmodern as a "simulacrum" signals a loss of the bounded body as grounds for subjective experience: the individual can "no longer produce the limits of his own being"; he is "now only pure screen, a switching center for all the networks of influence" ("Ecstacy" 132-133). In light of the hyperbolic rhetoric concerning the breakneck speed at which technologies are accelerating, the theories of both Baudrillard and Jameson take

on a deeply prophetic tenor as the human subject is "reduced" to code, digitized and decentered as point elements across a global, asynchronous and non-linear network.

But the view of technology as the locus for epistemological change and the "instruments" or neutral tools that trigger cultural change require careful scrutiny. Judy Wajcman reminds us that "technology is more than a set of physical objects or artifacts. It also fundamentally embodies a culture or a set of social relations made up of certain sorts of knowledge, beliefs, desires, and practices" (149). According to this Foucauldian usage of the term, technology here is understood as organized systems or "apparatus" that produce a range of representations and effects at the very level of the body and subjective experience.[15] "Technologies" are thus the processes of interaction between institutional, discursive, and material effects that interdependently produce meanings or "truth effects" at the level of the human subject. Moreover, in this production of knowledge, technologies articulate power relations that, in turn, become part of an apparatus of control. "Discipline," for example, "may be identified neither with an institution nor with an apparatus; it is a type of power, a modality for its exercise, comprising of a whole set of instruments, techniques, procedures, levels of application, targets; it is a 'physics' or an 'anatomy' of power, a technology" (Foucault, *Discipline* 215). In *Discipline and Punish,* for instance, Foucault describes how Bentham's panopticon was a form of disciplinary surveillance that induced "in the inmate a state of conscious and permanent visibility that assures the automatic functioning of power" and so "represented the abstract formula of a very real technology, that of individuals" (201, 224). The Foucauldian concept of technologies therefore becomes useful as a framework for investigating how taken for granted "truths" are culturally constructed.

To interrogate the discourses surrounding forensic science and its instrumental technologies, then, is also to interrogate the fundamental modes of representation, the discursive technologies that have mediated and produced specific concepts of identity or identification. The "facts" of forensic science are produced by more than the instrumental technologies of forensic science. As Ann Balsamo has argued, the meaning of such new instrumental technologies is produced by "a complex arrangement or articulation of texts, narratives, institutional structures, economic forces, bodily practices, and other material effects." This arrangement, in turn, establishes "a set of possibilities for the further development and deployment of new technologies" (10).

This project considers a range of material and discursive technologies that produce the compelling truths of forensic science, and looks specifically at how the "minute" elements at the center of the forensic narrative--the "traces" of crime and identity--are transformed into such "definitive" facts about history and identity. What are the technologies that produce such truth-effects? Clearly, the most explicit technology or "anatomy of power" that informs these truths is that surrounding positivist science. The central truth-effect of the forensic narrative is that truth itself is always knowable and identity always traceable through the scientific discovery and interpretation of empirical facts. In its invocation of science and its privileging of positivist logic in determining questions of truth and identity, the forensic narrative always posits truth as objectively verifiable, first via the analysis of the trace elements at hand, and then by the subsequent organizing of these elemental "facts" into a larger factual and definitive account of past events.

The introduction to *Crime Investigation*, one of the first U.S. textbooks devoted to

the subject of forensics, dramatizes this central tenet of the science:

> Wherever he steps, whatever he touches, whatever he leaves, even his fingerprints or his footprints, but his hair, the fibers from his clothes, the glass he breaks, the tool marks he leaves, the paint he scratches, the blood or semen he deposits or collects—all these and more bear mute witness against him. This is evidence that does not forget. It is not confused by the excitement of the moment. It is not absent because human witnesses are. *It is factual evidence.* Physical evidence cannot be wrong; it cannot perjure itself; it cannot be wholly absent. . . . The laboratory must be devoted to this study and understanding if the all-important traces which can speak so eloquently of guilt or innocence are to be heard. To this study must be brought all the resources of science and human understanding if the message is to be clear, complete, and unequivocal. (Kirk 4-5)

Strikingly, the technical processes of mediation, and the narrative processes of rendering empirical facts into probative evidence (or mute witnesses) are completely elided in this rendition. Instead the passage dramatically highlights the totalizing power of science; physical evidence is asserted as utterly neutral, a pure and objective form of evidence that transparently and without apparent mediation conveys a truth that is "clear, complete, and unequivocal." Indeed, science and reason appear to have found their zenith in this forensic domination of nature, truth, and identity; participating in the broader epistemological drive to know that defines enlightened modernity, the instrumental

technologies of forensic science are conveyed merely as the impartial tools that reveal these *a priori* truths.

Such characterizations veil the fundamentally ideological operations of science, which claims sole authority to represent the objective world of nature. Trace "speaks" a truth because it is an object of nature, a material fact that cannot but tell the truth. But scientific facts—the immutable aspects of the natural world—are in fact fabricated in particular sites through rhetorical devices. Paradoxically, though fabricated, "they are simultaneously certified as not fabricated, and therein lies the key to their ideological power" (Brodwin 3). Indeed, another arresting aspect of Kirk's rendering is the fundamentally panoptic forms of surveillance that it connotes. The individual, as an unknowing subject of a disembodied, techno-scientific gaze, cannot but help betray himself. Nowhere to hide, the individual--just by existing in the world--is always visible, traceable, and uniquely identifiable. It is through such optics of seeing, Foucault writes, that modern society exercises its controlling systems of power and knowledge. As a disciplinary technology, forensic science is an instrument of "permanent, exhaustive, omnipresent surveillance, capable of making all visible" even while its own ideological operations remain invisible (197). Thus, even though contemporary representations of forensic science create stunning visual spectacles of its images and devices, such emphases effectively obscure the discursive and ideological technologies that invest forensics with such power.

This dissertation traces the discursive technologies that inform this positivist paradigm of truth-telling, and takes as its theoretical premise that the self-evident truths of forensic science are actually culturally produced, institutionalized, and negotiated.

Through a series of critical examinations that address significant moments in the history of forensic methods of identification, I investigate the narrative processes whereby "trace elements" become truth-effects that supply "whole" truths about crime and identity. In doing so, I also identify some of the central contradictions, anxieties, and instabilities that have inhered in the forensic method and its attendant narratives since its inception. More concerned with modes of telling than with its conclusions, the forensic paradigm is less troubled with arrival at truth than in privileging its own method, a method that is always an end to itself. In turn, I am less concerned with the scientific credibility of the "truths" arrived at by forensic narratives (though oftentimes these truths are highly suspect) than with how forensics operates narratively as truth-telling paradigm. I do not provide a comprehensive history of forensic science or its popular representations, but rather investigate how forensic technologies of identification and their products--photographs, fingerprints, DNA profiles--"identify" individuals, and thus themselves operate as discursive technologies that produce disciplinary truth-effects at the level of the individual.

In *Discipline*, Foucault describes how the development of such institutions as the bureaucratic criminal archive and the disciplines of the social and hard sciences represented a new aspect of disciplining the body that underpins the epistemological transformation of the human subject as the object of enlightened thought. For Foucault, the project of enlightenment is defined in its drive to know through the scientific domination of nature, particularly the "nature" of human identity. Inextricably linked to this drive, is the way in which in the nineteenth century dispersed processes of power coincided with these new modes of knowledge that are predicated on rational and

positivist modes of truth-telling. The instrumental technologies of forensic science of contemporary forensics are thus discursively entrenched in the disciplinary, discursive technologies described by Foucault.

Richard Thomas's *Detective Fiction and the Rise of Forensic Science* articulates the relation of the literary forensic narrative to the transformation of the subject described by Foucault:

> The nineteenth century succeeded in creating this elaborate social machinery to examine, classify, and analyze every conceivable variety of bodily activity and anatomical aberration. It also invented this resilient and popular literary genre so centrally concerned with the act of investigating bodies, exposing and submitting for scrutiny the most carnal of secrets, and offering as evidence brutal facts about the body in order to control its functioning—either by explanation or confinement. (17-18)

Within these earlier forensic narratives, Thomas argues, the body is made to unwittingly speak for itself through the "jagged lines of the heart recorded by the lie detector, the lineaments of the face imprinted on a mugshot, and the swirling patterns of the skin inscribed in the fingerprint" which "all render the body as a kind of automatic writing machine." The contemporaneous genesis of the detective narrative, which represented the forensic technologies deployed in the project of tracing identity, "helped to make nineteenth-century persons legible for a modern technological culture" (Thomas 17).

Thomas builds upon the work of Foucault in this interdisciplinary study, the first and only book-length work to build upon such criticism in order to critically examine the relationship between the development of forensic science in the nineteenth century and

the invention of the new literary genre of detective fiction in Britain and America.[16] Examining the criminal body as a site of interpretation and enforcement in a wide range of fictional examples--from Poe, Dickens and Hawthorne through Twain and Conan Doyle to Hammett, Chandler and Christie--throughout this literary study, Thomas interweaves analysis of the rhetoric surrounding forensic science and its technological advances--from the lie detector to fingerprint classification--and illuminates how such advances were accommodated and negotiated within literary fiction.[17]

This project intersects with and extends Thomas's interdisciplinary work by examining further the intersections of popular culture and technological advances in forensics, and by connecting the contemporary concept of "the trace" to a larger discursive and intrinsically narrative tradition that reaches back to at least the middle of the nineteenth century. The cultural and technological history of forensic science repeatedly overlaps with popular representations of that science. Since the nineteenth century, forensic science has furnished the raw materials and imaging technologies that can be deployed in the narrative spectacle of popular forensic narratives. At the same time, since the inception of institutionalized forensic science in Europe and the United States, popular generic narratives of detection have played a central and influential role in refining of the forensic method itself. Exploring the symbiosis between the rarefied domain of forensic science and popular narrative, this project shows how the narrative technologies of the forensic are intrinsically interdiscursive and that--despite hyperbolic assertions of technological and epistemological revolution--we understand our "identifying traces" through paradigms of truth-telling that are part of this broader historical trajectory.

In the contemporary milieu, forensics-based reality crime shows have captivated audiences and drawn accolades from programming executives. Forensics clearly sells. Executive vice president of the Discovery Channel pinpoints the fascination of the forensic narrative for both its revolutionary potential and its scientific veracity: "All the science and technology that goes into these shows--much of which was considered science fiction 20 years ago--is now science fact and part of crime-based programming" (Umstead, "Under the Microscope" 17). Contemporary plots like those of *C.S.I.* consistently tap into this appeal to the authority of science, especially the ability of new technologies to image in stunning detail what was not previously available to the eye. Such representations transform the most mundane of routines into visual spectacles, the unglamorous figure of lab technician into sexy protagonist who wields the ultimate weapons for "making the dead speak." Such hype not only glamorizes but, at times, even fabricates devices for the procedures of forensic science. Tests of DNA, which would ordinarily take weeks or even months to process, are performed on-the-spot in the laboratory; agents on *C.S.I* are now equipped with completely fictionalized "DNA readers" akin to pregnancy tests: "a red line means you're a match; no line means you're not."[18]

Despite the dramatic license taken with the timing and forensic possibilities of certain devices, it is clear that the appeal of forensic narratives like *C.S.I.* stems *not* from the pleasures of science fiction, but rather from a sense that such procedures reflect "science fact." Indeed, in courtrooms, lawyers and judges are noting what is coined as the "*C.S.I.* Effect" where jurors, newly educated in the procedures of forensics, are insisting on more empirical evidence during trial.[19] In the 2003 trial of millionaire

Robert Hurst, who was accused of murdering and dismembering a neighbor, defense attorneys hired jury consultant Robert Hirschhorn who explicitly targeted jury members "familiar with shows such as *CSI: Crime Scene Investigation* to spot the importance in such a gap of evidence." Surveying 500 people in the jury pool, "the defense found that about 70% were viewers of CBS' *CSI* or similar shows such as Court TV's *Forensic Files* or NBC's *Law & Order*." Hirschhorn, quoted in *USA Today,* noted that talking about science in the courtroom used to be "a real jury turnoff." But now that "there is this almost obsession with the (TV) shows, you can talk to jurors about (scientific evidence) and just see from the looks on their faces that they find it fascinating" (Willing 1A).

The influence of popularized or generic forensic narratives is wide-ranging, extending far beyond television or literature's representation of "real life" techniques. Forensic science may supply the science and technological apparatus for narratives and spectacles in popular culture, but at the same time, forensic science regularly employs the representational conventions of generic narrative. Indeed, forensic science itself has benefited immensely from this public intrigue. The National Science Foundation has recently developed curricula units on forensic science for the teaching of middle and high school science so that students can learn the "dry facts" of chemical compositions and physics equations within the exciting context of crime detection (Applebome 1). The National Science Teacher's Association, for instance,

> [c]apitalizing on the groundswell of interest in forensic science television shows such as *CSI* and *Forensic Files* . . . has teamed with Court TV to develop exciting new curriculum units on forensic science for middle and high school students. The units help students solve intriguing mysteries

using real science, including biology, chemistry, and physics. ("Forensics in the Classroom")

Recent studies have also revealed that enrollment in forensics program within colleges and universities have grown exponentially since the O.J. Simpson trial, which, as I discuss below, brought DNA typing firmly into the popular lexicon. This upsurge has spiked over the last three years, a phenomenon administrators directly attribute to the extreme popularity of *C.S.I.* with their applicants.[20]

In turn, creators of fictional forensic narratives become elevated to the status of experts-in-the-field or forensic experts lend their hand to the creation of fiction. Remarkably, Patricia Cornwell, though not a certified forensic scientist, currently serves as Chair of Board of Directors of Virginia Institute of Forensic Science and Medicine, where she lectures and works in training. The institute's timeline of milestones in forensic history asserts: "Much credit should go to Cornwell for launching Forensic Science and Medicine into the public consciousness. The Scarpetta novels are, altogether, nothing less than the evolving history of Forensic Science and Medicine, wrapped in compelling, meticulously researched narratives" ("VIFSM Milestones"). The publication of *Postmortem* features in this chronology as a milestone that ranks on a par with the discovery of the double helix, suggesting that her contribution to the field is akin to that of Watson and Crickes'. Joining the ranks of Cornwell are writers like Kathy Reichs, a fully credited and renowned forensics expert who rivals Cornwell with her new detective series starring Tempe Brennan, a crime-fighting forensic anthropologist. Such overblown appeal to the scientific expertise of literary authors or the belabored emphasis on the use of technical consultants for shows like *C.S.I.* works to reify the scientific credibility of

forensic narratives, an appeal to a certain scientific realism that is central to their influence.

The case of O.J. Simpson, especially, raised public awareness of forensic science through DNA evidence. The trial also triggered debate over the authoritative appeal offered by such hard "facts." Ann Donahue's statement (one of the opening quotes to this chapter) suggests that while fictional forensic narratives provide a satisfying "definitiveness" in its airtight reconstructions of causal relations, the Simpson trial seemed to offer anything but resolution. The circus-like atmosphere of the trial in 1995 highlighted, rather, the inherent failure of the legal system. Highly performative and malleable, justice could be "bought" with the purchase of a "dream-team" who could expose the corruption of forensic science in the hands of a deeply flawed legal system, even while it upheld the authority of forensic science in theory. Despite a battery of other forms of evidence, the fact that the prosecution possessed "conclusive" DNA evidence swiftly became a central focus in the trial and its surrounding commentary.[21] Among Simpson's defense attorneys were Barry Scheck and Peter Neufeld, cofounders of the Innocence Project, an organization devoted to appealing convictions based on "junk science" with the aid of post-conviction DNA testing. Scheck and Neufeld launched an attack in which the validity of forensic DNA evidence was accepted in principle, but undermined in fact through criticism of the sloppy (and perhaps fraudulent) tactics of Cellmark[22] and the L.A.P.D., whose forensic technicians, Dennis Fung and Andrea Mazzola, had committed numerous procedural errors in recovering, storing, and transporting the evidence to the LAPD crime laboratory. This evidence, along with the

taint of institutional racism supplied by Furhman, who would brag about fabricating evidence, led to an acquittal of Simpson.

Despite the defense's successful attempt in the Simpson case to undermine the scientific credibility of DNA evidence in the minds of the jury, popular media commentators could not understand how the jury could ignore the "overwhelming" DNA evidence in the case. The blood on the infamous black leather glove was proven "untraceable," but within the mainstream media and (largely white) popular opinion "the glove fit" and bore the traces of Simpson and his victims.[23] Remarkably, in a case where forensic science appeared to be far from infallible in its potential, DNA profiling came of age as a widely accepted and incontrovertible form of forensic identification. Not only did the trial appear to trigger widespread acceptance of the technique within the scientific community, it brought the science of DNA testing into the broader cultural discourse. Within the scientific community, just two months before the trial began, Eric Lander, pioneer researcher in DNA typing, published an article in *Nature* stating that any disputes concerning DNA identification are now laid to rest. In the article Lander notes that the general public's understanding of the science has been enhanced by the *ad hoc* lessons of popular press:

> The US public, usually indifferent to matters scientific, has suddenly become obsessed with DNA. Nightly newscasts routinely refer to the polymerase chain reaction (PCR) and even tabloids offer commentary on restriction fragment length polymorphisms (RFLPs) (202).

The apparent shift from "indifference" to "obsession" noted by a somewhat bemused Lander fuelled not only the tone of the trial coverage within the mass media, but also a pronounced upsurge in the visibility of forensic science in general.[24]

If the Simpson trial exposed trial law's spectacle as an endless parade of litigation, point of view, and verbal account, the forensic detective narratives that emerged almost directly in its aftermath appeared to counter with a higher form of justice—that of pure science. The invocation of science displaces trial-procedure within a positivist and univocal account of the "facts" in an airtight and scientifically verifiable version of the truth. Within these "scientific" narratives, the relation of law to science is far more harmonious than in reality, the answers provided far more definitive. Indeed, in direct response to this appeal, Court TV, once the cable bedrock of such televised trials shifted its programming focus significantly—away from trial coverage, and toward the representation of forensic science. The channel's salvation since 2003, when ratings dropped exponentially, came with its new investigative show *Trace Evidence: The Case Files of Dr. Henry Lee,* which explicitly focuses on how Lee interprets trace evidence to pursue truth in cases that have left others perplexed and confused. Tapping into "audience's fascination with forensics and mystery," producers responded with a formula that was devoted to making forensic science "accessible, understandable and riveting" (Umstead, "CourtTV Emphasizes Investigation" 9).

Shows such as *Trace Evidence* and its fictionalized counterparts hinge upon a central narrative principle: to chain these traces—a partial print, a skin cell, or blood spot—into a gapless exposition of cause and effect, and so expose the largest and most "unsolvable" of crimes. The ability of new technologies to render *visible* minute

elements, and to chain such elements into a narrative of guilt, is central to this translation of forensics into something "understandable and riveting." Forensics visual culture is saturated with hypermediated images of trace evidence. HBO was one of the first networks to feature forensics as part of a show that focuses on real-life crimes. The channel's annual program *Autopsy*, part of its America Undercover documentary franchise, debuted in 1994, and in the following years rapidly escalated in the ratings." *Autopsy* producers, while they originally balked at the notion of "revealing" the secrets of forensics in such exact technological and too-morbid detail, had no idea that it would have such popular appeal; it soon became clear that the viewing public was "taken by how the examination of such minute elements as fingerprints, saliva cultures, hair follicles and stomach contents in a forensics laboratory could unearth evidence that could solve a seemingly unsolvable crime" (Umstead, "Under the Microscope 1).

Ann Donohue encapsulates the narrative pleasure offered by the typical *C.S.I.* plot with her succinct statement, "you spray, there's blood, there's guilt," and directly correlates this satisfaction with how "it's the smallest things" that will break a case. Such fixation on the empirical and self-evident "facts" of a crime, however, belies the complex level of mediation required to make this move from blood to guilt. As in Kirk's textbook description of the processes of forensics, Donahue's lock-step characterization conveys forensic detection as linear and seamless, trace evidence simply as transparent images of guilt. In shows like *C.S.I.* for instance, pivotal plot points occur within the laboratory, as investigators analyze trace evidence to a soundtrack of thumping techno music. Dialogue suspended, such scenes allow viewers to participate in the pleasure of looking and discovery, the most commonplace of evidence—a fleck of nail polish, a tire mark—

provides startling revelation. Stylistically, such scenes are lit so that protagonists "blend" with the machine, bathed in the green light of the computer screen, or phosphorescing like the ALS light source. In other scenes, directors use dramatic camera angles and zooms that have become the show's trademark—these techniques represent how the penetrative eye of the investigator can literally "see" inside the microscopic recesses of a victim's body, or instantly magnify a stray fragment of evidence that lingers at a scene. In these new incarnations of police procedurals or "cop shows," looking through a microscope literally replaces the hot pursuit chase sequence, infinitely more fascinating and exciting as vision appears unmediated, even while the technologies of that mediation are all around.[25]

Indeed, the repeated integration of montage editing within television dramas like *C.S.I.* underlines the distinctly positivist logic of the trace narrative, where the truth of crime and criminal are arrived at within purely material terms. But despite this hyperbolic assertion that only science can reveal truth and identity, *C.S.I.,* in fact, relies upon much more familiar conventions and plot devices to supply the revelation of identity—the very "old standbys of crime detection" that were apparently cast to one side in the face of new methods. "Traces" may speak, but not loudly enough. As such, *C.S.I.* agents take on responsibilities that far exceed the typical terrain of their real-life counterparts—not only analyzing physical evidence, but questioning witnesses. The revelation of truth and identity within these plots relies heavily upon televisual conventions that require interpretation of suspects' facial expressions as they undergo interrogation.[26] The refrain of "Who Are You?" in the opening credits of the show, then, while directly referring to the processes of forensic identification, more obliquely refers

to the revelation of individual *character*: that identity or "Human Nature" that forensics, and the positivist logic of the trace narrative, *cannot* account for.

While forensic truth inheres in the empirical facts, the quantifiable and recognizable, that truth is consistently--if not overtly--found lacking. As agents move smoothly among the crime scene and lab and the interrogation cell, between two fundamentally different modes of discovering truth, the concept of identity as a nominalist and purely material effect of identification consistently slips away from the material into a more metaphorical concept of essential individuality. The positivist bent of the forensic narrative, which locates truth in only that which is materially verifiable, would appear to make the genre fundamentally hostile to these metaphorical understandings of identity, of "Human Nature." But as I explore further in Chapter Four, this slippage typifies contemporary popular forensic narratives, where plot conventions consistently resort to distinctly non-forensic and metaphorical modes of truth-seeking.

Nonetheless, what unites these narratives is the sense in which the authority of science is always recuperated and maintained; moments of revelation always return us firmly back to the crime lab. Adorno and Horkheimer note that in "the anticipatory identification of the wholly conceived and mathematized world with truth, enlightenment intends to secure itself against the return of the mythic" (49). If the tendency towards the metaphysical to explain characters or events reveals instability within enlightened epistemology, in turn, the forensic paradigm overly compensates with a spectacle of images as facts that assure that it is science that will always triumph, filling in any gaps and glossing inconsistencies.

This tendency of forensic narratives to revert to alternative, metaphorical modes of truth-telling has characterized the form from its inception. As a profoundly positivist paradigm for discovering truth, the forensic narrative participates in the larger project of enlightened modernity and also inherits its attendant anxieties. Indeed, it is precisely this problem of reconciling the metaphorical with empirical knowledge that is ambivalently thematized in Edgar Allan Poe's Dupin series. Benjamin referred to Poe as "the first to attempt the scientific story, a modern cosmogony, the description of pathological phenomena. These genres he regarded as exact products of a method for which he claimed universal validity" (43). The key procedure of the forensic detective story, where an aspect or fragment substitutes for an absent whole, is first dramatized within the well-known scene in "The Murders at the Rue Morgue." Here Dupin deftly reads the physical traces of the violent murders—the massive handprint that left "dark bruises and deep indentations of finger-nails" on the daughter's neck, and the scrap of non-human hair—to reveal that the crimes must have been committed by a "large fulvous Ourang-Outang of the East Indian Islands" (304-5).

This forensic approach within the narrative procedure of the 'tale of ratiocination' appears on one level to radically disavow the need for any symbolic explanation of its action and any further "resolution" of its traces than that offered by the synecdochical logic of reading the orangutan in the finger smudges, the sailor from the greasy ribbon. In "Rue Morgue," the various clues acquire their meanings through being recontextualized rather than through what Dupin calls their "finite truths" (Priestman 54). Here we are "being taught to feel for a different order of meaning, where 'direct' access to metaphorical depth is replaced by our willing acceptance of the horizontal, metonymic

surface of the narrative" (49). Nonetheless, this approach to truth-telling is at the same time undercut by a markedly contradictory attitude towards these empiricist principles of detection. Poe's profoundly ambivalent attitude toward the genre he invented has been noted by many critics.[27] In one letter about his detective fiction Poe was to ask:

> [W]here is the ingenuity of unraveling a web which you yourself have woven for the express purposes of unraveling? These tales of ratiocination owe most of their popularity to being some thing in a new key. I do not mean that they are not ingenious—but people think they are more ingenious than they are—on account of method and *air* of method. (Poe, *Letters* 38)

This resistance is echoed through Poe's protagonist, who in "Rue Morgue" denigrates Paris's "greatest" detective, Vidocq, as a man who "erred continually by the very real intensity of his investigations." Vidocq, Dupin pronounces, was a man who "impaired his vision by holding the object too close. He might see, perhaps, one or two points with unusual clearness, but in doing so he, necessarily, lost sight of the matter as a whole. There is such a thing as being *too* profound, Dupin argues: "Truth is not always in a well" (290). Similarly, the Prefect in "The Purloined Letter," errs by looking too "deeply" at minute surface details. "[B]y the aid of a powerful microscope," he has had his men "scrutinize each individual inch through the premises." "Had there been any traces of recent disturbance we should not have failed to detect it instantly. A single grain of gimlet-dust, for example, would have been as obvious as an apple. . . " (436, 437). Despite the application of powerful imaging tools, the truth of crime cannot be discovered through such rigorous attention to the physical traces of a crime. Dupin

critiques their strictly methodical approach, where the privileging of a specific method forecloses the ability to see truths via different means, a failure that stems from its inability to broaden its sense of human ingenuity:

> What, for example, in this case of D_____, has been done to vary the principle of action? What is all this boring, and probing, and sounding, and scrutinizing with the microscope, and dividing the surface of the building into registered square inches—what is it all but an exaggeration *of the application* of the one principle or set of principles of search, which are based upon the one set of notions regarding human ingenuity, to which the Prefect, in the long routine of his duty, has been accustomed?" (442-3)

These declarations might also be viewed as a critique of the very genre Poe perfected; the qualities Dupin denigrates in Vidocq and the Prefect--attention to detail, intensity of investigation, and the ability to see the relevance of minute details--would seem to be the prerequisite skills of any detective. Yet within the tale, this purely forensic approach to the question of identity resolutely fails, for the inspector fails to stand back from the method itself, and consider the question of the character of the criminal—who is already known to them. The prefect lacks the imaginative skill to consider the interior motives and character of the criminal who is intellectually and imaginatively superior to the police: "when the cunning of the individual felon is diverse in character from their own, the felon foils them of course." Poe succeeds, for he is can identify *with* the D_____, who symbolically functions as his double. The Dupin tales thus operate on two levels: the first is symbolic, where there is a metaphorical parallel between the detective and the criminal, which converts the story into "a richly

metaphorical psychodrama." But on the second level, this narrative principle is prohibited:

> Instead we pursue the solution by reference to numerous disparate fragments broken off, as it were, from a number of different contexts but all lying on, rather than under, the surface of the tale. The new genre, then, radically replaces one kind of formal unity with another. The synchronic uncovering of a unified meaning operating throughout the text becomes a diachronic juxtaposition of fragments whose originating contexts have no satisfying or 'deep' meaning in themselves, but only as they provide stepping stones to the next fragment and context. (Priestman 50-51)

Priestman's reading of Poe here identifies a central contradictory tension within detective fiction that privileges empirical, materialist modes of truth-finding that characterize forensic narratives. The "richly metaphorical psychodrama" found in Poe, finds its contemporary mutation in detective fiction and true crime narratives that feature detectives who practice psychological profiling.[28] While commonly referred to as "forensic" profiling, the fictional practices of this form of "identification"—which require protagonists to intuit and "get into the minds" of their adversaries to achieve a sense of close emotional association--are distinctly less "scientific" or methodical than the strictly forensic sense of identification--which is a system, as I discuss in the next chapter, largely based on taxonomic principles of description, that correlates identification with the act of identifying physical evidences of identity.

John Douglas, the behavioral profiler based at the FBI and the inspiration of plots like *Silence of the Lambs*, refers to his affinity to Dupin in the opening chapter of his

biography, *Mindhunter*. Dupin, Douglas states, "may have been history's first behavioral profiler" and "The Murder at Rue Morgue" the first "to represent the first use of a proactive technique by the profiler to flush out an unknown subject and vindicate an innocent man imprisoned for the killings" (32). Behavioral profiling, predicated on psychoanalytic principles and indebted to the empirical techniques of crime scene analysis, nonetheless figures in popular fiction on a more transcendental level. Douglas notes that such skills require "a lot more than simply inputting data and crunching it through." To be a good profiler, "you have to be able to evaluate a wide range of evidence and data. *But you also have to be able to walk in the shoes of both the offender and the victim"* (31). This duality and especially the tendency to slip between two modes of identification--forensic and intuitive--typify contemporary forensic detective fiction by authors such as Cornwell, Reichs, and Deaver. Like their televised counterparts, these narratives overtly insist upon the primacy of empirical methods of truth-seeking, while at the same time slipping into alternative modes of seeking the truth about "identity."

While on one level this contradictory trait might be viewed as a means to add "drama" to an otherwise dry set of evidence, the forensic narrative's reliance on such devices also points to an inherent failure within that mode of truth-telling, and also to deeper and longstanding cultural anxieties provoked by the scientific leveling of both identity and truth to the always material, measurable and fixable. In contemporary forensic narratives, trace evidence often signifies more than material "things"; it is transformed into something spectral, an uncanny sign that is evocative of that which is absent—the whole person. On one level, such figurings allow "trace" to signify something much more than "material" truths, and extend trace's effect—my discussion in

the final chapter of Cornwell's real life foray into crime detection looks specifically at this tendency. But this propensity for contemporary authors to slip into "profiling" mode, or to foreground trace's "uncanny" quality, I argue, are also examples of this slippage and symptomatic of this epistemological anxiety.

As a totalizing process where method is always decided from the start, the central premise of the forensic narrative is that crime is always solvable, and the criminal subject always locatable, through the application of positivist logic (which privileges empirical knowledge). Participating in the larger project and the epistemological transformations of enlightened modernity, where the scientific domination of nature, including human identity, is perceived as the means to secure whole truth, forensic accounts of criminal events and identities are monolithic, with the veneer of scientific objectivity and definitiveness consistently asserted.[29] The forensic method is thus self-enclosed, foregoing other modes of interpreting truth, positing that truth can only be found within the confines of its own method.[30] An enlightened approach to knowledge, the forensic method only recognizes "what can be apprehended in unity," the structure of which "has always been the same. . . . The multiplicity of forms is reduced to position and arrangement, history to fact, things to matter" (Adorno and Horkheimer, 28).

If the central problematic of the forensic narrative is the problem of identity, then it is necessarily bound up in the history of identification devices such as photography, fingerprinting and DNA profiling. This history is chronicled by the texts under examination in this dissertation. Each of the forms of identification discussed in this project--from the mug-shot to the DNA profile--is surrounded by popular discourses that illustrate the fascinating ways in which the forensic narrative takes shape within the

cultural imaginary. These discourses also reveal the instabilities that inhere within that narrative. Through this project, I trace this fascinating interplay between the concepts of identification and elusive individuality, and also demonstrate the intrinsically multi-discursive construction of the forensic paradigms of narrative and identification.

Chapter Two explores how images became truth-effects or "identifying traces" within early discourses surrounding photography and criminality. The evidentiary status of the photographic image drew from its ontological status as a literal trace of the real. But, as I discuss, the conversion of that image into an identifying trace required continual negotiation across a diverse range of contexts. These discursive contexts informed the kind of "truths" these images appeared to transparently reflect. As an object of science, the photographic image was transformed within these contexts as a means to claim sole authority in representing the objective world of nature. In rendering this knowledge more visible, photography's potential lay in its ability to "reveal" the hidden truths about human identity, and specifically that of "The Criminal." Photographic images within these varying contexts became "facts"—the immutable and measurable truths of human identity. As positivist approaches attempted to rationalize means of knowing the human subject, that subject was transformed into an object of technical intervention, a natural thing-in-itself.

The contexts under examination in this chapter—the early iterations of the "criminal portrait" within criminal archive and the rogue's gallery; the development of "pictorial statistics" within the biological determinist approaches of criminal anthropology; the refinement of the bureaucratic criminal archive and its "verbal portraiture"; and the advent of fingerprinting which could literally link individuals to

crime scenes—reveal a the belabored processes at work in translating the signs of the photographic image and later the fingerprint into identifying traces. This chapter charts the connection between the transformation of the visual culture of identification—the shift from photography to fingerprinting--to the broader epistemological transformation of "identity" into a nominal effect of identification.

A striking feature of the early discourses surrounding forensic science--whether in legal journals, the scientific press, or literary fiction--is its heavily intertextual and interdiscursive aspect. Chapter Three interrogates further the interchange between cultural narratives such as detective fiction and the real practices of forensic science in the early twentieth century—an interchange that was transatlantic as well as interdisciplinary. In an Anglo-American legal context where physical evidence became the most logically probative of "real" evidence, minute traces of evidence became increasingly probative within criminal trials. Minute traces became forms of the "perfect clue" woven into full narratives as *proofs* of events and identity. In light of science's increasing ability to particularize--to "throw light into the world of the invisible" and to identify criminals by "sound registers, by fingerprints, by blood analysis" within these discourses, identity becomes a truth derived from the literal matter of the body (Bayle 119). But the truth of both events and identity, it seemed, was discernible only through enhanced imaging technologies and the application of the forensic method to interpreting those traces.

This narrative working of trace into identity, performed by the lawyer or expert in the courtroom, was perfected by the refined genre of detective fiction. In the late nineteenth-century the archetype of this "scientific" detective was embodied by Sherlock

Holmes. In the United States, "Craig Kennedy, Scientific Detective," was coined as the "American Sherlock Holmes." Despite the huge popularity of this series, Craig Kennedy has all but faded from cultural memory. Certainly, despite the comparison to Holmes, the Kennedy series is defined less by the ratiocinative prowess of its protagonist than by its extravagant representation of forensic devices and techniques. The Kennedy tales are revealing, however, not only in their overblown depictions of the contraptions and methods of forensic science, but also for how author, Arthur Reeve, must compensate for a narrative based solely on the principle that the application of the scientific method will *always* root out crime. Within the tales, the empirical traces of identity are always translated into abstract data, equivalent to, and of no more metaphysical significance than the whorls and loops of a fingerprint, or the "automatic record" produced by a machine that reads the pulsations of the heart. This tendency, and failure, contrasts with the compensatory (and symptomatic) conventions for representing "identifying traces" that dominate contemporary literary detective fiction.

Chapter Four revisits the contemporary fascination with scientific detection, now "forensics," and also some of the central paradoxes concerning the trace. Craig Kennedy and the real-life scientific detectives of the early twentieth century wielded miraculous devices of fingerprinting and lie-detection, but contemporary forensic scientists and crime scene investigators appear to wield even more revolutionary tools for discovering the truth of events and identity. This contemporary re-emergence of forensic science, and its attendant narratives, coincides almost precisely with the advent of the most miraculous form of identification, DNA evidence. If the discovery of DNA's double helix as the "Code of Life" appears as the logical culmination of enlightenment positivism, early

rhetoric surrounding DNA "fingerprinting" would bring such knowledge to the identity of the criminal with devastating accuracy. But as a sign DNA triggers profound cultural anxiety over the loss of the individual, an anxiety that manifests itself across various narratives and discourses by a general reassertion of the individual or self, and specifically in the conflation of individuality with identification. In some registers, for instance, the legal debate surrounding DNA evidence, this reduction of identity to code incites anxieties over how such technologies, by exploiting the gene, violate rights to privacy and self-ownership.

Within the highly popular generic narratives of forensic detection, this conflation is evidenced by the consistent manner in which the trace paradigm for knowing identity is seamlessly exchanged for an epistemological paradigm that centers on motive and the interiority and character of the suspect. Within these plots trace evidence, and not simply DNA, is interpreted not only to identify an "unsub" (Unknown Subject) but is also transformed into an uncanny sign. As an uncanny sign, trace is precisely what is not identity, but that which is left behind. At the same time, trace connotes presence through contact.

In fictional forensic narratives, trace evidence often signifies more than material "things," but something spectral, an uncanny sign that is evocative of that which is absent—the whole person. Such figurings allow "trace" to signify much more than "material" truth and extends its effect. My discussion of Cornwell's real life foray into crime detection looks specifically at this tendency. The propensity for contemporary authors to slip into "profiling" mode, or to foreground trace's "uncanny" quality, I argue, are examples of this slippage and symptomatic of this epistemological anxiety.

Furthermore, this slippage, I conclude, suggests a heightened need for narrative to compensate for positivism's assault on "the individual." The advent of new technologies of forensic science and identification, and the glut of popular representations of those technologies, highlights not only culture's faith in and fascination with scientific modes of truth-telling. The forensic narrative's reliance on non-forensic devices also points to an inherent failure or instability within that mode of truth-telling, and to deeper and longstanding cultural anxieties provoked by the scientific leveling of both identity and truth to the always material, measurable and fixable.

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[1] Page 436.
[2] Page 169
[3] This commentary accompanies the season two episode of Crime Scene Investigation (*C.S.I.*) "Alter Boys."
[4] For discussion of marketing trends of forensics programming on cable television, see T. Thomas Umstead's "Under the microscope: viewers examine cable's forensics programming (forensic medicine continues to thrive as a topic for cable television programming)."
[5] Other highly successful American authors who have series featuring forensic scientists as detectives include Kathy Reichs and Jeffrey Deaver.
[6] As discussed further in chapter four, Patricia Cornwell's first true crime book, *Portrait of a Killer: Jack the Ripper, Case Closed,* proclaims to have discovered the real identity of the Ripper through the use of forensic science, and specifically DNA testing.
[7] The much-publicized application of DNA testing to the question of the Thomas Jefferson and Sally Hemmings connection produced a spate of articles in popular magazines about the science, and specifically its ability to rewrite history.
[8] See Russell Martin's 2001 publication, *Beethoven's Hair: an Extraordinary Historical Odyssey and Scientific Mystery Solved.*
[9] Thanks to advances in forensic science, the "Real Face of Jesus Christ" graced the cover of *Popular Mechanics*, December 17, 2002.
.[10] *The Oxford Dictionary of English Etymology* notes the term as "[p]ertaining to or connected with courts of law. Thus forensic medicine is medicine in its relation to law. In the *Essay*, Bk. II. 27, Locke describes 'person' as a forensic term, meaning that the point of describing something as a person, or finding that the same person was present on two different occasions, is essentially the attribution of responsibility. Thus if an octogenarian is found to be the same person as the twenty-year-old prison guard of sixty years ago, then he can be held responsible for the crimes of the latter; otherwise not." *The Oxford English Dictionary* notes the modern sense of the term, as an adjective "forensic" is "relating to or denoting the application of scientific methods and techniques to the investigation of crime" as well as "relating to courts of law." As a noun, "forensics" refers to "scientific tests or techniques used in connection with the detection of crime.
[11] In season three of *C.S.I.*, episode, "What You See is What You See," centered on the institution of a DNA dragnet within a High School. The lawyer for the school featured as antagonist in his invocation of civil liberty concerns with the incident.
[12] The numerous book-length works chronicling the history of criminalistics and forensic science include Colin and Damon Wilson's *Written in Blood: A History of Forensic Detection* (2003); Colin Evan's *The*

Casebook of Forensic Detection: How Science Solved 100 of the World's Most Baffling Crimes (1998) and *A Question of Evidence: The Casebook of Great Forensic Controversies, from Napoleon O.J.* (2002)

[13] For critical discussions surrounding biotechnologies and their attendant cultural anxieties see *Biotechnology and Culture: Bodies, Anxieties, Ethics* (2000) edited by Paul E. Brodwin; *The Visible Woman: Imaging Technologies, Gender, Science* (1998) edited by Paula Triechler, Constance Penley, and Lisa Cartwright; *Body Bazaar: The Market for Human Tissues in the Biotechnology Age* (2001) by Lori Andrews and Dorothy Nelkin.

[14] Classic examples from early critical and epochal discussions of digital media include Howard Rheingold's *Virtual Reality* (1991) Rosanne Allucquère Stone's "Will the Real Body Please Stand Up?" (1991) and Sherry Turkle's *Life on the Screen: Identity in the Age of the Internet* (1995).

[15] Foucault's *Discipline and Punish: The Birth of the Prison* (1979) and *The History of Sexuality, Volume I: An Introduction* (1978) laid the theoretical groundwork for such critical approaches. Critical works that interrogate contemporary discourses surrounding technology and science from this Foucauldian standpoint include Judy Wacjman's *Feminism Confronts Technology* (1991) Sarah Kember's "Medicine's New Vision?" (1995) Ann Balsamo's *Technologies of the Gendered Body: Reading Cyborg Women* (1996) Katherine Hayles's *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics* (1999)

[16] Work that specifically examines the intersections the use of technological apparatus to trace and classify the criminal body in the mid-to-late nineteenth-century, include Alan Sekula's "The Body and the Archive (1986); John Tagg's *The Burden of Representation: Essays on Photographies* (1988); Jonathan Crary's *Techniques of the Observer: On Vision and Modernity in the Nineteenth Century* (1992); Thomas Gunning "Tracing the Individual Body: Photography, Detectives, Early Cinema and the Body of Modernity" (1995)

[17] The academic study of detective fiction, especially, has waned over the last decade; the books that have appeared have been aimed more at a general readership than towards to an academic, specialist audience. Thomas notes that previously contemporary literary scholars of detective fiction have repeatedly returned to the genre to "illustrate new waves of critical methodology": For instance, Jacque Lacan's allegoric reading of "The Purloined Letter" as a signifier that reveals the paradoxical logic of the text of the unconscious, or Holquist's "Whodunit and Other Questions: Metaphysical Detective Stories in post war Fiction" which sees detective fiction as "the preeminent literary model for postmodernism's exposure of the subterfuge of order and the fundamental truth of chaos" (7).

Thomas is less interested in examining "detective fiction" as special category of literature, but in "how the classification and marginalization of popular forms like the detective story may be read as an effect of the culture of knowledge and power that produced them" (8). Such an approach is directly connected to how English studies itself is transforming under the impact of cultural studies, feminism, and postcolonial theory, a transformation that has produced critics such as Klein, Munt, and Walton and Jones, who provide sophisticated feminist and/or cultural analyses of contemporary detective fiction, and adopt a more intertextual critical methodology,

Watson and Jones's *Detective Agency*, for instance, argues for an approach to the genre that does not invoke such a static conception of the form and its passive consumer. Genre, they argue, "serves as a relational, conventional, and contradictory location that tends to complicate in practice any simple either/or categorization." Key to this approach is the assumption that genre fiction requires critical attention *by virtue* of its supposed transparency and conformist nature, for these are the texts that do the rigorous cultural work of ordering and compensating for the vexed contradictions surrounding cultural notions of gender and social identity. As Walton and Jones argue, while genre fiction works to reinscribe and perpetuate the social role of many of the readers the form simultaneously works to "ease transition into a social situation and to confront the problems resulting from transformation" (88-89) These popular and reassuring narratives become safe spaces where cultural anxieties may be confronted, negotiated and ultimately resolved.

[18] Numerous news programs have investigated the "science" of televised forensics and how it stands up to real life practices. For instance NPR's "Dose of Reality: 'CSI' vs. True Las Vegas Crime Lab (All Things Considered, May 24th, 2004) and CNN International's feature "Innovative Techniques in Forensic Science: CSI on the TV and in Real Life" (*House Call with Dr Sanjay Gupta* May 14th, 2005).

[19] Over the last year news organizations have extensively reported on the so-called "C.S.I Effect" phenomenon. For example: "The Jury's Out: How 12 Reasonable People Got Hung up on Reasonable

Doubt" *The Washington Post*, June 26th, 2005; "Defense Prosecution Play to New "CSI' Savvy: Juries Expecting TV-Style Forensics" *The Washington Post, May 22nd, 2005.*

[20] See Peter Applebome's "With Sexier T.V. Image, Forensic Science Reaps the Reward in Popularity." *The New York Times.* (October 6th, 2004) and "Forays into Forensics: When it Comes to Enthusiasm for Science, High schools and Colleges find Crime Does Pay" in *Newsday* (December 14th, 2004).

[21] Coverage during the period preceding the trial also addressed the legal wrangling surrounding the tests "The Code: DNA and O.J. Simpson: Testing Science and Justice" *The New York Times*, June 26th, 1994; "Simpson Team Rejects Plan on DNA Exam: Judge Insists Both Sides do Tests at Maryland Lab." *The Washington Post*, July 28th, 1994.

[22] A privately run DNA laboratory, Cellmark had several years before been placed under scrutiny for the mishandling of evidence due to an inadvertent mix-up of samples. See Thompson and Fords' "DNA Typing: Acceptance and Weight of the New Genetic Identification Tests," *Virginia Law Review* 75 (1989) 126.

[23] For further examination of the racial polarity surrounding the trial and its forensic evidence "If the Genes Fit, How Do You Acquit?" by Andrew Ross in *Birth of a Nation'hood: Gaze, Script and Spectacle in the O.J. Simpson Case* (1997). Susan Bordo's discussion of the case ("P.C., O.J. and Truth) argues "the defense constructed the fictional but compelling coherency—the plot to frame O.J.—to make "sense" of the clutter, providing jurors with a narrative "logic" to replace the laborious sifting and weighing of evidence that they were either unable, unwilling, or too exhausted to perform" (93).

[24] Lander and Budowle's 1994 "DNA Fingerprinting Dispute Laid to Rest " appeared in *Nature* on the eve of the trial. The article recounted various criticisms of DNA evidence that had been raised over the years—including some by Lander himself—and concluded that these problems had now been addressed appeared. The timing of this publication in light of the trial was not lost on stauncher critics of DNA evidence, with a letter to this effect by Richard Lewontin and Daniel Hartl appearing in the next issue of *Nature*.

[25] In *Screening the Body*, Lisa Cartwright notes that the "microscopic gaze" has "tidily excised the matter of its own role as an instrument of institutional surveillance and power. Microscopy closes one eye to its object, offering up a modernist text that is stripped of historical as much as spatial depth" (83).

[26] For discussion of the conventions of televised law see "Law in the Age of Mechanical Reproduction" in Judith Roof's *Reproductions of Reproduction* (1999). Roof states: "[t]he spectacle of collecting evidence is like watching someone put together a puzzle; it make viewers collaborators in law's constant fact-based legitimation by inveigling their participation in the gradual solution of crimes. Law shows specifically invite (and even require) viewer interpretation of facial expressions, analysis of testimony, and knowledge of human nature through the spectacle of faces offered for examination. . . . Thus, by strategically imaging faces that signify answers, *Perry Mason* seduces viewers into a cooperation with the metaphorical trajectory of Law's truth in its spectacular narrative guise" (125).

[27] While crime and early forms of detective fiction appeared prior to Poe's publication of the Dupin tales, Poe's innovative development of the detective-protagonist who combines the "aura of genius combined with the actuality of simple explanation." He referred to his stories as 'tales of ratiocination,' stressing the intellectual process he added to the aura of Gothic mystery, creating the mix central to the Dupin stories and so much later crime fiction. These tales, Stephen Knight writes, play upon "the balance between an investigated enigma and the highly imaginative methodology that Dupin claims to operate." While Dupin insists "he has the power of the poet to see solutions as a whole" he also offers "detailed and empirical explanations for his insights" (26). For further examination of the origins and "pre-history" of detective fiction see *The Cambridge Companion to Crime Fiction*, edited by Martin Priestman (2003); *Crime Fiction 1800-2000: Detection, Death, Diversity* by Steve Knight (2004);

[28] Works from this sub-genre were highly popular in the early-to-mid nineties, a success that can be attributed to the wild success of the film version of Thomas Harris's *Silence of the Lambs* (1991). Television programs depicting profilers during this period included N.B.C.'s *Profiler* series in the United States, and *Cracker* in Britain.

[29] Lyotard writes of Enlightenment: "With modern science, two new features appear in the problematic of legitimation. To begin with, it leaves behind the metaphysical search for a first proof of transcendental authority as a response to the question 'How do you prove proof?' or, more generally, 'Who decides the conditions of truth?' It is recognized that the conditions of truth, in other words, the rules of the game of science, are immanent in that game, that they can only be established within the bonds of debate that is

already scientific in nature, and that there is no other proof that the rules are good than the consensus extended to them by the experts (29).

[30] One direction this research project could have taken was to integrate discussion of the impact of psychoanalysis on notions of truth-finding and identity. Thomas notes that Freud was a famous reader of detective fiction, and that he likened the role of the analyst to that of the detective. "Just as the detective cannot expect a clear path to explaining the mystery, the analyst cannot expect a clear path to disentangling the patient's acts of deception. Both require the skills of the trained expert to interpret the distorted traces of the past left behind in the present and enable a more truthful reconstruction of the past from them" (33).

In this project, I am interested in narratives that overtly privilege empirical science and physical evidence as a means to arrive at truth. One direction this research could take, of course is how crime scene traces are read to reveal the behavior and psyche of the criminal, and indeed this is a predominant theme in contemporary forensic narratives. My discussion of Cornwell touches on how empirical means slip into other means, and how profiling and psychological aspects of her works lend a more gothic function to the texts, extending the effect of physical evidence. I see this as a symptom of the forensic narrative's inherent reductionism, and its inadequacy, to account for larger, more metaphysical pursuits of identity and truth.

Chapter Two

Image Capture: Photography, Fingerprinting and Forensic Identification

We know that the photograph is not the work, in any respect affecting its truthfulness, of a human brain, but of natural forces, which, experience teaches, generally speak the truth without flattery or detraction. If I am correct in this, a photograph, proved to be that of a person absent is that person himself, precisely as he exists in the article of vision—is, therefore, direct and original evidence of the kind of man he was. So, of the photographic likeness of any natural object or place. When shown to be the photograph of the place or object, it is original—that is, legally speaking, the best—evidence of its features and relations; as much so as the testimony of a witness speaking from memory of the same features and relations. (J.A.J., "The Legal Relations of Photographs," 1876)[1]

[T]he signaletic notice accompanies every reception and every delivery of a human individuality; it is the *muster-roll* which preserves the evidence of the real and effective presence of the person . . . (Bertillon, *Signaletic Instructions*, 1896).[2]

The photograph as such and the object itself share a common being, after the fashion of a fingerprint. (Bazin, "The Ontology of the Photographic Image," 1967)[3]

André Bazin's oft-cited comparison of the photographic image to the fingerprint underscores his indexical concept of photographic ontology—the photographic image, like a fingerprint, represents an intimate relation of contact between sign and thing. This characterization also highlights the forensic intertwining of these two indexical signs, which both figure as identifying traces within the modern context of identification. This chapter considers the historical contexts of science and criminal justice in which the technologies of photography and fingerprinting could produce the signs of identity. The invention of photography, notes Benjamin in *Charles Baudelaire*, "is no less significant for criminology than the printing press is for literature. Photography made it possible for the first time to preserve permanent and unmistakable traces of a human being" (48). As a trace of identity, the photographic image can literally "arrest" its referent, even while the "individual's traces" are obliterated "in the big-city crowd" (43). Identifying photography's disciplinary potential in a context of increasing urban mobility and modernization, Benjamin highlights the ability of the image to capture the literal "traces" of the individual, and at the same time preserve them for use within disciplinary contexts. Moreover, these unmistakable traces are rendered *newly* visible by photography, "which can bring out those aspects of the original that are unattainable to the naked eye yet accessible to the lense." Not only then could the camera provide new means to render the traces of identity visible, it could "put the copy of the original into situations that would be out of reach for the original itself" (Benjamin," The Work of Art" 220).

The paradoxical status of the image as both indexical reference and severed sign is central to understanding how in the nineteenth century photographic images, and later fingerprints, became "identifying traces" within the overlapping contexts of forensic

identification and criminal anthropology. While the "natural" and evidentiary status of the photographic image drew from its seemingly ontological status as a literal trace of the real, the translation of the photographic image into an identifying trace--a transparent and "perfect representation of human identity"--required continual negotiations within these contexts. Images that spoke of certain truths about identity--"identifying traces"--were produced not by the "power of the camera" but "the power of the apparatuses of the local state to deploy it and guarantee the authority of the images it constructs to stand as evidence or register a truth." The photographic image in and of itself did not have intrinsic identity. Its status as a referent, and photography's status as a technology, varied with the power relations which invested in it, and legible only within these particular currencies (Tagg 63). For example, within the burgeoning science of criminal anthropology, photography was viewed as an empirical means to verify scientifically theories of biological determinism; photographic images of phrenological characteristics, "atavistic" or evolutionary regressive markers, and even manipulated composites of "types" were all presented as scientific objects, transparent facts that provided proofs concerning the criminal type. Within these "scientific" contexts social constructions of identity were transformed into evolutionary inevitabilities.

This chapter examines how photography and later fingerprinting were recuperated within these contexts as a both scientific apparatus and disciplinary mechanism of forensic identification in the mid-to-late nineteenth century. As an object of science, the photographic image became a means to claim sole authority in representing the objective world of nature. In rendering this knowledge more visible, photography's potential lay in its ability to "reveal" the hidden truths about human identity, and specifically that of "the

criminal." The photographic image within these contexts became "fact"—the immutable and measurable truth of human identity. I chart the connection between the transformation of the visual culture of identification, from photography to fingerprinting, to broader epistemological transformation of "identity" into material facts measurable/rendered legible only by science, and also examine how images of criminals functioned as "scientific facts" or "proofs" across a divergent range of sites, and how, paradoxically, these "fabricated" facts, which were simultaneously certified as not fabricated, presented particular but divergent and contradictory epistemological "truths" about human identity.

Confronted with a new form of technology that paradoxically promised direct access to the natural but also threatened notions of the original with its infinite reproducibility, discourses surrounding science and law tamed the image by over-determining its claims to truth. This taming of images and later fingerprints into the facts of criminal identification required an increasingly negotiated context of "scientizing" the image.[4] The early images of criminals within crude archives and rogue's galleries, for instance, are notable for their stylistic similarity to bourgeois portraiture; in addition these massive and unruly archives of criminal individuals, though providing sensationalist entertainment, were largely ineffective in the context of law enforcement. In order that the image be both useful in the context of law enforcement and stand in for empirical results within the observational sciences of criminology, images of criminals—whether individual criminals, or "the criminal" of criminology—were integrated into broad statistical and taxonomic systems.

Foucault's *Discipline and Punish* is central in understanding the institutional mechanisms that both "modernized" the subject, and transformed the subject into an object of scientific knowledge and disciplinary control. It was within this context that bureaucracies emerged whose mission it was to know, index, and record individuals within institutions like prisons, schools and the military, and within the newly constituted human sciences. This epistemological shift from sovereign to disciplinary power is part of a process of modernization that consists in the production of controllable subjects through "a certain policy of the body" that renders the subject "docile and useful." "This policy required the involvement of definite relations of power; it called for a technique of overlapping subjection and objectification; it brought new procedures of individualization" (305).

As technological advances of modernization transformed the economic landscapes of Europe and triggered mass urbanization of culture in the early to mid nineteenth century agencies responded with widespread bureaucratic action, including early development of passports and in Paris, specifically, a criminal archive.[5] In America during this period, an ever-growing and mobile immigrant population and a context of decentralized power created unique challenges. Alexis De Tocqueville's 1833 report to France on the American penal justice system articulates the emerging challenge of identification:

> Where passports do not exist, nothing is easier than to change one's name. . . . Nothing is easier than passing from one state to another, the ties between the various states being strictly political, there is no central power to which the police officers might refer to obtain information respecting

> the previous life of an indicted person: so that courts condemn, almost always, without knowing the true name of the criminal and still less his previous life. (55)

Such conditions meant that criminal individuals could easily pass from state-to-state, simply assuming new identities in order to evade the law. As identities became more mutable, boundaries of class and race could break down: "In modern, anonymous, anomic society, one cannot rely on appearance, on social markers, on accent, on anything, to tell good from evil, human from subhuman, saint from murderer" (Friedman 203).

The cultural shifts effected by technological and commercial modernization within the nineteenth century can be characterized by a marked anxiety about mobility and identity-transgression. Within an emergent bourgeois and transaction-based culture, appearance might be the only determinant in establishing a relationship of trust upon which to base business. Bureaucratic government institutions evolved not only to accommodate modern society, but to respond to this pervasive cultural anxiety: "For the first time, governments considered it their business to collect and store information about ordinary people. Bureaucracies arose whose mission it was *knowing* individual citizens. For the first time, governments thought it important that some people, notably criminals, have an identity that existed outside the physical body" (Cole 10).

Concomitant with the bureaucratic drive to index identities was the integral development of the social sciences, which sought to address the social factors of criminality. Within this emerging discipline, the question of the human subject was approached from a positivist perspective—the truth of the human, as an object of nature

and thing-in-itself, was conceived *a priori* as always measurable, provable. In processes of technological modernization, and the larger project of modernity, then, the human subject becomes the object of rationalized knowledge. As Foucault argues, the evolution of bureaucratic record-keeping institutions, which worked to "fix" these unruly identities, into effective disciplinary regimes for regulating (and constituting) the individual was predicated on the rationalist drive "to know."[6] The concept of "the criminal" became a central focus of this rationalization within the rarefied approaches of science, where experts focused attention, not on individual criminals, but on the "criminal type." In the mid-nineteenth century the concept of the "repeat offender," or recidivist, emerged as a new generation of reformers began to question the strictures of classical jurisprudence. This new concept of approaching crime or "criminality," an early form of "profiling" criminal behavior, was notably articulated in the 1840s by the Belgian statistician and social scientist Adolphe Quetelet, whose "social physics" treated crime, like other social phenomena such as birth, death, and suicide, as determined by statistical laws. "Criminal statistics," Quetelet asserted, "becomes as positive as the other observational sciences . . . We are forced to recognize that the *facts of the moral order* are subject, *like those of the physical order*, to invariable laws" (qtd. in Hacking 73).

These statistical models for understanding crime highlighted a sense of criminality as less a series of isolated acts of individual will than an organized social phenomenon that, subject "to invariable laws," was both observable and measurable. The object under observation within this context was the criminal subject. The recidivist became *visible* as an object of scientific knowledge; the disciplines of craniology and phrenology, which held that inner character could be read via the visible surfaces and

contours of the body, particularly the head, would integrate both statistical and taxonomic models of analysis for representing the identity of the criminal "type."[7] As early as the 1840s, sub-disciplines such as craniology, phrenology, and physiognomy, sought to understand the innate qualities of social types by reading the outer signs of the body, and presenting these findings through a series of graphical, hand-drawn illustrations.[8] These early and pre-Darwinian disciplines were comparative and taxonomic, seeking to cover the complete range of human diversity, with "zones of genius, virtue, and strength . . . charted only in relation to zones of idiocy, vice, and weakness" (Sekula 348).

Knowledge of the criminal subject in these contexts, then, was predicated on *a priori* assumptions concerning the biologically determined nature of degeneracy, and also the assumption that such traits might be rendered visible with the application of correct methods of analysis and the aid of increasingly refined imaging technologies and methods of visual representation. These technologies, in turn, would provide the empirical facts to support these theories. Photography was swiftly recuperated as a means to fix identity within early versions of the criminal archive, and techniques for taking down hand-drawn portraits for the criminal records that populated the vast underground archive of the Paris Sûrete, for instance, were immediately supplanted by the use of photographs in the 1840s.[9] However, photography's mergence into a scientific apparatus would be less instantaneous, occurring nearly two decades after its integration into the unruly criminal archive.

Early treatises on the photographic image as a purer form of representative truth addressed the form's capacity to "capture" nature more effectively than art. "[T]he closest scrutiny of the photogenic drawing" Edgar Allan Poe would famously assert,

"discloses only a more absolute truth, a more perfect identity of aspect with the thing represented. The variations of shade, and the gradations of both linear and aerial perspective are those of truth itself in the supremeness of its perfection (Poe 1840). A product of exposure to a preexisting entity, the image directly bears the imprint of the entity and so provides evidence of its identity. While aesthetic renderings and linguistic descriptions could only approximate realism, the indexical aspect of the photograph as "object of nature," as opposed to representation, seemed to spring from its intimate relation with the thing represented. This distinctive truth-value of the photographic image, which provided record-keeping accuracy, was only reified by this fundamental concept of the apparatus itself as an objective mechanical means to render an image with a seeming minimum of human intervention.

Henry Fox Talbot, a few years after Poe's declaration, would describe the photographic apparatus as "the pencil of nature," a nomenclature that alluded to photography's double status as both art and scientific object. While his treatise was largely concerned with defending the artistic merit of the form, he devoted some space to the manner in which the photographic image might function in legal contexts. Specifically, such an image might be regarded as a new form of documentation within bourgeois culture, an indexical inventory of goods for instance; photographs could be taken of possessions as a proof of ownership. In this context, the image is cast as a form of "mute testimony" that would "take down" facts in univocal transcription (3). Talbot was thus among the first to lay claim to a new kind of "legalistic truth, the truth of the indexical rather than textual inventory" (Sekula 345). Talbot does not invoke the role of photographer or law enforcer in his rendering; instead the apparatus itself is sufficient to

perform the task of representing an objective and unmediated truth, analogous to the expert who might "take down" the facts that might be used in evidence, but far superior in its lack of subjectivity.

Within the context of criminal justice, treatises on the legal use of photographs as evidence do not begin to appear until several decades after the invention of the daguerreotype in 1839, though these too were initially characterized by credence in the photographic apparatus's ability to capture images objectively and without human intervention, and also by a belief that the image itself represented a form of "direct" evidence that differed from witness testimony. Within the U.S. and Europe, photographic images would circulate within juridical and law enforcement settings as the perfect form of evidence, a superior form of text and testimony. An 1869 legal treatise on "The Legal Relations of Photographs" argues that as a form of evidence, the photographic image "differs from hearsay" in one "essential particular":

> it is wholly free from the infirmity which causes the rejection of hearsay evidence, namely, the uncertainty whether or not it is an exact repetition of what was said by him whose testimony is repeated by the witness. In the picture, we have before us, at the trial, precisely what the apparatus did say. Its language is repeated to us, syllable for syllable. (J.A.J. 6)

Here it is the apparatus that "speaks" in the place of the witness, repeating or transcribing in a language that corresponds "syllable for syllable" to the thing-in-itself. Both sign and signified, the photograph of an individual, the author asserts, "is that person himself, precisely as he exists in the article of vision" and therefore, it is not only image, but "direct and original evidence of the kind of man he was" (5).

This naïve gesture towards photography as unmediated access to the real, however, negates what critics and historians have identified as a highly vexed and debated role of photography in both legal and scientific settings. On one level, the image was recuperated into the juridico-legal context as an indexical record, divorced from subjective manipulation, adapted easily into a legal system, which, in turn, was shifting away from focus on testimony and confession to rhetorical argumentation, "forensical debate," made by presentation of objective "proofs." [10] On another level, the laudatory rhetoric concerning the photographic apparatus veils a distinct co-existing crisis of faith in an optical empiricism that divorced form from content.

Such treatises on the legal use of photography can thus be viewed as an instance of criminal justice's overdetermined and compensatory translation of the image into objective and direct evidence, and indeed, this early testimony to photography's legal potential is situated within a growing debate over the role of photography, and, specifically, its status as an objective means of representation. John Tagg describes how this coupling of evidence, specifically the evidence of and for identity, photography became intimately related to the emergent practices of record-keeping and observation, which constituted the core of the developing network of disciplinary institutions in the nineteenth century (5). Here, the evidentiary function of the photographic apparatus, and specifically its status as a forensic technology for identification, was framed predominantly in terms of its *a priori* status.

However, this overdetermined status of the image as an object of nature results less from its indexicality than from its inherently more radical aspect—the ability to represent an original object outside of time and place in multiplicity. Within these

settings, both photography's power *and threat* stems from its detachable nature. Images can circulate like currency and acquire meanings completely independent of their referents. This latter understanding is notoriously characterized by Oliver Wendell Holmes's deliberately ironic statement that images were "universal currency of these bank-notes, or promises to pay in solid substance, which the sun has engraved for the great Bank of Nature."

> *Form is henceforth divorced from matter.* In fact, matter as a visible object is of no great use any longer, except as the mould on which form is shaped. Give us a few negatives of a thing worth seeing, taken from different points of view, and that is all we want of it. . . . There is only one Colosseum or Pantheon; but how many millions of potential negatives have they shed—representatives of billions of pictures—since they were erected. Matter in large masses must always be fixed and dear; form is cheap and transportable. (80-81)

The photographic apparatus thus represented not only a new mode of technological representation, but "the reshaping of an entire territory on which signs and images, each effectively severed from a referent, circulate and proliferate" (Crary 13). In this regard, the detachable and circulatory aspect of the image undermined traditional ideologies concerning the material basis of identity, and from this perspective, photography in the nineteenth century can be understood as not simply the latest stage in realistic representation but a part of "a new system of exchange which could radically transform traditional beliefs about solidity and unique identity" (Gunning 18). The actual use of photographs, then, correlated less with the image's status as natural phenomenon

than with its ability to gain a mobility its referent never possessed; its "natural" and "self evident" meaning was renegotiated across differing and often paradigmatically opposed contexts. In this sense, "[p]hotography and money become homologous forms of social power in the nineteenth century" each "magical forms that establish a new set of abstract relations between individuals and things *and impose those relations as real*" (emphasis added, 13).

Photographic portraiture, for instance, managed to regulate social disorder even as it endorsed emerging elites. Such images operated "honorifically," and these conventions were "able to proliferate downward," representing the petit-bourgeois subject within a newly emerging context of possessive individualism in a cultural context where the legal basis for the self lay in a model of property rights (Sekula 346). Here, the image was recuperated as a form of honorific representation, a symbol of wealth and status among the privileged classes that was a much more affordable symbol of middle-class ascendancy. As photographic portrait studios cropped up all over America and England, photography temporarily undermined or degraded a traditional form of representation, painted portraiture, only to accelerate and popularize "the ceremonial presentation of the bourgeois self." While any one of these new moneyed classes might boast a gallery of family portraits, "that honorific practice found its negative image in the coerced mug shot of the criminal forcibly taken and publicly displayed in the local police precinct to serve as a record of deviance and a mark of shame" (Thomas 114).

Strikingly, while these honorific and repressive forms of representing identity are defined within diametrically opposed contexts, when viewed outside of these contexts—the parlor vs. the early mug shot—the stylistic *differences* between these sets is much less

distinct. The characteristics of the mug shot, with the subject shown in front and side profile, holding a board with name and identifying number, was not refined until the 1880s, when Bertillon invented his anthropometric system of identification. In the 1850s, pioneering American daguerrotypist Matthew Brady, famed for his taking of photographic portraits of "illustrious" Americans, was also employing his art to the assemblage of a "Rogues' Gallery" to alert the public to the identity of known criminals in their midst. Both forms of portraiture deployed similar conventions in terms of optical distance and positioning, and none of the familiar conventions of the mug-shot, where criminals are photographed in frontal and profile shots, inform the typography of the image.[11]

This slippage in visual iconography, a slippage that points to photography's ability "to impose relations as real" as far from stable, is especially pronounced in Thomas Byrnes's *Professional Criminals of America* (1886), which ostensibly presents a gallery of coerced shots of criminals exposed to the public. One of the most well-known images from the Byrnes tome is that of the criminal being photographed—as he struggles in the chair, he is held down by four detectives; Byrnes stands back, gazing at the criminal and standing in for the camera eye. This obviously staged "performance" of "image capture" works to visually illustrate Byrnes's characterization of the role of photography in capturing, and more to the point, exposing the identities of those whose appearances would deceive in other contexts, and who would attempt to defy the camera by screwing up their faces. Even in these cases, the most cunning of dissemblers could not evade the arrest of the camera, Brynes attests:

> The very cleverest of hands at preparing a false physiognomy for the camera have made their grimaces in vain. The sun has been too quick for them, and has imprisoned the lines of the profile and the features and caught the expression before it could be disguised. There is not a portrait here but has some marked characteristic by which you can identify the man who sat for it. (53)

Just as the image in "The Legal Relations of Photographs" is a form of natural and unmediated representation, here the traces of identity are captured as a result of the sun, which "imprisons" and literally arrests identity. On one level, then, the image of the man coerced by detectives into being photographed metaphorically represents both the struggle between the criminal and the disciplinary gaze of the detective/camera.

However, the composition—placed directly adjacent to the passage quoted above--informs readers on how to interpret the multitude of criminal portraits populating the remaining pages of the book, and thus compensated for how many of those images more stylistically resemble parlor portraits of the bourgeois than any conveyance of struggle and capture. Byrnes's own portrait, which appears in the opening preface of the book, while larger than those others who inhabit its pages, could easily find place within the galleries of rogues that follow. Byrnes meditations on these criminals tap into cultural anxieties over how such individuals are visually indistinguishable from law-abiding, upper-class citizens. For Byrnes, the "Professional Criminals" were the forgers and confidence artists who could exploit social mobility and cross over boundaries of class and even race in an ever-expanding American urban landscape. These are "men of education, possessed of plenty of assurance"; criminals who operate by being "very

careful in their appearance" endeavoring to "attain an easy respectability in effect": "Professional confidence men have more than once declared that a tinge of gray in their side whiskers would be a great disadvantage to them, and a bald head a fortune (40). The pages of *Professional Criminals* are filled with such accounts of crimes of identity and authenticity, where the abuse or swapping of identity itself constituted the crime. These were very much crimes of mobility, depending on "anonymity, ambiguity of identity, and the fluidity of lines that separated strata and classes in the population" (Friedman 135).

Within the Byrnesian rogues' gallery, the camera as a forensic technology of identification attempts to render these slippery identities stable, with the processes of capturing and fixing identity effectively encapsulated by the metaphor of the freeze-frame. The photographs in the rogues' gallery thus focus on the face, the "tool of the trade of the confidence game" (Cole 22). Many of the "professionals" represented are white men who could betray confidences by acting as respectable bankers and men of principle and wealth. Women also joined the ranks of the gallery, those who could dissemble in the guise of the devoted wife and mother in order to con the gullible into handing over money in sympathy. Byrnes, concerned with showing how "respectability" could be performed by adopting a certain appearance and demeanor, shows how cultural assumptions regarding gender, ethnicity, conduct, and attire can allow these individuals to "pass" as others.

In his chapter "Why Thieves are Photographed" Byrnes initially links this societal naivety with a certain "miseducation" provided by sensationalist literature; it is here that "the public err" for "[t]heir idea of burglars and all have been gathered from books, and they look for Bill Sykeses and Flash Tobby Cracketts, whereas the most modest and most

gentlemanly people they meet might be the representatives of their very characters" (53). Physiognomy, "the popular idea of criminal's appearance," he asserts as a poor guide to determining character in most cases: "There is 'Wess.' Allan. The scar on his cheek and the missing eye would mark him anywhere, but he manages to be so sober in his dress that no one notices him" (54). The "true" inner nature of the criminal, a "flash of malice" that comes "into the sharp eyes," Byrnes insists, is hidden below this artificial appearance, a truth that can be seized upon by the cunning detective, and captured by the camera eye (52).

A central contradiction within *Professional Criminals* is Byrnes's assertion that physiognomy (sister science to the determinist schools craniology and phrenology) could not be relied upon as a sufficient method for recognizing criminals. But at the same time, more telling is the absence of those faces he has not chosen to depict among the "professionals." Criminals from the degenerate underclass Byrnes asserts, do "wear" their true natures in their faces and appearances, and as such have no need to be included in his book:

> River thieves and low burglars are as hard-looking brutes as can be found. . . . There are numbers of confidence men, too, who in spite of their gentlemanly dress and conversational powers, look the very incarnation of sharpers. In fact, it is a bad thing to judge by appearances, and it is not always safe to judge against them. Experience of men is always needed to place them right. (55)

Byrnes is less interested in depicting those who would automatically garner suspicion due to class, race, and demeanor. These "types"--non-Caucasian immigrants and former

slaves--did not require exposure and arrest by the camera eye, for their appearance already "gave them away" as "natural" miscreants. Social suspicion is sufficient to take care of recognizing and stigmatizing these individuals, it seems. Byrnes concedes to the determinist tenets of physiognomy, but simply does not need to represent these types who "look like" who they really are.

Within such versions of the police-implemented rogues' gallery, an unsophisticated precursor to the more complex criminal archive, the criminal is cast as exceptional, even a genius, slipping into the crowd and indistinguishable from the bourgeois. The public display of portraits of professional criminals who sought anonymity and concealment became one of the most popular forms of photographic galleries, in many cases a popular tourist attraction, even displayed in Barnum's museum. By the 1880s, the rogues' gallery became a feature of each major town in the United States, a sideshow curiosity that entertained more than it effected law and order.

The disciplinary and identificatory force of the gallery then lay not so much in any real practical method of combating repeat offenders, but in its spectacular representation of that "shadow archive," the necessary other of bourgeois portraiture. These images are placed alongside triumphant stories of pursuit and detection, with the photographic apparatus itself foregrounded as the ultimate detective; false identities exposed for true ones. The central principle of the Gallery was the notion that both members of the public and detectives would memorize the faces of known criminals and recognize them on the street. "That is what has to be studied in the Rogues' Gallery" Byrnes would assert, "detail." The "skilled detective knows all this and looks for distinguishing marks peculiar to his subject (53). A more informal and sensationalist

version of the criminal archive, the rogues' gallery shared the same fundamental flaws as early pre-Bertillonian archival systems—files were ordered and retrieved by name, and the system hinged upon the skills in recognition and memorization of the detective. In addition, the system was contingent on the individual criminal not changing his or her identity to avoid detection. While physical features or ineradicable marks might be taken down in record, there was at this time no way for a prison clerk or police clerk to use a physical feature to look up a prisoner's name.

The photographic apparatus' tendency to capture contingencies presented a fundamental problem for law enforcers; by writhing, blinking, or grimacing while being photographed, the criminal could successfully evade the gaze of the photographic apparatus (despite Byrne's claim they could not). The photographic image was thus "simultaneously too poor and too rich a form of evidence to supply the easy means of identity a modern police department required" (Phéline translated by Gunning 29). The "scientizing" of the image, which was occurring contemporaneously in different disciplinary and national contexts, thus responded not only to the need to secure the image as an empirical "fact" but also to the need to raise the practical efficacy of the criminal archive. In Britain and Europe, it was the likes of "recognizable" criminals preoccupied the more rarefied and scientifically accepted studies of biological determinism. These schools, interested in pursuing the question of how to recognize innate criminality, shared the premise that the surface of the body, and especially the face and head, bore the outward signs of inner character" (Sekula 347). Systems of taxonomic categorization, central to the field of criminal anthropology, fundamentally underpinned the securing of photography as a practical forensic device.

Cesare Lombroso's *Criminal Man* (1876) would form the guiding theory behind the concept of criminality as both innate and typical, and held that outer appearance directly correlated within this inner truth. Founder of the Italian School of criminology, which came to train policemen in anthropological and practical principles of criminology for law enforcement purposes, Lombroso was a physiognomist who adapted Darwinian theory to argue for the existence of an "atavistic" criminal bio-type, a genetic throwback distinguishable from "normal" individuals due to recognizable physical characteristics. This paradigm for recognizing the regressed identities of criminal types became widely influential within the newly emerging and rarefied field of criminal anthropology. The criminal type became the object of scientific knowledge, and the preoccupation of the emerging discipline of criminology.

As a biologically determined category of meaning, criminal identity was deemed innate and, more importantly, visually recognizable. Lombroso proceeded from the principle that "there is an intimate co-relation between bodily and mental conditions and processes":

> As a result of this examination he finds that the criminal population as a whole, but the habitual criminal in particular, is to be distinguished from the average member of the community by a much higher percentage of physical anomalies" (Lombroso and Ferrero, viii-xx).

Here appeared to be a method that responded to cultural needs and anxieties regarding societal order and criminality, providing a truth about the specific criminal that was unavailable even to himself. Lombroso, and the host of biological positivists that would follow him, developed a single semiotic principle: "the body carried inscribed upon it

signs that betrayed its essential criminal character" (Thomas 23). This was a method that promised that the character of strangers could be quickly assessed "in the dangerous and congested spaces of the nineteenth-century. Here was the gauge of the intentions and capabilities of the other" (Sekula 348).

Sir Francis Galton was a Victorian "gentleman dilettante" whose research spanned from eugenics and anthropometry to the "invention" of fingerprinting, and Havelock Ellis, whose work *The Criminal* appeared in 1890, wrote the first English study to systematically present an anthropological theory of criminality. Both men created elaborate methods for identifying the biological determinants behind social, racial, and criminal classes, with the photographic apparatus as a centerpiece, particularly for Galton. By exposing the physiognomic characteristics of the criminal, the photographic image appeared to render visible the very face of criminality. The "truths" of identity thus became transparent and recognizable.

Nephew to Charles Darwin, Galton was specifically interested in the application of these theories to read the signs of "hereditary genius." In his charting of the genius, who "naturally" occupied the ranks of the aristocratic elite within the Western world, Galton was, of course, at great pains to illustrate other inherited traits, including imbecility, idiocy, and degenerate criminality. While determinist theorists were swift to adopt the photographic apparatus to illustrate their points about the shapes of the skull and head in relation to internal character, it was through Galton that this enterprise would find its most curious, and illuminating, exposition. Galton's composite photographs are now regarded as an amusing curiosity in the otherwise illustrious career of a man who is more widely acknowledged in the annals of criminal history as the inventor of

fingerprinting. The portraits were made by combining those of many different persons into a single resultant figure" (*Nature* 97). To generate these eerie portraits, Galton would consecutively cast faint images of several photographic portraits onto a single sensitized photographic plate (97). Increasingly gathering prominence as a leading figure in the emerging discipline of criminology, Galton found both audience and sanction for this radical method of "revealing" types--specifically according to "pedigree" or "degeneracy"--within a range of journals, including *Nature*, *The Journal of the Anthropological Institute*, *The Scientific American*, *The Photographic Journal* and *Photographic Weekly*.

These composites, or, as he also termed them, "generic portraits," were developed to render a visual proof of all typical criminal traits. The relevance of this discovery for criminology was central to Galton's expositions, because the technique could be used to aid in the recognition and approbation of the criminal class that haunted society. Significantly, Galton would deploy the same type of principle he had "frequently employed with maps and meteorological traces" (98). The body was thus transformed into a topographical landscape, like colonial territory, charted and mapped into legible and controllable zones. In his *Inquiries into Human Faculty and its Development,* Galton asserts that the composite simply "brought into evidence" the facts of innate identificatory types, which "naturally" fell along fault-lines of race and class. Within these groups and subgroups, criminals are broken down by specialties, and "swarthy" Europeans broken down into categories of Jews, Gypsies, and Eastern Europeans:

> the photographic process ... enables us to obtain with mechanical precision a generalised picture; one that represents no man in particular,

> but portrays an imaginary figure, possessing the average features of any given group of men. These ideal faces have a surprising air of reality. Nobody who glanced at one of them for the first time, would doubt its being the likeness of a living person. Yes, as I have said, it is not such thing; it is the portrait of a type, and not of an individual. (97)

Galton's *a priori* assumptions concerning generic human identity, along with his credence that photography was the empirical means to garner the proofs of that identity, resulted in a curious merging of photography and statistics within the composite portrait. The description of the process and its results by Galton here suggest that the types rendered by these images are both representations and realities, both artifice and truth. The images resemble a real person but are "no such thing," yet they possess a "surprising air of reality." A higher form of representative and essential truth, the composites convey a truth about identity that is invisible to the lay eye. Here "[a]ll that is common remains, and all that is individual tends to disappear" (97). Temporally removed from context, only to reveal something more profound within a renewed context, the composite image brings what is invisible but "true" to the forefront, allowing the authorities to "see" the criminal type, while blurring out the "unimportant details" of individual traits. The generic type is thus both an abstract and *the* authentic human norm; individuals are reduced to ghostly traces, existing literally as mere shadows of the more substantial type.

For Galton, these images do not achieve "perfect identity" with their referent in the indexical or nominal sense, but instead achieve a superior level of representative truth. The photographic apparatus, harnessed to produce what Galton terms "pictorial statistics," reveals to the specialist what the untrained eye could not see. Composite

pictures are thus much more than averages, Galton asserts, rather they are the visual equivalent of "those large statistical tables whose totals, divided by the number of cases and entered in the bottom line, are the averages." These were the "real generalizations," where the "blur of their outlines, which is never great in truly generic composites, except in unimportant details, measures the tendency of individuals to deviate from central type" ("Generic Images" 233). Some forty years after Quetelet had introduced the abstract graphic of the Gaussian bell curve to visually convey "social physics," Galton presented a new scientific image, a translation of the abstract via the miracle of photography; "the symmetrical bell curve now wore a human face" (Sekula 369). In Galton's hands, the camera is deployed to illustrate a particular paradigm for understanding both the specific criminal type and of the human subject in general. Subjectivity is understood only comparatively, via an elaborate taxonomy of physiognomic characteristics. Individuality, defined by non-conforming characteristics—the blur at the edge of the portrait, is eradicated, reduced to "unimportant detail." In this sense, individuality as such has no meaning, for the individual—a criminal, a Jew, a gypsy—only exists by virtue of being *identified* within this comparative paradigm—the criminal, the Jew, the gypsy.

The composite image thus stood for both empirical and statistical data. For Galton, refinement of his techniques would lie in the technical refinement and modification of the optical apparatus and its ability to render visible *more* image-facts that "proved" physiological characteristics correlated with social identity. Nonetheless, his procedure, along with many of the other anthropological studies he undertook, was based on a fundamentally *archival* principle of classification, which required a massive taxonomic ordering of images of the human subject. In his attempt to image "The

Criminal" or other categories of individuals, and to condense what he viewed as the *a priori* and measurable "statistical norms" of identity, Galton "sought to embed the archive in the photograph" (Sekula 373). Individuality, reduced to a blur at the edges of the portrait, and bourgeois notions of "the individual" as essentially unique, were thus radically undermined by a system that posited identity as purely relative, and its truth purely a matter or thing for science.

Alphonse Bertillon's relatively simple and practical system of measuring, photographing, and categorizing the surfaces of the criminal body also drew directly from the principles that underpinned Galton's work. By introducing the application of more rigorous taxonomic principles of archival cataloguing to the unruly but practically-intended criminal archive, Bertillon's system represented the culmination of both the statistical approach to identification articulated by Quetelet and the bureaucratic approach to documenting criminal identities. Like Galton's application of composite photography to the question of identity, Bertillon's method was heavily indebted to the taxonomic and archival approach developed by these "statisticians" of society.

Running counter to Galton's paradigm for "biologizing" the individual into types, here the criminal body expressed nothing of an innate "type." Nothing could be "revealed" about the inner character of the man via the classificatory measurements the criminal was subjected to; instead, "the surface and the skeleton were indices of a strictly material sort. The anthropological signalment was the register of the morphological constancy of the adult skeleton, the key to biographical identity. Likewise, scars and other deformations of the flesh were clues, not to any innate propensity for crime, but to the body's physical history; its trades occupations, calamities" (Sekula 362).

The Bertillon system secured the distinctly forensic form of *identification* in which the revelation of identity is purely practical, the "uniqueness" of identity a matter of pure data, existing only for purposes of reference. It thus shifted forensic paradigms of identity into a sophisticated system where the securing of identity is attained via the refinement of ever-more precise indices of both identity and difference. As such, "he sought to embed the photographic image in the archive" (373). In order to compensate for these failures in both descriptive practice and vision, and to overcome the camera's tendency to capture contingencies, Bertillon proposed a "method of elimination analogous to that employed in the sciences of botany and zoology" that take as their basis "the characteristic elements of individuality, and not the name" (Bertillon 13). In order to capture these "characteristic elements of individuality" the photographic apparatus was rigidly controlled and standardized. The individual was placed in a rigid and stationary chair which held the head in place, with the front and profile views of an individual subject were shot by specially calibrated camera. The camera's lenses and focal length were standardized in order to ensure that the face, and its specific traits, could be properly gauged against classificatory diagrams. The individual would then be subjected to eleven different anthropometric measurements taken with special calipers.

The product of this process would be a single card, the signaletic notice of an individual, a "speaking portrait" that was comprised of both image and text. Bertillon asserted that the "voice" of the image would preserve the "evidence of the real," suggesting that while the system compensated for photography's fallibility, it was still predicated on a sense of faithfulness in optical empiricism: "[T]he signaletic notice accompanies every reception and every delivery of a human individuality; it is the

muster-roll which preserves the evidence of the real and effective presence of the person had in view by the administrative or judicial act" (11). The indexical veracity of the image, however, could only be "preserved" or guaranteed by the accompaniment of classificatory data, which would "guard the trace" of the real person and make the image usable within the context of the criminal archive. Uniqueness or "individuality" in this context is defined by the assumption that each person can be reduced to an image that is delineated into a set of physiological signs. Mastery over the criminal body therefore required a massive campaign of inscription, a "transformation of the body's signs into a text that pared verbal down to denotative shorthand, which was then linked to a numerical series" (Sekula 376).

Fundamentally nominalist, this system, like that of Galton, ran counter to a metaphysical doctrine of self, eroding the notion of "uniqueness" in any essentialist sense. Individuality as such had no meaning. Instead, paradoxically, uniqueness of a single person relied on a certain standardization of the appearance of the photograph in order that the individual be made more easily identifiable, resulting in images which take on generic similarity. Viewed "objectively," the individual thus occupied a position that is wholly relative. If the "individual existed as an individual only by being identified," then the "truth-effect" of identity and the ability of the image to secure that truth, were produced only through systems of identification which reduced identity to the literal matter of the body. The "numerical form of expression" far exceeded that of language "on account of the delicacy and seriation of its degrees" (Bertillon 34).

From Identifying Images to Identifying Traces: Fingerprinting and the Transformation of the Visual culture of Identification

In an 1890 letter to *Nature,* British scientist Henry Faulds would suggest a form of identification that dispensed with the need for extensive metadata attached to a photographic image. The fingerprint, he wrote, was an identifying mark that "*needs no other index than its own essential structure*" with patterns that could be translated into a "syllabic index" (22; emphasis added). Though the history surrounding the "invention" of fingerprinting classification is fraught with debate, less contestable is how the system of fingerprint identification swiftly became devastating in its efficiency.[12] Francis Galton formalized the system of classification suggested by Faulds in his 1892 publication of *Finger Prints.* Here, Galton outlines how the fingerprint could be abstracted into a form of language—a syntactical sign or pattern that "may be expressed by numerals with sufficient precision to sort it under the right heading." The complex and labor intensive processes of photographing and indexing the criminal body in Bertillonage was replaced, or rather microscoped into a system where just one minute detail—the whorl or loop in a single digit's print, could authenticate and stand in for identity, and secure the individual's place within an archive of criminal bodies. In this regard, fingerprinting was immediately heralded as a method of identification that would succeed where other methods--photography and anthropometry--had failed. Not only did the print offer a pared down syntax for effective recording and indexing of the body, it was a surer form of identification, for even the "natives" who "all look alike" can be distinguished from one another within such a system. While the photographic image had represented the body in terms of a recognizable image that corresponded to its subject, revealing identity

as something to be *seen*, and only supplemented by the numeric data of the signaletic notice, with the fingerprint, identity itself was represented and "fixed" by an abstract image. As a form of classificatory identification, fingerprint classification swiftly replaced Bertillonage, which was dependent upon the repeated measurement of an individual's body.

The advent of fingerprinting thus signaled a fundamental shift, not only in the visual culture of forensic science, but also in the larger epistemological transformation of identity into an object of scientific knowledge, a matter of empirical facts, always observable and measurable. Galton articulated the heady, positivist promise of fingerprinting in its potential to "fix the human personality, to give to each human being an identity, and individuality that can be depended upon with certainty, lasting, unchangeable, always recognisable, and easily adduced, this appear to be in the largest sense the aim of the new method" (169). In *Finger Prints*, Galton outlined how the fingerprint could be abstracted into a form of language—a syntactical sign or pattern that "may be expressed by numerals with sufficient precision to sort it under the right heading."

Ironically, though Galton devoted his career to categorizing social groups of individuals according to biological type, his system for fingerprint identification was entirely at odds with his determinist approach. Indeed, initially, Galton was "less interested in the function of fingerprint patterns than in how those patterns might be exploited: both to identify individuals and to provide a physical marker of heredity, ethnicity, and race" (Cole 75). The eugenicist was convinced that somewhere in this hieroglyphic lay some sort of typical pattern that was in line with his theories of heredity

and biological determinism, and this essentialist tendency haunts his works on the subject. Nonetheless, the fingerprint system of identification was far more akin to the nominalist principles of Bertillonage than biological determinism, and Galton swiftly changed tack within his publications on the fingerprint, emphasizing how this "token of identity," would be invaluable to criminal investigation and social control. Here the "existence of such a method would settle questions of personation, of mistaken identity and of previous conviction." A "valuable adjunct to a severe passport system" in Europe, most notably, the system, already long-implemented in colonial Bengal, would be "of continual good service in our tropical settlements, where the individual members of the swarms of dark and yellow-skinned races are mostly unable to sign their names and are otherwise hardly distinguishable by Europeans, and, whether they can write or not, are grossly addicted to personation" (303). In this regard, fingerprinting was immediately heralded as a method of identification that would succeed where other methods--photography and anthropometry--had failed. From its inception, the application of fingerprinting to the recording of individuals operated within a profoundly disciplinary system of surveillance and bureaucratic record-keeping.

While the credibility and evidentiary status of the photographic image drew from its seemingly ontological status as a literal trace of the real, the fingerprint offered something *more* indexical than the image. Not only did the print link a body to a record—the inked mark imprinted in identification records buried in archives—more tantalizingly, the fingerprint could also link finger impressions left at crime scenes to those same records. Through the interpretation of latent prints, and other physical evidence, detectives could work backwards to recreate the circumstances of a particular

crime, and the identity of the perpetrators. Like the photographic image, it was the direct result of literal, physical contact with the thing itself, a material sign of identity. As Micheal Taussig notes, the grooves and ridges of the fingerprint correspond "point for mimeticizing point" with the contact ridges of a unique touch, tangible evidence of a tactile and accountable presence. Such traces are thus replete with the "magic of both copy and contact" (223).

This quality of the fingerprint informed the distinctly more metaphysical renderings of fingerprints that characterized some of the earlier discourses surrounding the system, and would also underpin the symbolization of trace into an "uncanny" sign within popular narratives. Such figurings emphasize the inherently paradoxical status of the print and other forms of trace evidence as a mode of "self writing" that could not be read by the self. Such signs assured that minute physical markers could disclose the unauthentic and fix "true" identity. Twain's *Pudd'nhead Wilson* (1894) dramatizes--and problematizes--this escalating credence in new technologies of detection in its oft-cited court scene. David Wilson announces to an enthralled courtroom that:

> Every human-being carries with him from his cradle to his grave certain physical marks which do not change their character and by which he can always be identified—and that without a shadow of doubt or question." These marks are his signature, his physiological autograph, so to speak; and this autograph cannot be counterfeited, nor can he disguise it or hide it in any way, nor can it become illegible by the wear of the mutations of time. This signature is each man's own—there is no duplicate of it among the swarming millions of the globe. Upon the haft of this dagger stands

> the assassin's natal autograph, written in the blood of that helpless and unoffending old man who loved you and whom you all loved. There is but one man in the whole earth whose had can duplicate that crimson sign. 216)

While Tom Driscoll's "true" identity is, of course, a legal fiction, it is a fiction that took on the aura of scientific credibility within the discourses surrounding fingerprinting. Indeed, the irony implicit in *Pudd'nhead Wilson* was completely lost in various legal recuperations of the scene, where Driscoll's declarations are quoted in order to support the veracity of this form of identification, for instance, in a 1919 edition of the *California Law Review*, on a treatise promoting "The Right to Take Fingerprints, Measurements and Footprints" (28).

It would not be until 1910, some thirty years after the publication of Galton's *Finger Prints* that a case would be tried in the United States where fingerprint evidence would play a central role and raise significant, albeit short-lived, questions about the relation of fingerprints to individuality and identity. As one legal journal reported the case:

> A negro murderer has recently been convicted in a northern State upon the evidence of his fingerprints; the bloody marks of which near the crime scene, compared with imprints made at the trial, showed an exact similarity. Two questions were raised in the trial—one as to the sufficiency of the evidence; the other upon the fact that the criminal was compelled to imprint his fingers upon paper properly prepared to take the marks. (*People v, Jennings*)

In a case that anticipates of some of the early legal debates surrounding the role of DNA evidence, lawyers representing the defense suggested that the print was a form of "self incriminatory" testimony--a compelled confession that violated Fourth Amendment rights--was quickly discarded by the court. The trial established the admissibility of fingerprint evidence, and asserted that the fingerprint was not a form of "writing" by the individual; rather it was a sign of identification interpreted by a scientific expert. This landmark case established precedent for those that followed and demonstrated that as an indexical sign, the fingerprint was not transparent; it required filtering through a forensic expert (Cole 180).

It is with fingerprinting, then, that the trace paradigm for identification—where an individual is traced from a minute piece of material evidence—comes to its full realization. Trace was not an indexical representation of the individual but a material sign of identity, in some cases literal remnants of identity. In 1923, John Henry Wigmore illustrated the fundamental manner in which the body could be converted to material fact, direct evidence, when he famously asserted that a person's fingerprint "is not testimony about his body, but his body itself" (874). As fingerprinting, and other more "miraculous" devices of forensic science took hold in the American context, the concept that criminals were leaving "bits" of self at scenes of crime, and betraying themselves as surely as if they had remained at the scene, becomes a dominant trope in the popular imaginary—where trace is transformed from a literal sign to something more metaphorical, an "uncanny sign" that connotes the absent body of the criminal.

In New York, the *Times* would devote columns to this new science, featuring articles where the new technique was aiding police in miraculous ways. In one robbery,

for instance, "[t]he detectives knew who cracked that safe *as surely as if they had been hidden in the same room when the work was done.* It was only a question of finding the men, and last evening detectives went out to get the thieves" ("Identification Bureau Aided by Finger-Print Clue" 20). As a repressive form of representation, the print is rendered legible, not by the bearer or "utterer" of this sign of the self, but an expert trained in translating this syntax; here the "writing" of the print is quickly translated into an always already sign of guilt: "Now, when a murderer leaves his bloody tracery on a wall, his hands red with the gore of his victim, it would be curious to study the peculiarities of the horrible imprint he may have left, and how the minute whirls or loops might identify him" ("The Finger Print: How Human Ingenuity is Taxed to Discover the Clues to Mysterious Crimes" 10). In addition, however, the "horrible imprint" here suggests something not just uncanny but gruesome, trace as more than just the indexical record of an individual, but symbolic of an individual so monstrous that he can deems to "write" of his crimes in the bloody tracery of the print. Like Byrnes's description of the rogues in his gallery, whose "real" nature is masked but sometimes visible in a flashing look of malice, here the print, "horrible" and even gothic, might reveal something of that hidden nature. This double aspect of trace and the epistemological instabilities it suggests are explored further in Chapter Four.

As the efficacy of the photographic apparatus for criminal identification came into question at the turn of the century, and Bertillon's anthropometric system pushed aside for the far more absolute and more efficient system of fingerprinting, the role of the forensic scientist, chemical expert, or the later coined term "scientific detective," who possessed the authority and expertise to read such abstract, minute, and non-iconic signs,

was simultaneously elevated. Concurrently, the drive within juridical contexts to a radical reordering of the hierarchical principles of juridical proof meant that subjective and "tainted" witness testimony and confession were increasingly displaced in terms of probative weight by the scientific *proofs* of evidence—trials based on such evidence became a "hunt for clues." This new form of evidence altered the narrative logic of signs of guilt, a move that Foucault typifies as the cultural transition from the "exposition of the facts to the slow process of discovery; from the execution to the investigation; from the physical confrontation to the intellectual struggle between criminal and investigator" (Foucault 181). Systems of identification, and as I shall discuss in the next chapter, the surfacing discipline of forensic science or scientific detection, form the perfect illustration of this transition. Instead of reading conventional signs imprinted on the criminal body with the force of sovereign power, the reading of identity, especially the detection of identity, was approached as a science that employed careful measurement, techniques of observation, and the gauging of statistics (Gunning 22).

In 1891, Galton wrote a shorter article for *Nature*, "Identification by Finger-Tips," introducing the main principles to be outlined in his book-length publication. The closing passage of the article reveals Galton's more romantic conjectures over the possibilities for the fingerprint as a sign of identity:

> I look forward to a time when every convict shall have prints taken of his fingers by the prison photographer . . . when the index-number of the hands shall usually be inserted in advertisements for persons who are lost or who cannot be identified, and when every youth who is about to leave his home for a long residence abroad, shall obtain prints of his fingers at

> the same time that the portrait is photographed, for his friends to retain as a memento. (311)

These conjectures--that prints might also circulate within the public domain as readable advertisements for missing persons, or as a form of personal memento, a tangible reminder of one who is absent, akin to a photographic portrait or a lock of hair--illuminate complex issues concerning exactly who is authorized to both "write" or "read" a fingerprint. In the late nineteenth century, when individual photographic portraiture had become the ubiquitous means of representing the bourgeois self, Galton envisions precisely the same type of role for the fingerprint. He saw the most "natural" candidate for the role of print taker as the photographer as:

> a class of men who are naturally gifted with dexterity of fingers, mechanical aptitudes, versatility, and some artistic taste. So far as they are engaged in portraiture, they already occupy themselves in supplying ones means of identification; therefore the pursuit of another means of identification would in some sense lie within their present province. (311)

As fingerprinting swiftly displaced the arduous system of Bertillonage in Europe and later the U.S., the securing of fingerprinting, and specifically its presentation as evidence within a court of law, required a new form of expert to explain it. While Galton's choice of photographer might well be analogous the role of the police clerk who takes and records prints of suspect criminals, the fact that partial and latent fingerprints could be left at a crime scene introduced a more complicated factor to the role of prints as both evidence and literal traces of identity. While the photographic image could perform dual functions as both a form of honorific and repressive representation, a metonymic and

metaphorical signifier, despite Galton's musings, the fingerprint would never signify in the same manner. Underpinning Galton's vision for the bourgeois recuperation of the print is a fundamental misjudgment and contradiction over whom and by what means such traces could come to have meaning within specific cultural settings. Galton envisioned a day when the language of prints would be a common syntax of everyday life, much as the photographic image was and remains today, but the fingerprinting system signaled a fundamental shift in the visual paradigms of identification, a shift that required the training and development of a cadre of professional "scientific" detectives.

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[1] Page 6
[2] Page 11
[3] Page 15
[4] In *The Birth of the Clinic* Foucault describes how the Enlightenment especially glorified the clinical gaze and convinced itself of its penetrating ability. In the "scientizing" of photographic imaging, the characteristics of the medical gaze described by Foucault as purely objective--refraining from intervention--"silent and gestureless"--appeared to find its mechanical alternative in the camera. With the nineteenth century invention of the clinical gaze "What was fundamentally invisible is suddenly offered to the brightness of the gaze, in a movement of appearance so simple, so immediate that it seems to be the natural consequence of a more highly developed experience. It is as if for the first time for thousands of years, doctors, free at last of theories and chimeras, agreed to approach the object of their experience with the purity of an unprejudiced gaze" (195). This investment in the power of the scientific gaze and its "prosthetic" imaging technologies to expose hidden truths is the primary premise underpinning the interconnected fields of observational sciences.
[5] Passports were introduced in post-revolutionary France as early as 1792, and other European countries followed suit, requiring such documentation of all subjects passing across national boundaries. These early systems for regulating crime, dissent, and mobility were poorly effected, with blank identity documents frequently stolen and appropriated by criminals. In addition, the methods for *describing* or representing the subject within these documents were so vague as to be useless. Features would be noted as "normal" or "healthy," and, as Simon Cole notes, outside of France, middle and upper class people were not described at all "since the better sots of people found abhorrent the idea of subjecting their physical person to the descriptive gaze of some petty bureaucrat" (10). Other early systems of identification, and specifically the criminal archive, were similarly ineffective in achieving the aims of knowing and fixing identity. Simon Cole notes that the criminal register for New York's Newgate Prison provides a particularly revealing look at how such systems functioned at the turn of the century. Each record denotes name, place of origin, date of birth, and complexion, and in a special column, distinctive "marks" for each individual are listed. Descriptions of such marks were oddly diverse—common characteristics such as blue eyes or baldness might be taken down for one individual, while others are much more subjective or indistinct: "bad nose," "large head," "very gross habit," or "tender eyed" (11). See also Caplan and Torpey, *Documenting Individual Identity: The Development of State Practices in the Modern World*, and specifically Andreas Freeman's essay within that volume, "Governments and Forgers: Passports in Nineteenth Century Europe."
[6] In *Birth of the Clinic*, Foucault describes how Enlightenment presented the practical knowledges of medicine and positivist science "as the restitution of an eternal truth in a continuous historical development

in which events alone have been of a negative order: oblivion, illusion, concealment. In fact, this way of rewriting history itself evaded a much truer but much more complex history. It masked that other history by assimilating to clinical method all the study of cases, in the old sense of the word; and, therefore, it authorized all subsequent simplifications whereby clinical medicine became simply the examination of the individual (57).

[7] For critical histories of the concept of recidivism, see Rennie's *The Search for Criminal Man: A Conceptual History of the Dangerous Offendor* and Rafter's *Creating Born Criminals*.

[8] For instance, Charles Caldwell's *Elements of Phrenology*. Leading theorists of phrenology included Franz Joseph Gall (of Switzerland) who is considered the "founder" of phrenological theory, and George Combe (of Britain) who was the leading phrenologist in Britain in the early nineteenth century.

[9] Simon Cole and Jurgen Thorwald (*Century of the Detective*) both describe how, in Paris, the newly formed Sûrete, headed by former criminal and convict, Eugène Vidocq, was amassing an archive of criminal records. Fuelled by the unending stream of information acquired by the men he planted in prison and on the streets, these archives contained drawings of known criminals and descriptions of their appearance and methods of work. This archive would form the basis of the Sûrete's system of detection, which attempted to create an intimate knowledge of the criminal underworld, constructing a sense of how the criminal society operated, and at the same time fixating on the control of individual criminals. Circulating within this underworld, detectives were expected to imprint the faces of criminal on their memories, in order that they could identify them at a later time. Their recollections would be recorded and indexed in this early form of the criminal archive. These files amassed at a remarkable rate, and were ordered by name, and/or chronologically—thus the efficacy of the retrieval system for these records was contingent on the ability of the detective to memorize both faces, names, or the time and location of specific crimes. By 1857, the files had amassed into an enormous archive of over five million records maintained by an army of clerks. A file existed for each known criminal, detailing names, aliases, crimes and sentences, and appearance. In the 1840s, the hand-drawn image was replaced by daguerrotypes, and by 1879, eighty thousand photographs had been accumulated. In America, the criminal archive found its counterpart in the development of the Rogue's Gallery, and by the 1870s, most major cities and towns in the United States could boast its own photographic collection of incorrigible rogues and imposters.

[10] This shift is described in more detail in the following chapter.

[11] Thomas notes that in the same year as Matthew Brady's *Illustrious Americans* was published, he was commissioned to provide photographs of criminals for Marmaduke Sampson's *Rationale of Crime and its Appropriate Treatment* (1846)

[12] The question of who "discovered" fingerprinting as a system for classifying identity and tracing crime was—and remains--a matter of some debate. This history, and also the extent to which the efficacy of fingerprinting was over-determined within early cases that used the technique, is described in Cole's *Suspect Identities*. See also Colin Beavan's slightly less academic take on the matter in *Fingerprints*.

Chapter Three

Tracing "the smallest points of identity"[1]: Narrative and Scientific Detection

> The microscope which reveals the smallest points of identity, if once fully used, might often establish connections of which ignorant ruffians would never dream—the very mud on a man's boots being enough to identify the connection of person and place, when examined by an experienced microscopist. ("The Scientific Detection of Crime" 1876)[2]

> The detective story, we are reminded in London's *Nature*, is written backwards. The author has carefully laid out his clues all along the track of crime. It is thus an easy matter for the detective, who is in the secret, to pick them up as he goes along. Yet it is not impossible . . . that the same faculty which enables one to devize ingenious detective stories would help in the actual detection of crime. ("Why The Great Scientist Will Supersede the Great Detective" 1911)[3]

> There is no human act that does not leave its record. There is no crime that cannot be traced to its perpetrator, in the light of modern science. We daily identify criminals by the air they breathed at the scene of their crime, by sound registers, by fingerprints, by blood analysis. We throw light into the world of the invisible, and bring light from a world to which our eyes have been blinded. (Edmond Bayle "The Crime Doctor" 1924)[4]

On May 19th, 1911, New Yorker Charles Crispi (a.k.a Caesar Cella) became the first person in the United States to be identified and convicted of a crime through the use of latent fingerprint evidence. Crispi's case began February 23, 1911, with the burglary of a safe in a garment manufacturer's loft. With no eyewitnesses to the crime, New York police were left only with finger impressions that were found at the scene. At trial Crispi pled not guilty, but later confessed to the burglary after testimony by fingerprint expert Captain Joseph Faurot. In light of this "assistance" in the science of fingerprints, Crispi was given the minimum sentence of six months in prison. "I at first had little faith in this expert evidence," Rosalsky said at Crispi's sentencing hearing, "but after the experiment conducted by Lieutenant Faurot in the courtroom, in the presence of the Court and jury...when he was able to designate the person who made the imprint on the glass, I became satisfied that there is something to this science." Lt. Faurot, "of the Bertillon bureau at Police Headquarters," had learned the method some five years earlier when the NYDP Commissioner sent him to London's Scotland Yard to study the new technique of fingerprinting (*People vs. Crispi*). By 1911, Faurot was adept enough at the method to perform a demonstration of this process of identification in a spectacle that, as Simon Cole points out, strongly resembled the infamous courtroom scene of Twain's *Pudd'nhead Wilson* (183).

During the first three decades of the twentieth century, in the United States particularly, representation of the techniques of "scientific detection" dominated over multiple discourses. From legal journals and the academic presses, to the popular scientific press and vastly consumed literary serial fiction, the tools and techniques of this

new type of expert, the scientific detective, were described in miraculous and awe-inspiring detail. Edmond Bayle, French detective and student of Bertillon, would declare in America's *McClure's*:

> There is no human act that does not leave its record. There is no crime that cannot be traced to its perpetrator, in the light of modern science. We daily identify criminals by the air they breathed at the scene of their crime, by sound registers, by fingerprints, by blood analysis. (119)

While photography could provide a means to represent the surfaces and contours of the body and so secure certain truths about identity, it seemed that more powerful technologies such as microscopy, fingerprint analysis, or blood-typing could literally "throw light into the world of the invisible, and bring light from a world to which our eyes have been blinded" (119). Certainly, in an Anglo-American legal context that increasingly privileged the probative value of empirical evidence over witness testimony, the instrumental technologies of forensic science accrued powerful status as truth-telling apparatus.[5] In the United States and Europe, the scientific detective thus emerged as a crucial cultural figure, becoming a symbol for the devastating efficiency and truth-telling power of science.

The narrative of the trace, I argue, emerges during this period as an interdiscursively produced epistemological paradigm for knowing identity, where narrative fiction borrows from science and science borrows from the conventions of narrative fiction. In the courtroom, this narrative rendering of facts into proofs of events and identity was performed by the lawyer or expert. But it was with the new literary form of detective fiction that the narrative paradigm of forensics was perfected. Indeed, early

informational articles on the techniques of scientific detection would refer to literary detectives such as Dupin or Holmes as worthy of emulation, a reference that highlights not only the intertextual production of the discursive technologies of forensic science but also the narrative underpinnings of the forensic paradigm itself. The ordering principle of the detective narrative merged disparate fragments of empirical evidence into testimonial evidence, and thus provided heterogeneous account with a certain cohesiveness and plenitude. The truth-effect of trace as an *a priori* empirical fact, then, was actually the production of the discursive technologies of the forensic narrative. In turn, in light of this increasing ability of science to particularize, identity itself was transformed into a truth derived from the literal matter of the body, and specifically its most particular and minute elements. But this reduction of truth and identity to empirical facts, as I discuss in my concluding analysis of Arthur Reeve's *Craig Kennedy, Scientific Detective* series, also created unique challenges for the detective narrative.

In 1911, the elicited confession and subsequent conviction of Crispi in the trial described above exemplifies the fundamental shift occurring within both legal and law enforcement settings: in trial law, the privileging of physical evidence and forensic testimony, and concurrently the emergence of the "scientific detective," who contrasted significantly with the Byrnesian beat-cop.[6] In the Crispi case, the court, previously cynical about new-fangled "expert" testimony, was transformed into a setting where the newfound figure of the "scientific detective," embodied by European-educated Faurot, could perform his feats, and so transform American evidentiary rules to admit a form of evidence that uniquely identified the criminal.

"Fingerprints, enlarged, occupied the jury in general sessions yesterday" reported *The New York Sun,* in an article that detailed the performance of Faurot during the Crispi hearings. To provide the most convincing case for fingerprinting, Faurot performed a series of somewhat theatrical feats. He asked twelve jury members to provide, in his absence, a set of prints, and for one of those prints to be duplicated on a pane of glass. When Faurot returned, Judge Rosalsky, a self-proclaimed cynic about the science, came down from the bench to watch the process, which was described by the news article in the following terms:

> Lieut. Faurot dusted some white powder with a camel's hair brush over the finger-marks on the glass. He put a bit of black paper under the glass and the marks became distinct. The he shuffled through the pack of slips in his hand. The first seven were quickly discarded after a quick glance. The five next went more slowly. Finally he had three in his hand. Two of these took only a moment's examination. With his magnifying glass he went over to the last slip and over the powder marks on the glass. "The man whose slip is 'I,'" he said, "is the man who made those fingerprints on the glass. ("Jury Study Finger Prints" 39)

After just four minutes, the paper reports, Faurot reached his conclusion and identified the correct individual. Following this act, Faurot went on to present another striking image: enlarged photographs of the fingerprint evidence. Using these images he indicated to the jury how he performed his "trick" which was based on an exact and methodical science. And thus, some twenty years after the publication of Galton's *Finger Prints*, fingerprint evidence finally made its way into the legal precedent. While

Galton had predicted a time when all would be versed in this "syntax," Judge Rosalsky's decision not only heralded the admissibility of latent print-evidence as sufficient for indictment, but also clarified that such evidence required expert mediation. Judge Rosalsky, recognizing the import of the case, urged Crispi to revert from his plea of "not guilty":

> I want you to make a full confession. I can assure you that no indictment will be found against you, or any witnesses who testified in your behalf in the course of the trial, for perjury, but it is more for the interest of justice and science that you tell the truth. It is invaluable for us to know whether or not the expert testimony given during your trial was correct or otherwise. The fingerprint experts are of the opinion that the science of identification, by means of fingerprints, is more exact than the Bertillon system and photography. Did you remove the pane of glass, in evidence here, from the door of the loft of H.M. Bernstein & Brothers? (40).

The image of Faurot "shuffling" through the slips and making a pronouncement to an awed jury, though perhaps sensationalized by the *New York Sun* reporter, nonetheless illustrates the emerging cultural visibility of the "scientific detective" and the spectacle of science. This detective's ability, through applied science, to read identity in the most abstract traces of evidence swiftly raises him to the status of modern hero. Within a cultural context that increasingly privileged the figure of the "expert," the showmanship of Faurot, who performed the feat of detection in an *ad hoc* laboratory contrasts significantly to that of folk-hero Byrnes, a corrupt but effective "father" of the modern police force who protected society via brutish and coercive means, circulating on the

streets among the criminal classes. Epitomizing what was becoming termed in the popular and even academic presses as the "detective of the future," Faurot was a "scientific detective," for whom "[p]olice routine work, the walking of the beats, the direction of traffic, the quelling of strike riots" were things of the past ("Why the Great Scientist Will Supersede the Great Detective" 279). An equal match for the specter of the "scientific criminal," a mastermind who equally occupied the pages of the popular scientific press and serial fiction, this type of expert "must now enter the detective service by another door—that of applied science":

> In every department of crime nowadays science seems to have lent a hand to make easy the work of the criminal. This circumstance greatly discourages the layman who does not realize that were the detective also an applied scientist, the forger, the thief and the murderer would be quickly apprehended. The criminal's own finger prints, as everyone knows, are an infallible means of identification; but the retort and the microscope of the analyst are equally fatal to the adepts in the higher and more scientific departments of crime. (279)

Interestingly, the article cited above appeared in the same year as the Crispi trial, and refers to the now common acceptance of fingerprinting as a means of forensic identification, and indeed, the scientific detective as having many more tricks up the proverbial sleeve. While the "man in the street" might not recognize the potential of novel inventions, the scientific detective is swift to harness the power of the microscope, fingerprint identification, sound registers, pulsation-monitors, and chemical analyses, all of which could render a full account of the events of a crime, identifying a specific

individual by means of "scarcely discernible" of evidence. As the Crispi case demonstrates, this tracing of identity elicits a form of unwilled testimony, a self-betrayal so forceful that it frequently triggers a spoken confession on the part of the suspect.

In the mid-to-late nineteenth century, discussion of the role of science in crime within legal journals and the popular scientific press demonstrated great anticipation over advancements in the field. These pre-Holmesian accounts of scientific detection are characterized by the tendency to assign agency to the apparatus itself, which is cast as the unerring detective of crime. The gaze is defined as a technological mode of looking, with the subjective role of the microscopist or chemists completely obviated. Unmediated and conclusive, imaging alone reveals "damning proofs" of criminal identity as both narrative and process are telescoped into the single act of revelation, enacted by the apparatus. The fine-tuning of devices such as the microscope, spectroscope, and X-ray, meant that evidence previously invisible to the naked eye could be rendered visible, and even the "smallest points of identity" discoverable. In 1858, *The Scientific American* would--in a passage connoting Poe's description of the Prefect's application of "powerful microscopes" in the case of the purloined letter--would prophesy how the "time may not be as yet, but it will be when science will be the strongest arm of the detective":

> The microscope which reveals the smallest points of identity, if once fully used, might often establish connections of which ignorant ruffians would never dream—the very mud on a man's boots being enough to identify the connection of person and place, when examined by an experienced microscopist. ("Science and Justice" 283)

Twenty years later, in 1876, the journal celebrated the extent to which science had aided in the detection of crime that the escape of a criminal was "much less an easy matter than half a century ago." The "unerring detectives" responsible for this revolution, the article asserts are "[c]hemistry, the microscope and spectroscope" that "supply the authorities in a wonderful way, with damning proofs for conviction." So accurately do they "perform" their work, the article reports, that the "merest traces of the organic fluids are discovered; and the spectroscope, if supplied even with an almost inappreciable amount of poison or blood, will furnish sufficient evidence to hang a guilty man" (284).

The enthusiastic reception of advances in forensic science is echoed, in part, by legal journals of the period, which similarly predict the revolution science might effect in criminal law. For example, during the 1870s and 80s a question that continually vexed the practitioners of medical jurisprudence concerned the ability to distinguish human blood from that of other species. The spectroscope, as "that most valuable of all instruments," appeared to offer an "infallible test" for ascertaining that distinction, for "[i]t is competent to detect the smallest trace of blood, even after clothing has been washed." The spectroscope "revealed" blood type by visually striking means, "[o]ne-half of the spectrum, from the violet end, is entirely absorbed, and dark bands appear in the red and green rays." In light of such stunning visual accuracy, the article maintains, surely, "with such an instrument as this at our disposal, the chances for the suspected person are very small" ("The Scientific Detection of Crime" 823). The actual application of the spectroscope to distinguishing blood types among species would be one among many failed approaches and supplanted two decades later by the precipitin test. Nonetheless, attention to visual spectacle within this article appears to confirm a certain

optical truth, a truth only reified by its dramatic effect within a darkened and hushed courtroom, where visible traces of identity would appear to be true--refracted and illumined by rays of violet, red, and green.

In a passage that highlights this hyperbolic spectacularization of science and its devices, and the profound emphasis on vision and image as evidentiary proof, an 1896 article from *The Central Law Review* illustrates not only the devastating efficacy of science in the service of the law, but the figuring of material elements—that "little spot" of evidence—into a cohesive narrative of detection and apprehension:

> As expert agencies in leading to the detection of a crime and in aiding the courts in meting out justice to offenders against the majesty of the law none are more important than chemistry; largely because of its scientific exactness. And this certainty of analysis aided by the power of the microscope, and the wonderful reproductive force of photography combined, have marked the destruction of many poor guilty wretches. . . The darkened court room; the awed force of the blow to the guilty man when he first beholds the evidence of his crime illumined by the light of scientific test. . . The murderer, intent on his effort to avoid suspicion, or to throw off the scent of pursuit already hot on his tracks, yet forgets the little spot, almost infinitesimal, caught somewhere on his clothing in the deadly struggle with his victim. He is in the meshes of the law at last. . . . Beginning with the slight, but terrible indication of guilt, step by step the awful revelation follows, and the guilty one is brought at last through the

> employment of scientific agencies, to the bar of justice. (Edwards 365-6; emphasis added)

Evoking the dramatic setting of the criminal trial, where the narrative revelation of "self" betrayal wrought by the hands of science takes place, here the darkened courtroom becomes a place of awe-inspiring performance, as the chemical expert literally illumines guilt with his devices and reveals the traces of the victim left upon the body of the accused. Chemistry aided by the "certainty of analysis" of the microscope, combined with the "reproductive force of photography" can bring that forceful blow to the guilty man whose literal traces, rendered visible in glowing, microscopic detail, provide a testimony that conveys the ultimate act of self betrayal. While the images here are conveyed as transparent in their rendering of identity and guilt, the passage also demonstrates how the reading of traces is predicated on a narrative (and positivist) principle that assembles "things" into causal links. This trace narrative extends into the past, relating cause to effect with objective veracity, then propels forward to the moment of revelation--the identification of a perpetrator.

As evidence law was transformed into a "science," the lawyer's role gradually changed from being the master of legal tradition and precedent to acting as rhetorical specialist skillfully managing information. "Blending the testimony of witnesses with corroborating material evidence into the 'strong representation' of a narrative" the lawyer's role was to create an "argument that turns even false testimony into account" (Thomas 35). One of the most influential juridical theorists in the Anglo-American context, American legal theorist John Henry Wigmore, would raise the value of material or physical evidence (both circumstantial forms) over that of the direct evidence of

witness testimony. In 1898, Wigmore espoused the guiding principles for this "science of proof," and argued that the scope and function of the law of evidence could be reduced to two basic principles: "(1) that nothing is to be received which is not logically probative of some matter requiring to be proved; and (2) that everything which is thus probative should come in, unless a clear ground of policy law excludes it" (530).[7]

In this context, circumstantial evidence, especially physical evidence, became the most logically probative of "real" evidence, "things" converted into "facts" converted into "proofs." Wigmore, in each new edition of the *Principles*, attempted to synthesize and to take stock of the whole field of forensic science as it bore relation to judicial proof. One main difference between the third and earlier editions, for instance, is the amount of space devoted to such topics as ballistics, fingerprinting, blood grouping, spectroscopy and advances in telecommunications (Twining 140-1). Scientific facts, within Wigmore's theories, thus function as "factum probans" "or material evidencing the proposition" (181). In 1924, Wigmore produced a second edition of his treatise on evidence: *A Treatise on the Anglo-American System of Evidence in Trials at Common Law*. New topics on this treatise included "Fingerprints and Foot Marks" and "Moving Picture Photographs as Evidence," subjects received with much critical acclaim by the legal press.[8] Indeed, Wigmore dedicated the first and subsequent editions of the *Principles* to Dr. Hans Gross, "who did more than any other man in modern times to encourage the application of science to judicial proof." German-born Gross was the first major expert-writer on the use of forensic science for solving crime: "The progress of criminology" he argued, "means less trust in witnesses and more in *real proofs*" (9). He coined the term "criminalistics," a term that contrasted with that of "criminology" which

implied a reliance on the "softer" social sciences, and published *Criminal Investigation*, the first comprehensive description of uses of physical evidence and the application of the scientific method in solving crime and identifying criminals.

The translation of the identity into an effect of identification—traced from the empirical facts of material evidence--emerges as this new discipline of forensic science held increasing sway in legal contexts where witness testimony was approached with growing cynicism and scrutiny, and physical evidence became increasingly probative within criminal trials. Minute traces of the body became new forms of the "perfect clue" woven into full narratives as *proofs* of events and identity. Consistently emphasized throughout these narratives is the manner in which the apparatus can render visible even the minutest traces of identificatory evidence. In the nineteenth century, this crafting was accomplished by the lawyer, but in popular fiction it was the task of the detective to render this "strong representation" of narrative truth from the facts or clues he encountered in the drive to identify an unknown criminal.

This narrative working of trace into truth and identity, performed by the lawyer or expert in the courtroom, was perfected in the emerging genre of detective fiction (Thomas 35). In the late nineteenth century the archetype of this "scientific" detective was embodied by Sherlock Holmes, who became the model not only for the myriad of fictional imitators who followed him, but for practitioners of crime detection and forensic science itself. In these mysteries, forensic scientists not only found a role model in the acetic Holmes, but more specifically a paradigm for crafting the trace narrative. This literature, in part, gave rise to the discipline of forensic science, and within the popular imaginary, assured a harmonious relation between science and trial procedure (Thomas

43). Indeed, our first introduction to Holmes in "A Study in Scarlet" (1892) finds him in his laboratory exalting over his newest discovery, a chemical means to distinguish blood stains from other stains, in a test that uncannily foreshadows the actual invention of the blood precipitin test that would occur five years later in 1897. "Why, man, it is the most practical medico-legal discovery for years. Don't you see that it gives us an infallible test for blood stains?" (7). Holmes, like both the lawyer, who can craft an account of crime and guilt from physical evidence, and the scientist, who proves a theory based on observable and empirical facts, can identify a man by reading the previously invisible or unnoticed proofs:

> By a man's fingernails, by his coat-sleeve, by his boot, by his trouser-knees, by the callosities of his forefinger and thumb, by his expression, but his shirt-cuffs—by each of these things a man's calling is plainly revealed. That all united should fail to enlighten the competent inquirer in any case is almost inconceivable. (16)

Holmes as "scientific detective" does not equip himself with devices and techniques for analyzing clues. Rather, as Thomas notes, the detective *embodies* the device with a gaze akin to that of a microscope or camera, capturing and rendering visible the hidden truths in the minutest or obscure of details. Marks, footprints, dust traces, and physical marks are all interpreted as truths that "plainly" and visibly reveal the facts of past events and identity. Such traces in the Holmes narratives are magnified under the protagonist's gaze, assisted only rarely by a simple magnifying glass.

A precursor for the scientific detective, a master reader of the trace, Holmes elucidates how any sign, no matter how infinitesimal, could be read to determine identity

and restore order. Holmes's influence upon contemporary forensic science and scientists proved ubiquitous, as he was frequently referred to as the ideal model for any detective by real practitioners in the field. Hans Gross, for instance, was commonly termed as the "living" Holmes, with the influential Criminal Investigation appearing some four years after "Study in Scarlet" was published for the first time in 1887. Described by the popular press as a renaissance man, as "a trained criminal lawyer, an expert chemist, a scholar with erudition so vast that it embraces nearly every field of human knowledge," Gross is credited with having "invented the most infallible system known for tracking down criminals." The subject of numerous American newspaper and magazine articles featuring the radical new sciences of detection, Gross developed a system of "detective science" that apparently made "American police methods seem medieval in their crudity" (Kaempffert 99). A 1914 *McClure*'s article decries the brutish tactics of the American police force, consistently conveys methods of scientific detection commonplace in more "advanced" European nations. Here the "simple" application of the scientific method to crime and the question of identity produces a Holmesian detective, who embodies the forensic device and who merely "sniffs an envelope and promptly says that the murder was committed by a blond-haired, blue-eyed man with a scar on his left cheek" (99).

Like Holmes, such detectives recognized science, like narrative, is "but an organization of facts." As such, crime and the question of criminal identity can be approached scientifically, with the facts of crime--specifically material evidence--systematized to create a "real science of crime detection" (101). The narrative procedure of scientific detection both informed and was reflected in the narrative processes of generic detective fiction. The propensity for real-life scientific detectives to cite the

procedures of their literary counterparts, especially Dupin and Holmes, pinpoints not only the interdiscursive production of understandings of forensic science and trace evidence, but also the narrative underpinnings of the trace paradigm of identification. British expert, Charles Ainsworth Mitchell, author of the highly influential *Science and the Criminal* (1914) would impress upon his students and followers the need to adapt a mindset like that of "the detective story writer", and the need to develop the ability to render a full account from the most "inconsequential trifles of evidence," by reconstructing the crime as story in reverse. Though the contrived detective story is "written backwards," a work of fiction where the "author has carefully laid all his clues along the track of the crime," nonetheless, "it is not impossible . . . that some faculty which enables one to devize ingenious detective stories would help in the actual detection of crime." Indeed, Mitchell goes on, "storytellers can succeed in unraveling the mystery where detectives have failed," and as such, "Sir Arthur Conan Doyle might make a distinguished associate for any scientific detective technic" (279).

By 1930, Edmond Locard a leading figure in the history of criminalistics, and "inventor" of the "exchange principle," would introduce an otherwise dry exposition on the role of dust in crime scene analysis with a few words about the study of criminalistics, which for Locard should also include the works of Conan Doyle. Through Holmes, the detective in training learns how to "diagnose" traces, and chain together evidence into a fulsome account of events leading to a crime:

> I hold that a police expert, or an examining magistrate, would not find it a waste of time to read Doyle's novels. For, in the adventures of Sherlock Holmes, the detective is repeatedly asked to diagnose the origin of a speck

> of mud, which is nothing but moist dust. The presence of a spot on a shoe or pair of trousers immediately made know to Holmes the particular quarter of London from which is visitor had come, or the road he had traveled in the suburbs. A spot of clay and chalk originated in Horsham; a peculiar reddish it of mud could be found nowhere but at the entrance to the post office in Wigmore Street. . . . [e]ven such an inspection may develop something significant and one might profitably re-read from this point of view the stories entitled: *A Study in Scarlet, The Five Orange Pips,* and *The Sign of the Four.* Elsewhere Holmes insists upon the interest and fascination to be found in collecting tobacco ashes, on which he says he has "written a little monograph concerning one hundred and forty varieties." (*The Boscombe Valley Mystery.*) On the latter point one should read again *The Sign of the Four*, and also *The Resident Patient.* (277)

Such emphases on the ability of the literary detective to read crime from material evidence impress upon the scientific detective that evidence, especially minute evidence, is meaningless without the ability to create a framing narrative which renders a chain of causes from such trace-effects. The mechanisms of the detective narrative, with its closed structure and positivist bent, could provide account with a certain cohesiveness and plenitude, merging disparate fragments of evidence into the rational and seamless logic of detection. In this sense, "traces" become "facts"—fabricated by narrative, while paradoxically posited as not fabricated. The truth-effect of "the identifying trace" as *a priori* is actually produced by this narrative where fragments of evidence are read by the

detective to create an account of crime and identity. The trace narrative is an interdiscursively produced epistemological paradigm for knowing identity, where narrative fiction borrows from science and science borrows from the conventions of narrative fiction.

Critics have largely recognized Conan Doyle as the inventor of the modern detective archetype, and the popularity of the Holmes narratives produced a spate of imitations on both sides of the Atlantic.[9] In 1910, a new detective appeared on the American scene—Craig Kennedy, Scientific Detective—who was widely advertised in the American and British popular press as the "American Sherlock Holmes." [10] Like Conan Doyle, author Arthur Reeves was something of an expert-in-the-field of scientific detection, if to dramatically lesser extent.[11] Explicitly and unabashedly, the Kennedy series mimics the Holmes narratives in terms of convention and plot. Kennedy and his sidekick Walter Jameson are obvious imitations of Holmes and his Watson; Jameson, a yellow-page journalist narrates each tale of the miracles in detection performed by his roommate, Dr. Kennedy, a professor of chemistry at the University of Chicago. In literary serial fiction, the Kennedy escapades generated enthusiastic reader response in the United States and were also the first mysteries by an American author to gain a wide readership in Great Britain. Kennedy swiftly became one of the most popular detectives for several years, appearing not only within serial fiction but numerous silent films, also written by Reeve, where the central heroine would be rescued from death at the last moment by the white-coated Kennedy.[12]

While Holmes might "embody" the devices of forensic detection, however, the Kennedy plots contrast in the consistent and spectacular representation of the methods of

forensic science. Kennedy maintains that the "[t]he methods employed in the detection of crime are, or rather should be, like the methods employed in the process of discovering scientific truth"; in turn, each Kennedy plot insists upon the uncomplicated scientific or technical resolution of all mysteries. Situated within an American context of modernization where "the social distribution of knowledge begins a major shift" and a transference (as far as technology and technique are concerned) from bottom to top," Craig Kennedy thus epitomizes a new distinctly American cultural hero described by cultural theorists such as Trachtenburg and Tichi (Trachtenburg 163). He is a highly trained expert who can shift aside the traditional and "brutish" tactics of law enforcement for the specialized and arcane knowledge of science, and so advance and even "save" society from its own evils.[13] For instance, the short story "Helen Bond," later published as "The Scientific Cracksman," appeared in the pages of *Cosmopolitan* in 1910 just six months before the historical Crispi case, where Faurot would demonstrate in dazzling display of fingerprinting analysis for the jury. The large proportion of Kennedy's adventures connotes Faurot's performance of science. While Faurot created an *ad hoc* laboratory within the courtroom, the narrative conclusion of each Kennedy tale takes place similarly—within Kennedy's own laboratory, or within one he has swiftly put together at the site of the crime. Each demonstration is witnessed by the necessary cadre of potential suspects and witnesses. A detective or two will also be present, and ready to arrest the perpetrator who "confesses" his or her guilt via the evidence Kennedy brings forth. In the process, old forms of criminal justice are displaced for the higher form of truth, Science.

In an interchange occurring in the opening paragraphs of this first Kennedy tale, Jameson, like a naïve Watson in *The Study in Scarlet*, acts as the perfect narrative foil for the scientist, denouncing that such skills could be learned, but that the good detective is "born and bred to it." While college professors might be equipped to study the sociology of crime, he asserts, "for the detection of it, give me a Byrnes" (1). Jameson thus articulates, if briefly, an ambivalent regard for the application of science to areas traditionally taken care of by law men typified by Byrnes—men who were not afraid to get their hands dirty, ruling and controlling the masses with an innate sense of the criminal underworld and its morés. Kennedy counters:

> Colleges have gone a long way from the old ideal of pure culture. They have got down to solving the hard facts of life—pretty nearly all, except one. They still treat crime in the old way, study its statistics and pore over its causes and the theories of how it can be prevented. But as for running the criminal himself down, scientifically, relentlessly—bah! We haven't made an inch of progress since the hammer and tongs method of your Byrnes. (2)

As writers for *McClure's* and *The Scientific American* decried the "medieval" tactics of American policing, Kennedy makes the very same case. He dismisses American methods of law enforcement as retrograde and un-evolved, he explains, "[w]e are mere children beside a dozen crime-specialists in Paris, whom I could name" (1-2). The case concerns the tracking down of an unknown individual who mysteriously cracked into a safe but apparently took nothing from its contents. This "scientific cracksman," Kennedy notes with admiration, has managed to avoid leaving prints

through an ingenious method, though he "didn't know criminals in America knew that stunt" though "up-to-date criminals in Europe" apparently quickly learned to wear gloves to hide their prints. This case, Kennedy sees, signals the first wave of crime by "scientific criminals," who, "schooled" in Europe would require a worthy foil, similarly schooled in European methods of detection, similarly erudite and far-advanced over the primitive individuals of American police force.

The pursuit of scientific detection, then, posits that positive knowledge of the criminal must approach it as natural phenomena, with its properties or "identities" verified by the empirical sciences. The scientific approach to detection, Kennedy insists, need pay no regard to social factors. Instead, this worldview classifies "the criminal himself" as an object of technical intervention and scientific knowledge. As with Bertillon's nominalist system of identification, such knowledge reveals nothing about the innate or typical character of the criminal, but locates truth in the literal, empirical facts of the material. Compared to the tracing of germs, identity is reduced to nothing more significant than a cluster of bacterium, which can be located and seen in the microscopic depths of the body. The "forcing of man's secrets is like the forcing of nature's secrets," Kennedy explains, with the only difference in the laboratory being the subject matter. "Both are pieces of detective work" (4)

The central narrative premise of the Kennedy series is that thanks to advances in science, the identity a specific individual is always discoverable. "The Case of Helen Bond," is thus described as the "first of a series of unusual detective stories in which the professor of criminal science adopts the new method of making the criminal *discover himself*, and throughout his adventures Kennedy managed to elicit this metaphorical form

of criminal "self betrayal" via his ability to read identity into material evidence (2). Whereas Holmes reads identity into the invisible or "unnoticed" marks upon the criminal body and its traces, Kennedy's technologically assisted gaze extends further into the very cellular makeup of material identity, as applies "science to the detection of crime" by "the same sort of methods by which you trace out the presence of a chemical, or run an unknown germ to earth" ("Silent Bullet" 3).

Kennedy astounds Jameson (and the reader) with the astonishing amount of information about identity that he can garner from even the tiniest trace of evidence. In *The Silent Bullet* the detective, echoing Holmes in *The Study in Scarlet*, speaks excitedly of a dramatic new "discovery" and test for typing blood, one that will surely revolutionize the identification of criminals. By the time the Kennedy series was first published, the precipitin test for distinguishing animal from human blood had been perfected, although the procedure involved nothing more than using enzymes as reagents to separate blood into categories of species. Kennedy's rendition of the "discovery" suggests rather more, however, as he explains how the Carnegie Institute's minute study of blood has in fact helped to reclassify the entire animal kingdom, adding some "surprising additions to our knowledge of evolution." Not only has this test "revealed" distinct differences between blood of various species, Kennedy explains, they also revealed that "the blood of a certain group of the human race gives a reaction much like the blood of a certain group of monkeys, the chimpanzees, while the blood of another branch gives a reaction like that of a gorilla." Kennedy recounts this discovery so he can explain its significance to a case he just recently solved, concerning the mystery of a wealthy man, found murdered on the side of the road. Thanks to this technique, Kennedy

could determine that the bloodstain found on a handkerchief next to the victim was that of the "negro waiter," who, prior to the test, had produced a water-tight alibi.

Kennedy's reading of the blood spot "proves" that in the biological features of the racially-typed blood, the "natural" signs of degeneracy and criminal behavior can be detected. Evocative of a savage criminal body, the negro waiter, is connected to a description of the typical "negro" blood type, and the text of the blood sample is exchanged for that of social Darwinism and eugenics. In this instance, the blood sample (like the fingerprint for Galton) is deciphered as a coded text, and in it Kennedy "reads" the identity of the culprit *and* evidence of an evolutionary hierarchy that confirms the biological supremacy of whites. Kennedy notes that even before starting his tests he had known the waiter did it, demonstrating that the test merely reveals a known truth about the "innate" identity of this type.

Kennedy's account here, however, functions merely as a side-note within the tale of another mystery, where the perpetrator is far less "obvious" and typical than his black counter-part. In the case of the "negro waiter" Kennedy was not required to visit the scene of the crime to establish any motive or account of the events that occurred. He "knew" it was the waiter all along, and the blood test merely confirms what "naturally" had to occur. Kennedy thus clinches the case, and elicits a confession all from the confines of his laboratory. Kennedy's involvement in other "high class" cases, of course, requires much more direct involvement and social delicacy on the part of the scientist.

The process of making the criminal "discover himself" in these tales is therefore much more complex than the simple matter of classifying blood to read racial and/or criminal identity. For the most part, Kennedy does not concern himself with the criminal

classes; instead he focuses his skills on locating criminals who pass unnoticed for what they are in the circles of high society and blood tests to determine the race and evolutionary rank are never required. Kennedy instead unlocks the identities of his criminals--rogue lawyers, corrupt businessmen, vanquished socialites--with more sophisticated devices: handwriting analysis and lie-detectors, for instance. Nonetheless, as in the case of "the negro waiter" within each tale the resolution of the mystery is achieved in much the same manner. Kennedy analyzes the material evidence of crime, and by conducting a series of tests, normally in the presence of all involved, points the finger to the perpetrator who promptly confesses guilt.

It is this biologically superior class of criminal that preoccupies the vast amount of the Kennedy cases, for it is these "undetected" criminals that require more subtle and absolute methods of detection. A gentleman detective and scientist, Kennedy is never required to sully his hands by dealing with the criminal under classes. The incident of the bloodstain is discussed in the opening pages of an altogether different type of mystery, where the identity of the person who murdered a wealthy broker with a silent bullet is much more clever and mysterious, and clearly the work of a "superior" form of criminal mind. While the murder Kennedy recounts in the early passages is an act of violence and aggression, with the victim lying robbed and bludgeoned to death on the side of a road, Kennedy mysteries largely deal with the pursuit of criminals who find more subtle and "civilized" means to manipulate, extort, and murder.

Despite the thrill of the invocation of "the scientific criminal," however, Kennedy's criminals are entirely devoid of character, completely flat and appearing only as vehicles through which Kennedy can perform his feats of identification. "The

unlocking of man's secrets" in this sense requires the reduction of what is hidden to nothing of any more metaphysical significance than a printout from a lie-detector, the classification of a fingerprint, or the analysis of a blood sample. Similarly, the significance of the physical evidence that is brought forth in each case is inflated to such a degree that Reeves has to compensate by somewhat chaotically interjecting rapid accounts of events *not* provided by science even while Kennedy, mysteriously, can assert that the evidence already led him to such conclusions.

The case of "The Silent Bullet," for instance, centers on the murder of a banker who publicly fell dead from a bullet wound. Mysteriously, according to witnesses, "no shot was fired, no smoke was seen, no noise was heard, nor was any weapon found" and yet the coroner recovers a "thirty-two-calibre bullet" from the victim's neck. After scrutinizing the bullet for a few moments, "with his inevitable magnifying glass," Kennedy pronounces, remarkably, that based on this evidence alone "we shall be able to put our hands on the murderer—I think we can get a conviction, sir, on the evidence that I shall get on the bullet in my laboratory." His assertion works to support his central theoretical principle—that the empirical facts of a crime will lead to the identity of the criminal. This is a principle consistently maintained, if not demonstrated, throughout the Kennedy tales.

While the interpretation of the ballistic evidence immediately illuminates something to Kennedy, its relevancy in the case of Parker is withheld until the concluding pages of the tale, where it is translated along with an array of other evidence gathered in the pursuit. Instead, the narrative is propelled forth, not by the reading of evidence, but by the recounting of events by trustworthy witnesses and even details of damning

hearsay-evidence supplied by newspaper men, who are acquaintances of Jameson. In terms of plot development, the reading of empirical evidence is clearly not sufficient in propelling the narrative. The events of the murder, for instance, are not clear from interpretation of the crime scene itself and are recounted by a loyal and confidential clerk to the broker. Until the scientific revelations that conclude and resolve the tale, Kennedy pursues the decidedly subjective back-story to Parker's demise—the origin of the letter, and the motive of any potential murder. Jameson's role as journalist and connection to the managing editor on the *Star* also proves pivotal in the discovery of what led up to the event of death.

Reeves, through Kennedy, takes some pains to foreground that such non-forensic plot devices merely substantiate what is already "known" vis-à-vis science: "In a crime of this sort, two kinds of evidence need to be secured. Circumstantial evidence must first be marshaled, and then a motive must be found. I have been gathering facts. But to omit facts and rest contented with mere facts would be inconclusive." Thus, when Jameson recounts what he has learned, "Kennedy raised his eyebrows only a fraction of an inch. "I had guessed something of the sort," he said merely. "I'm glad to find it confirmed even by hearsay evidence"" (25). While Kennedy asserts that "one shouldn't let any preconceived hypothesis stand between him and the truth" and that he is willing to "make a new guess" should his theory based on empirical facts be proven wrong, he is, of course, rarely pushed into such complications. His reading of circumstantial (in this context, material) evidence always brings the truth, even if in terms of the overarching narrative plot relies on questions of motive. Kennedy as "scientific detective" consistently restates his scientific principles that circumstantial evidence is primary--he

already had secured the knowledge of what Jameson had discovered through laborious account, although how we do not learn.

In order to demonstrate this centrality of the material evidence in creating a full account of events and the criminal perpetrator, Kennedy performs a series of forensic tests in the presence of the suspects of the case. In light of these performances—a ballistic test and fiber analysis, Kennedy states: "I think it is almost unnecessary to add that in the present case we know precisely who—," but does not need to complete his sentence as one suspect "Miss La Neige" succumbs and confesses to her part in the crime. Before she can continue, and fill in the details of the rest of crime and her accomplice, Kennedy swiftly silences her, stating that the "truth must come out," but through scientific means.

Kennedy so returns to the ballistic evidence, where he produces more condemning evidence over the silencer device. Within the room "to all outward appearances not a heart beat was quickened. Someone in that room had an amazing store of self-possession." Kennedy, still withholding the information of the killer, completes his performance with a more stunning demonstration, and promptly informs the group that each suspect has, in fact, been undergoing a psychological test during the entire proceeding:

> Each of your chairs is wired under the arm in such a way as to betray on an appropriate indicator in the next room every sudden and undue emotion. Though it may be concealed from the eye, even of one like me who stands facing you, such emotion nevertheless is expressed by physical pressure on the arms of the chair. (32)

The murderer is revealed as Mr. Bruce, a character who does not speak a single line throughout the tale, has until the climactic scene been able to "conceal from the eye" his true guilt and identity. Even under the conditions of the laboratory, he maintains that "amazing store of self-possession." However, with the "pulsation device" Kennedy has assembled in his laboratory, Bruce is forced to speak another form of testimony, which he provides via the strip of quantitative data that is "merely noted" by a student concealed in another room. Bruce thus supplies a permanent, written record of otherwise undetectable information about the hidden condition of his guilt, which is rendered equivalent to the "curves drawn by the self-recording pens on regular ruled paper." The student has thus "merely noted what took place in the lecture-room as corresponding to these curves" (32-33).

Kennedy refers to the readings as Bruce's "automatic record," emphasizing how the human body, machine-like, might involuntarily produce such a text in the hands of science and the psychological device. Indeed, the Kennedy plots suspects and witnesses rarely speak directly; they function merely as vehicles for demonstrating the devastating impact of science on crime or on discerning guilt. It is these criminal bodies that instead provide testimony by leaving traces of their past behind in the present, distorted and all-but indecipherable traces that can be interpreted only by the trained expert, who reads the trace to enable a truthful and gapless reconstruction of the past. Here, the psychological apparatus, whether a lie-detector or a simple word-association test, is conveyed as equivalent to the application of the hard sciences to questions of crime, and indeed becomes the detective's instrument of choice in eliciting the final testimony of guilt. Moving swiftly from a demonstration of fingerprinting to psychological tests, these plots

make no distinction between the veracity and probative weight of the "evidence" produced by either process. Both are conveyed as forms of unwilled testimony, self-betrayal on the part of a criminal who has been able to conceal true identity.

Certainly, Kennedy's propensity to produce a lie detector at the denouement of each of his cases dates the fiction significantly and is perhaps one of the central reasons for its demise in the 1920s when the scientific credibility of the apparatus was fundamentally challenged by the 1923 case of Frye v. the United States. As an author, Reeve's aim to demonstrate the role of scientific detection and circumstantial evidence means that plot and even logic are sacrificed to the spectacle of forensic detection (Miss La Neige's and Bruce's guilt could have easily been ascertained with some simple questioning based on the evidence, for example). This characteristic of the scientific detective plot, and the overdetermined role of forensic technologies in questions of identity, was quickly lampooned by satirical presses such as *Puck* magazine, whose Sprague Hennerby would much rather deploy bizarre devices such as "Thorwaldsen's lately invented facio-tictacometer to determine identity than simply ask the name of an individual, or to deploy a modicum of 'common sense' in considering why a certain crime might have been committed (6).

This lean towards literal metonymy, where an individual's identity is reduced to nothing more than the metaphysical equivalent of a trace of evidence such as a fingerprint or blood test is arguably what informs the ultimate failure of the Kennedy narratives. On one level, the Craig Kennedy Series' fall from grace might well be due to how swiftly the "new" technologies depicted in the adventure became outmoded and even ridiculous.[14] Indeed, the later stories in the series certainly embarked more into the terrain of science

fiction fantasy, a genre that was beginning to grip the popular imaginary.[15] However, the failure of Kennedy's tales also stems from the over-privileged role of scientific apparatus and positivist logic within the tales, a tendency that reveals how the most "scientific" of narratives depends on other modes of truth-telling in order (paradoxically) to be satisfying *forensic* narratives. In line with theories of "scientific detection" abounding at the time, Kennedy asserts that all that is needed to reach truth is knowledge of material truths, the empirical facts. But to form a narrative of guilt such knowledge is not enough at all. Where in the Holmes narratives we rely on the narration of Watson to draw character, the Kennedy series completely sacrifices character to the lavish display of forensics; and thus the purely scientific, nominalist reading of trace makes for a very flat and one-dimensional narrative. The success of the forensic narrative, as I discuss in the next chapter, relies on the transformation of trace into a symbolic and uncanny signifier, where the skill of the detective is not simply the mastery of the scientific method, but the imaginative ability to access the profundity of human nature.

Significantly, the final of the Kennedy series, *Atavar*, was published in 1924, just one year after the Frye hearings would transform the evidentiary role of lie-detector results and the status of science itself within the courtroom. In the 1923 decision of Frye v. United States, a District of Columbia circuit court ruled against the admissibility of lie detector evidence in a murder case because the technology had not been accepted in the relevant scientific community. This general standard has been followed by most state courts when the question arises as to whether novel scientific evidence should be allowed. By this standard, prosecution and defense are granted the opportunity to attack

adverse scientific evidence, and the role of science, and the scientific expert becomes far less secure and authoritative within the court of law:

> Just when a scientific principle or discovery crosses the line between the experimental and demonstrable is difficult to define. Somewhere in this twilight zone the evidential force of the principle must be recognized, and while courts will go a long way in admitting expert testimony deduced from a well-organized scientific principle or discovery, the thing from which the deduction is made must be sufficiently established to have gained general acceptance in the particular field in which it belongs. (293)

As Thomas has argued, in the decades preceding the hearings, the scientific detective story "explores that medico-legal twilight zone and tells the story of that competition by presenting the literary detective as a 'thinking machine' or rational superhero who is able to detect the truth that conventional representatives of the law cannot" (33). Nonetheless, the legal rejection of the lie-detector during this period suggests a broader cultural disillusionment with devices that can purportedly "unlock" the secrets of the individual, and reduce those secrets to nothing more than an analog printout or the results of a lab test and are thus fool-able.

This disillusionment is dramatically articulated within the form of detective fiction that would supplant the forensic in the United States. Thomas notes that the invention of the hard-boiled tradition of detective fiction in the early twentieth century might be read as a critique of the assumptions underpinning the forensic narrative, specifically the scientific ideal of objective truth, and its propensity to equate the resolution of crime with the question of identity. Dashiell Hammett's *Red Harvest*, first

published in 1929, features a detective who "is not required to solve a mystery that took place in the past, but to survive in a continuously escalating environment of violence in the present." Hammett's Continental Operative, like the long line of hard-boiled detectives who would follow him, is not ordered to "identify or bring to justice a single culprit but to investigate a proliferating state of corruption that can at best be destabilized, not corrected" (91). The ratiocinative detective certainly did not disappear in the following decades, and the hard-boiled detective's European counterparts, Christie's Poirot and Sayer's Lord Peter Wimsey, can be defined by their ability to apply methodical and deductive reasoning to the question of crime. Nonetheless, these fictions can also be defined by their specific attention to the interior motive of the criminal mind, the intriguing "why" as opposed to the dry facts of "what."

The genre of scientific detective fiction also mutated into the emergent sub-genre of the police procedural, which highlighted the specific techniques and processes used by law enforcers, and the primacy of hard evidence or "just the facts" in investigating crimes. Emerging in the 1940s and 50s the procedural form, typified by radio programs and television shows such as *Dragnet*, sought to present to the reader a realistic portrayal of police methods by providing extensive details of police routine and investigation techniques in the solving of the crime.[16] Indeed, frequently within this subgenre, crime itself is depicted as secondary to the specific details of a crime and the techniques employed by the police to solve it; thus larger questions of justice, human psychology, and social order are relegated to second place in relation to the details of daily life in a police station or to the scientific and/or police techniques employed in solving the crime.

Nonetheless, the traits that define the tales of scientific detection at the turn of the nineteenth-century, specifically the privileging of traces of physical evidence over questions of motive and character, resurge in the contemporary versions of the "scientific detective" narrative we see in the televised plots of *C.S.I.* and within the pages of Patricia Cornwell and Jeffrey Deaver. While procedurals are normally presented from the point of view of a police detective, more recently such detectives are not necessarily police officers but expert figures such as medical examiners or crime scene technicians, where the procedures of forensic science take--at least superficially--precedence over other forms of detection. *C.S.I.* for instance, attempts to suppress the attention paid to the personal character of the detective(s) or suspects in order to focus on the science of forensics itself.[17] Driven by plots saturated with forensic detail, contemporary narratives of forensic detection return to the fantasy where scientific objectivism can dislocate all alternative forms of historical account and even replace law itself. The "twilight zone" addressed in the Frye hearings reappears with force in the context of legal negotiation over the most revolutionary and "novel" of scientific techniques—DNA profiling. Like photography and fingerprinting, the inception of DNA profiling raises but also heightens anxieties and questions over the relation of such knowledge, not only to criminal trials, but to fundamental and metaphysical questions over the relation of identification to identity, individuality, and self. Contemporary forensic narratives mediate between the statuses of trace as a mere literal fragment and as an uncanny and even transcendental form of signification.

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[1] Quoted from page 283 of "Science and Justice" in *Scientific American* (1858).
[2] Page 825
[3] Page 278

[4] Page 119

[5] Welsh writes: "Trials were changing from a scene dominated by witnesses to one dominated by lawyers. . . and from the cautious admission of anything other than direct testimony to the professional management of a mixture of evidence" (35). Theories and procedural guidelines for this new "science of proof" were comprehensively formulated first in *A Treatise of Judicial Evidence* (1825) by England's Jeremy Bentham, and at the turn of the century by American John Wigmore with the publication of the vastly influential *The Principles of Judicial Proof* (1913).

[6] Cole notes that fingerprint identification and the role of such evidentiary proofs became routine during this period not only because the technology was refined, but also because of the emerging professionalism of police: "The police were increasingly perceived like impartial scientists and less like political thugs in the employ of party machines. The "scientific policing movement, led by Berkeley Chief August Vollmer and his "college cops,' enhanced the credibility of the kind of police science of which fingerprinting was a prime example" (200). See also Walker's *A Critical History of Police Reform: The Emergence of Professionalism* and *Police in Urban America, 1860-1920.*

[7] Twining notes that "Few works in the history of Anglo-American legal scholarship have been so highly praised or have dominated a field so thoroughly or for so long" (111).

[8] Twining also notes that Wigmore was perhaps insufficiently critical of the claims of scientific crime detection: "Wigmore did not theorize much about his conception of science. From what he says in the *Principles* about psychology, forensic science and the science of proof itself, one may reasonably infer that he held a simple view of science as representing a steady pushing forward of the frontiers of knowledge through the accumulation of more and better data and generalizations tested by research" (141).

[9] The most immediate impact of Holmes, Stephen Wright writes, was found in short stories depicting "scientific detectives." "One approach was to take him seriously as a rational superman and to generate even more intensified versions of his skills in intensely scientific detectives. . . . " (68). Jacque Futrelle's *The Thinking Machine*, which featured Professor S.F.X. Van Dusen as a human "thinking machine" is the most extreme example. (See also Kayman's "The Short Story from Poe to Chesteron" for further discussion of Futrelle). Other scientific detectives from this period include Balmer and Machbargs' Luther Trant (in America) and R. Austin Freeman's Dr Thorndyke (in Britain). Knight says specifically of Thorndyke: "A scientist and lawyer who practices in London's legal district of the Inner temple, Thorndyke brings genuine if sometimes over-detailed authority to scientific detection. Doyle had just guessed you could separate tobacco ashes on sight or tell which way bicycle tracks were going (wrongly, as critics have showed); Freeman gives the specifics" (69).

[10] Advertisements for the books typically cited "Craig Kennedy, The American Sherlock Holmes. Arthur B. Reeve, The American Conan Doyle" and especially highlighted how these works were advancements on the Holmesian formula: "He has taken science—science that stands for this age—and allied it to the mystery and romance of detective fiction. Even to the smallest detail, every bit of the plot is worked out scientifically"

[11] Very little published research is available on Reeves and his Kennedy series, but Steinbrunner and Penzler state that Reeve studied, but never practiced law—becoming a journalist instead. Reeve apparently also wrote a series of articles on the subject of scientific detection, and during World War I he was asked to help establish a spy and crime detection laboratory in Washington, D.C. (340).

[12] Kennedy made his first film appearance in *The Exploits of Elaine* (1915). The two sequels featuring Kennedy were *The New Exploits of Elaine* (1915) and *The Romance of Elaine* (1916). In a fifteen-chapter film serial of 1919, *The Carter Case: The Craig Kennedy Serial* the detective "uses the wireless and x-rays and is shot with phosgene bullets and trapped in a vacuum room" (Steinbrunner and Penzler, 232).

[13] Tichi's *Shifting Gears* and Trachtenburg's *The Incorporation of America* both describe how new form of "professional" hero emerged during this period of cultural transformation. Trachtenburg states that "[a]long with the "quest for greater productivity" which enlarged the role of the accounting office in decisions relevant to materials and labor, transportation, advertising, and sales" another kind of abstract calculation appeared in an "enlarged and more systematic role for science, for basic research as well as applied science and engineering. Professional, white collar personnel expanded the size and influence of office and laboratory, both increasingly distant from the shop floor but increasingly pertinent to the daily arrangements and pace of factory life. Calculations of economy and of science developed in to professional

processes with their own skill and rules, but in the end their effects were felt in the changing relations between human labor and machines, in the steady encroachment of mechanization on the forms of work, of everyday life, and social transactions throughout America" (63).

[14] In 1946, Howard Haycraft described the lack of longevity offered by the Kennedy Series in these terms:'[H]e is, in fact, a pseudo scientist, utilizing all manner of strange divining machines and speculative systems, and employing the latest "discoveries" in the realm of fantastic and theoretical physical research. He is not unlike a composite of all the inventors and ballyhoo doctors of science who regularly supply sensational research copy for the Sunday Supplemental magazines" (49).

[15] For example 1935's *Enter Craig Kennedy,* which was published with a surrealist dust wrapper depicting a robot-machine.

[16] The most prominent early American practitioner of this kind of fiction was Ed McBain whose *87th Precinct* novels focused on life in a big city police force. In Britain, John Creasy created the character of Inspector Roger West of Scotland Yard who appeared in 40 novels beginning with *Inspector West at Home* (1944). Early televised law and order show also followed this formula, most notably *Dragnet* (1951-1959). Roof notes, "*Dragnet* organized and consolidated televisions somewhat disparate images of law enforcement, private detectives, and law into the single, businesslike, straight-arrow ethical figure of police Sergeant Joe Friday. . . . The show mimicked documentary realism ("The story you are about to see is true. Only the names have been changed to protect the innocent") filming scenes on location and narrating an overly detailed attention to exact time, police language, a seeming restriction to "just the facts," and the court's disposition of the offenders" (124). Contemporary law and order shows such as *NYPD Blue, Homicide* and *Law and Order* also utilize these conventions, though, as Roof argues, with differing ideological effect.

[17] Though, as I note in the opening chapter, *C.S.I.* relies far less on "science" to propel its narrative than its surrounding hype would suggest.

Chapter Four

Empirical/Uncanny: Trace Paradoxes in Contemporary Forensic Narratives

The long arm of DNA investigation reached into history to implicate Thomas Jefferson in an extramarital affair with a slave, helped identify the remains of the last Russian Tsar and his family and sealed the case that President Clinton was the source of the world's most famous dress stain. (Jeffrey Kluger, "DNA Detectives" 1999)[1]

For more than a hundred years the murders have remained among the world's greatest unsolved crimes, and a wealth of theories have been posited which have pointed the finger at royalty, a barber, a doctor, a woman, and an artist. Using her formidable range of forensic and technical skills, bestselling author Patricia Cornwell has applied the rigorous discipline of twenty-first-century police investigation to the extant material, and here presents the hard evidence that the perpetrator was . . . ("Frontispiece," *Portrait of Killer: Jack the Ripper, Case Closed* 2002)[2]

In November 2002, following the release of her first work of nonfiction, *Portrait of a Killer: Jack the Ripper, Case Closed*, Patricia Cornwell gave a lecture at the University of Tennessee at Knoxville. The cost for attending the sold-out lecture was fifty dollars, with proceeds going to the University's Forensic School. Press coverage of the event noted the discernible presence of heavily-armed security; Cornwell's lecture was certainly a celebrity occasion, and she did not fail to deliver. According to coverage, Cornwell walked onto stage to rapturous applause, wearing a blue windbreaker with the word FORENSICS emblazoned on the back--a gift from the School. As the applause died down, she opened the lecture by saying "The reason we were able to catch this son of a bitch is one word..." and with that, she stepped out from behind the podium, turning around and throwing her arms into the air, and then pumping her arms and fists downward, pointing to the yellow FORENSICS on her back. The crowd once again "erupted into a riotous standing ovation" (Medine 23). With the publication of *Portrait of a Killer* Cornwell appears to have brought forensic science to its pinnacle, using it to "solve" what has become the one of the most notorious and debated hunts for criminal identity of all time. Finally, it seems, the real Jack the Ripper is "revealed" to us as none other than Walter Sickert, post-Impressionist painter.

Portrait of a Killer details how forensic science has apparently solved one of history's most famously debated mysteries. Though not a certified forensic scientist, Cornwell's widespread influence in the field of forensic science, along with the tremendous wealth accumulated from her sales, has allowed her to pursue the ultimate "unsub"--or unknown subject--of all time. One hundred years of investigation and hundreds of publications could not satisfactorily resolve the identity of the Ripper, but

Cornwell, after just eighteen months of investigation (she claims that before this time she had never even heard of the killings) and millions of dollars of her own money, has apparently produced the "hard evidence," those scientific facts that reveal Sickert as the "evil sonofabitch" who committed the crimes.[3] Cornwell's dubiously argued and somewhat histrionic book may simply be dismissed as a work of no relevance to contemporary matters concerning criminal justice and the role of forensic science in contemporary society. Ripperologists" might balk, as might Walter Sickert devotees, but in the end Cornwell's hobby-horse is precisely that—a marketing device to boost sales of her fiction and her profile as the real-deal. Indeed, despite the assertion that the identity of the Ripper is revealed through the hard facts of physical evidence, the book is far less an exposition of the forensic method than an account of Cornwell's obsession with an artist whose paintings she found offensive. *Portrait of a Killer* is indeed just that--a highly impressionistic account of Cornwell's interpretation of the so-called "facts." In the previous chapter I illustrated how the discursive technologies of the scientific detective borrowed heavily from the narrative conventions of detective fiction. Here the premiere author of forensic detective fiction herself turns forensic specialist.

Cornwell's foray into "real-life" forensics, after more than a decade of penning her fictional forensic detective series demonstrates a particular hubris that actually characterizes a great deal of the contemporary "real" or "genuine" forensic narratives that dominate the mass media. Within these accounts forensics can literally reach back into time to "reveal" the definitive truth of events through identity, and control messy and multitudinous accounts into the seamless logic of detection. As I shall discuss further along in this chapter, Cornwell's overdetermined attempts to resolve the identity of the

Sickert she locates within personal memoirs, photographs, and his art with the "physical evidence" she purports to have traced, highlights how the truth-telling effect of "scientific" empirical evidence is extended when "traces" are transformed from literal facts to symbolic, even uncanny, signs; moreover, such gestures illustrate how the truth-effect of Cornwell's distinctly subjective and slanted research into the life of Sickert is extended when placed in close proximity to empirical "evidence." In cases such as *Portrait of a Killer*, along with the myriad of other "History's Mysteries" solved via forensics that dominate primetime, these forensic narratives attempt to control tightly historical accounts through the monolithic revelations.

While the words and action of historical figures are documented and archived, the narratives of DNA detection suggest their genetic profiles might better reveal them to us. DNA becomes, in effect, a sound bite, "a quick and supposedly definitive source of historical information, less dusty and less confusing than the archive" (Andrews 179-180). As I have discussed throughout this project, popular narratives of forensic detection--and many of the other forms of discourse surrounding forensic science--hyperbolically assert "science" as a higher form of justice, a purer form of the law, distanced from the messy subjectivity and endless litigation hearings that pollute the criminal justice system. If the vast potential of DNA and forensic science lay in its ability to provide more hard "facts," better the forensic and empirical paradigm of truth-telling produces a whole narrative that fills in the gaps of knowledge, controlling and rewriting historical accounts by fixing the truth of identity.

In the first chapter of this project I argued that though the central premise of contemporary forensic narratives is that empirical "evidence never lies," when it comes

to providing satisfying accounts of criminal acts and their perpetrators, that truth is found lacking. The compensatory narrative gestures of televised forensics shows and detective fiction, which typically resort to non-forensic means of truth-discovery, find their rudimentary form in early twentieth-century fictions such as the *Craig Kennedy* series. These stories provide an illuminating glimpse into the instabilities of a prototypical formula that is reinvigorated with full force in contemporary forensic narratives. In the contemporary versions of scientific detection, the truth conveyed by empirical science is privileged as absolute and certain, and, like the Kennedy adventures, center on the spectacle of science itself. But such truth and such spectacle cannot adequately carry the weight of plot or character development.

Contemporary forensic narratives consistently resort to distinctly non-forensic and metaphorical modes of truth-seeking in its dispensing of "empirical" truths. Explicitly, these narratives privilege the spectacle of forensic detection, and attention to the observed "hard" facts, with protagonists frequently posturing over the irrelevancy of witness testimony in light of such knowledge. However, these narratives also work to reconcile the operations of positivism--which asserts the truth of identity to the literal matter of its traces--by consistently exchanging the forensic mode of interpretation for a mode that is concerned with character and metaphysical interiority. Identifying traces, for example, are transformed from literal things into "essences" of identity, or uncanny signs that connote presence and absence, the depth and profundity of that monstrous identity. This contradictory and ambivalent characterization of identifying traces, and the interconnected slippage between forensic modes of identification and the pursuit of the

"individual" in bourgeois sense, is more pronounced in contemporary discourses surrounding the science.

DNA as the ultimate signifier for identity, the "Code of Life," brings the problem of identity and essence explicitly to the forefront.[4] Where, in the late nineteenth century, fingerprinting signaled the shift to a profoundly metonymic form of identification, a sign that signified uniqueness of identity by referring only to its own structure, DNA "fingerprinting" applies the same principles to the very structure of an individual's genes. Developed in 1984, DNA fingerprints are analog representations of the loci where the genetic code continually repeats or "stutters" a sequence of DNA base pairs (the pairs of proteins that comprise the double helix strands of DNA).[5] These Short Tandem Repeats--or STRs--refer to the number of times an individual's genome might repeat the pattern, a repetition that varies sufficiently to determine the statistical probability of a match between two samples. The potency of this technology stemmed from its ability to render match probabilities of striking scale; at present if a match sample from the suspect is available, and the evidentiary sample is free from contamination, probability matches can be as high as one in several billion, which equates to a "statistical uniqueness." Matches are achieved, not by the establishment of the uniqueness of an individual's entire genetic sequence or "code," as is commonly misconceived, but by the relative length of STR patterning in comparison with another. DNA "prints" ignore the DNA in genes in favor of the "junk DNA" in between, and in this, the process fundamentally contrasts with the process of DNA sequencing which works to sequence genetic instructions for humans or other species.

Despite the fact that DNA fingerprinting works only with "junk" DNA, from its inception, the cultural concept of the DNA print has been popularly confused with the so-called "genetic blueprint" for an individual. For instance, in 1988, *The American Bar Association* pronounced that "[t]he test. . . . unlocks the secrets within DNA, or deoxyribonucleic acid, which carries the genetic information that determines individual characteristics such as eye color and body size" (66). In this context, though mere "junk," the DNA fingerprint culturally connotes--erroneously--its more powerful genetic counterpart, which culturally suggests "an enumerable series of chained signifiers that accounts for every fact, aspect, chemical operation, and anatomical morsel of human existence" (Roof 172)[6]. Current methods of DNA typing do not look at the entire DNA sequence, but visualize only a few loci, a minute fraction of all the information available on the entire human gene sequence, a numeric series represented by the analog image of the STR "bar code." Despite the fact the DNA reveals nothing more than an identifying pattern, connoting nothing more than its own unique structure as an identifying trace within popular discourses surrounding forensics, in varying ways DNA signifies whole identity, and its evidentiary value has been overblown.

Forensic methods have been brought into the realm of historical "mysteries"; a spate of feature articles in the late nineties concerning "DNA Detectives" not only outlined the processes of the new form of forensic identification, but foregrounded the potential of "the long arm of DNA investigation" to reach back and solve mysteries from the past.[7] The integration of forensics into historical method supplies definitive "facts" to questions that had previously been of historical conjecture; a new breed of "history detectives" brought "high tech" forensic methods to the seeking of historical Truth.

Popular coverage of forensics especially dwell on the fact that DNA profiling as an investigative technique was recently brought to bear upon the identity of one of the Founding Fathers. While the sexual relationship between Thomas Jefferson and his slave, Sally Hemmings had been long asserted by African-American historians, "[m]ost scholars of the history of slavery had virtually ignored the circumstantial evidence so obvious to African-Americans, and they also dismissed the information that appeared in slave memoirs" (Andrews 142). When DNA tests proved a genetic link between Thomas Jefferson and the youngest son of Sally Hemmings, the results cast the conclusive truth of the matter and brought the issue to the forefront of public attention.[8]

The timing of the discovery in 1999 at the same moment as Clinton's DNA was under scrutiny was not lost on the political press and popular media. *Newsweek* described the discovery of the Jefferson-Hemmings link and its connection to Clinton in the following terms:

> The long arm of DNA investigation reached into history to implicate Thomas Jefferson in an extramarital affair with a slave, helped identify the remains of the last Russian tsar and his family and sealed the case that President Clinton was the source of the world's most famous dress stain. (66)

The articles surrounding "DNA detectives" during this period explicitly focused on demystifying the technology of DNA typing, with most of its visual property given over to graphical explanations of the complex process. *Newsweek's* article features a montage of images featuring Lewinsky's infamous dress from the Starr report, Jefferson's presidential portrait, and a photograph of Sam Shepard, the first man to be posthumously

exonerated by DNA evidence. The images are bound together, marked off by a boundary icon, the now ubiquitous strip of yellow crime scene tape that reads "Crime Scene: Do not Cross." This visual annotation imposes a playful commentary upon the piece, as the DNA detectives make their "arrests."

Nonetheless, this trio of images, juxtaposed against the blown- up images of STR sequences and double helixes that dominate the feature, highlights the metonymic logic at work within these narratives. The body of Clinton is not represented; instead, the presidential body is displaced by a far more potent and readily available stand-in, the stain of so-called "presidential semen" on that dress. The stain, which cannot of course even be seen, can remain unseen, for not only is it indelible in the mind of the popular imagination DNA detection assures that this microscopic sign of identity *can* be seen. The synecdoche for the presidential body was no longer the White House, it seemed, but a stain that bears the much more literal code of the President's body.

The placement of the standard visual topography of forensic science--fingerprints, STR patterns, double helixes--alongside images of archival documents and photography argues that one form of truth-telling has been definitively supplanted by another. More radically, it demonstrates that such seeming definitiveness comes at the sacrifice of a more mythic rendering of truth and identity; even the most venerable and symbolic of identities--a Founding Father, a President--can be reduced to a question of empirical facts. Conceived as the most definitive total signifier for identity, DNA identification appears to bring the epistemological project of Enlightened knowledge to its culmination, a project that overtly disavows the "mythic" to explain events and characters. But if this leaning towards the metaphorical reveals instability within enlightened epistemology, in

turn, as such articles show, the forensic paradigm rebuts or compensates with a spectacle of images as facts that assure that science will always triumph, filling in any gaps and glossing over inconsistencies in knowledge.

The intrinsically positivist bent of forensics--where the truths of past events and identity are reduced to knowledge derived from empirical facts--radically undermines essentialist concepts of identity and self. One example of the cultural fallout from "life" reduced to empirical facts, is the concept of the "genetic self," the idea that essential selfhood lies within the genetic sequence, and identifying traces more than literal facts, but transcendental signifiers, a "sign of the self" that is predicted on a bourgeois ethos of essential and unique individuality. In the early legal history of DNA in the United States, this perception, along with the misconception of the DNA profile as equivalent to the harvesting of genetic sequences of specific individuals, triggered a debate over the constitutionality of DNA profiling for the purposes of forensic identification. In one case, naval officer Donald P. Power refused to give a DNA specimen to the military on the basis that it violated his religious principles as a Native American. He explained, "[m]y body was a sacred recipe to me, and I didn't think I should share it. . . They were not holding a part of me on a shelf. . . You find personal power in knowing who you are" (Andrews 114). These declarations of rights, based on a specific view of DNA as something more profound than an abstract code, typified the early legal struggles over DNA profiling. Indeed, during the late eighties and early nineties, legal articles and notes address their concerns over whether requirements to supply a sample could be deemed as unreasonable search and seizure and so constitute a violation of both the Fourth and Fifth Amendments. Debate centered upon the level of violation that required a DNA sample

involved--for instance, whether such typing was simply another form of "nonviolative" fingerprinting, performed prior to any proof of reasonable cause, or whether DNA testing of suspects and criminals constituted an unreasonable violation of the body, where one's privacy was dismissed as one's very "lifecode" was harvested for means beyond the individual's control.[9]

This invocation of this bourgeois ethos of the self, encompassed by "the very biological substance of people's individuality," triggered anxieties over the violating of civil liberties and a concern that such technologies could erode The Bill of Rights (Benavid 1). Of central concern in these discourses was the rapid development of statewide and national identification databases that would compile individual DNA patterns for ready retrieval by investigators; such a DNA print bank would give "unprecedented access to any information that could be determined from an individual's genetic code" (Pearsall 679). In a 1991 case in Virginia, six inmates from a correctional facility challenged the state's mandatory testing program as unconstitutional. While the inmates conceded that prisoners do relinquish certain rights when they are incarcerated--guards may enter their cells and search their property without first obtaining a warrant or permission--the taking of their body fluids violated their right to bodily integrity, a right they defined as a distinctive category. The tissues of their body, their "genetic blueprint" they maintained, should not be violated even in the context of the prison system. The court disagreed, but one judge was troubled by the decision, conceding that although a prison cell is not private, that "does not mean that body cells are not private" (105). As one lawyer explained, such an exploration "makes many jurists and scientists nervous,

raising such specters as invasion of privacy, a hunt for a 'crime gene,' lab mistakes that falsely convicts someone, and racially prejudiced genetic tests" (Benavid 1).

In popular culture, fictional negotiations of the meaning of DNA have been relegated largely to the realm of science fiction and fantasy, where dystopic portrayals of a world gone awry with cloning, genetic engineering, and scientific hubris demonstrated a profound anxiety over the threat such technologies pose to a bourgeois ethos of self.[10] With the re-emerging forensic detective genre, the representation of DNA profiling and forensic science is markedly less fraught in its imaginings. The invention of DNA profiling and refinement of forensic imaging with digitization techniques has triggered a re-explosion in the popularity of this form of the scientific detective genre. Here, forensic devices of detection are represented in far more spectacular and even reverential tones--the scientific detective has returned, and so too have the devices that promise that identity can be traced via physical evidence alone. Within these plots, issues of motive, means, and opportunity are all subordinated to the question of what the evidence can tell us.

Patricia Cornwell's 1990 work, *Postmortem*, widely acknowledged as the first detective novel to specifically dramatize contemporary advances in forensic science, features Kay Scarpetta, forensic pathologist and Chief Medical Examiner of Virginia. Contemporaneous with the early legal history of DNA evidence, Cornwell's novel dramatizes how the new technology of DNA fingerprinting can be used to track down a killer. Pressured as a single female, but never as a scientist, critics have noted that Scarpetta occupies an uneasy position as a "feminist detective" by virtue of this alliance to science, and its cold rational empiricism.[11] Certainly, Cornwell's work can be

characterized by its deeply ambivalent treatment of gender and society. Sexual predators, often "queered" criminals, are a threat precisely because of their ability to manipulate their traces, even their fingerprints and DNA traces, and thus evade the scientific gaze.

The popular appeal of the series appears to stem from the author's expertise in relating how the techniques of forensic science and narrative assurance that these individuals can always be traced from the empirical facts of a crime. But in her melodramatic pitting of the deeply rational and "civilized" scientist against the "hideous irrationality" of the criminal, Cornwell's works can be characterized by a frenetic straining for effect that actually counters the clinical aspects of the novels and transforms "traces" from literal facts into deeply symbolic, gothic symbols:

> It's not like I'm fabricating spooks and phantoms. I mean, this is a reality: that people are raped and shot and mugged and murdered and generally there's not necessarily an esoteric motivation behind it. ... And I like the sort of fearful symmetry of having *very civilized and human people* who are warring against this. (143)

Postmortem centers upon a serial rapist and murderer, "Mr Nobody," who is literally preying upon the women of Richmond. Early in the narrative, it is established that the criminal in question is a "non-secreter," a term referring to the fact that although the killer leaves large amounts of semen at the scene, it is not possible to determine a blood-type, and thus the evidence actually carries no identificatory or probative significance. Unnamed and untraceable, Mr Nobody is a monstrous and ghostly presence, and indeed, in the opening passages of the book, the protagonist wakes from a dream where she has been haunted by "a face, formless and inhuman" (17). Within a few pages, Scarpetta

examines the body of Mr. Nobody's victim in the pathology suite. As she casts a phosphorescent wand over the body of the victim, she sees "[t]iny fibers lit up like hot wires":

> What we saw didn't register at first. The wand was probing several inches of Lori Peterson's right shoulder when directly over her right clavicle three irregular smudges suddenly leapt out as they were painted with phosphorous. We both stood still and stared. Then he whistled through his teeth as a faint chill ran up my spine. . . The monster had signed his work again. (22-23)

These thrilling traces of the killer are transformed from empirical evidence of identity into uncanny signs, a "signature" that connotes the monstrous identity of the unsub we cannot yet identify. As Scarpetta returns to her nightmares, the monster signified by the trace haunts her dreams—where she can now "almost see" the face of the killer, though it still "had no features" (34).

In a pivotal scene towards the conclusion, Scarpetta receives the DNA fingerprint evidence from the private lab. This is a pattern that resembles a "bar code," Scarpetta notes, to which Wesley responds dryly, "[t]oo bad we can't run it over a scanner and come up with his name." While this is intended as a wry joke, Scarpetta suggests that although "this doesn't give us his identity" only a statistical match, nonetheless "[e]verything about him is there." Hidden within X-Ray image of vertical bands of varying shades is "the microcosm of the total person, his life code." The problem is merely that "the technology isn't sophisticated enough yet to read the specifics, such as genetic defects, eye and hair color, that sort of thing. There are so many bands present

covering so many points to the person's genetic makeup, it's simply too complex to definitively make anything more out of it than a match or nonmatch" (271).

Here, in one of the earliest fictional representations of DNA evidence, DNA becomes a sign that can not only empirically identify the suspect, like a fingerprint, but connotes the killer in much more devastating and totalizing ways. Signifying an entire individual, and standing in for unique individuality itself, the image is more than a pattern; it is a code that *could* be decoded (just not yet) to reveal the entire individual. Both Marino and Wesley's presences in this scene are significant, as two approaches to identity—one based on forensic identification, and the other based on questions of motive and interiority—appear to merge seamlessly as both forensic scientist and profiler examine the evidence together. In a narrative move that typifies Cornwell's fiction, Scarpetta moves from the processes of identifying the killer via the reading of physical evidence, to that of reading the "clues" the killer has left on the victim's body to "get into" his mind. The application of forensics and the narrative logic of identification--where "identity" is a matter of chaining minute material evidence into a full account of guilt and identity--performs as an overlay that lends credence and scientific viability to the distinctly non-forensic mode of "touching evil," which is based on the ability to see into the depths of human nature, and not on the processes of forensic identification.

This paradoxical, compensatory gesture recurs throughout much if the serialized forensic detective fiction that currently dominates the market. Ostensibly, novels like Jeffrey Deaver's *The Bone Collector* (1997) function as textbooks for understanding the science of identification complete with a glossary of forensic terms to educate the reader on the methodologies and techniques used within the plot. Like Cornwell, reviewers

have consistently lauded Deaver for presenting "genuine forensic knowledge" to his readers. The protagonist of the novel is Lincoln Rhyme, a former criminalist, injured on the job four years before and rendered paraplegic. Languishing suicidal in his Manhattan apartment, Rhyme is called upon to bring his expertise to a serial murder case that is confounding the NYPD. As a master reader of the trace, a rationalist super-man, who is almost literally the Cartesian "pure mind" in the literal machine, Rhyme consistently asserts the primacy of physical evidence in conveying the truth. Resisting intuitive questions of "why," he states "[m]otive doesn't interest me," he consistently asserts "[e]vidence interests me" (210). Indeed, literally anchored to his bed, it appears that Rhyme can only read crime and criminal identity via the traces of evidence investigators bring to his room, and this novel focuses explicitly on the investigation of trace evidence. Explicitly, *Collector* is a narrative exposition of Locard's Exchange Principle, the central tenet of modern criminalistics, presenting a plot predicated on the principle that: "there is always an exchange of physical evidence between the perpetrator and the crime scene or victim, however minute or difficult to detect that evidence might be" (426).

Though the protagonist explicitly defers questions of interiority and motive, *Collector* nonetheless applies a series of plot devices to render the character of the illusive "Unsub 823" who has perpetrated a rash of gruesome murders across New York City. The most obvious of these devices is the use of a parallel first-person narrative told from the perspective of the killer, who in his own mind "lives" within an imagined nineteenth-century New York. Similarly, Rhyme's sidekick, the beautiful rookie cop, Amelia Sachs, is constantly at odds with Rhyme over his inability to be "human" or to see anything of any importance beyond the physical evidence. Rhyme relies on Sachs

not only to be his "legs" but to emotionally identify with both victims and killer as she reconstructs crimes scenes. As she works crime scenes, she locates physical evidence that has clearly been planted which requires the investigators to interpret the evidence as a clue to the personality, the essential character, and not simply the nominal identity of the killer.

This conflation of identification--the practical process of ascribing a classificatory identity to an unsub--with revelation of the essential individuality of the criminal highlights once more the central characteristic and paradox of the forensic narrative--the impetus to fix not only identity but essential individuality. While in forensic terms, identification, or the ascribing of identities, is a purely classificatory system of ordering subjects—"typing" or evidence into categories of meaning, a name, a blood type, a fingerprint, an address, for instance—Sachs performs an alternative form of identification. Rhyme requires her to identify *with* the killer in order to read the unique personality of Unsub 823, again not merely his name and address, but his "hopes and aspirations" as well. Not only identity but individual interiority becomes recognizable and chartable.

The narrative of *Collector* quite literally charts this sequential tracing of the killer, with a representation of the whiteboard grid that breaks down information according to "Appearance, Residence, Vehicle, and Other." As more trace evidence and other clues are brought to Rhyme—multiple dust samples, the "monstrous print" of a leather glove, images of shoe-prints—the chart, which is interjected throughout the book, becomes gradually complete with factual detail. Unsub 823 is systematically transformed into an identity (Appearance, Residence, Vehicle) and an individual (Other). It is not only

discovered that he is a Caucasian male with slight build, but also that he may have dual personalities and a keen sense of history. As Rhyme meditates at a moment when it looks like the case was to be taken over by the FBI, they were "getting a feel for him, starting to learn the unsub's language, starting to see him" (208). As the chart fills with information, a formerly cynical Sachs hones her craft and learns to look as Rhyme does.

Thus, as the novel progresses and Rhyme pursues Unsub 823, Amelia Sachs must sift through the "burdensome weight of evidence," and distinguish trace from other false trails, for the central problem of the criminalist is "not that there's too little evidence, but that there's too much" (136). When Sachs encounters her first crime scene, an underground boiler room, where the scorched remains of Unsub 823's second victim lay chained to a steam pipe, she collects evidence intentionally planted by the criminal. Rhyme reassures her that even though this criminal is clearly versed in forensics, apparently clearing the scene of any traces of evidence, Locard's principle assures otherwise. Sachs simply needs to learn to "see" the way Rhyme does. In exasperation she claims "[b]ut there's nothing here." He counters: "Oh, yes there is, Amelia. There's his address and his phone number and his description and his hopes and aspirations. They're all around you" (104).

Searching her third crime scene, Sachs lifts up a small brown leaf that has been touched by 823:

> He's touched it. *Him*. The man who'd killed T.J. Colfax . . . She thought of Locard's Exchange Principle. People coming into contact, each transferring something to the other. Something big. Something small. Most likely they didn't even know what. Had something of 823 come off

on this leaf? A cell of skin? A dot of sweat? It was a stunning thought. She felt a trill of excitement, of fear, as if the killer were right here in this tiny airless room with her." (235)

Sachs's meditation effectively telescopes the entire trace paradigm, as she immediately connects traces that she cannot even yet see with the individual, "*Him*." The microscopic becomes macroscopic, literally and figuratively standing in for the identity and distinct essence of 823. The microscopic "sense" of trace here (and Sachs can only "sense" this trace without the sophisticated technology located in Rhyme's ad hoc lab) is almost sublime, evoking a deep thrill in Sachs. As an uncanny sign, trace is precisely what is not identity, but that which is left behind—it represents the absence of that identity. At the same time, it denotes that identity in a "stunning" synecdoche that brings that person right into the "tiny airless room with her."

The scientific, positivist bent of the forensic narrative is swiftly restored however, as these traces are reigned in as physical clues, empirical facts that aid in the seamless logic of detection, signs that connote nothing beyond their own literal status. Even a criminal as versed in forensic procedure as Unsub 823 cannot evade the investigative gaze that will transform skin cells, chemical elements, shoe-prints, fingerprints, and hair fibers into a full account of guilt. Indeed, Rhyme ruminates over Unsub 823: "[T]he question's not how clever you are but how clever you *think* you are. How confident were you that we'd never find those miniscule bits of yourself that M. Locard assures us you'd leave behind?" (361).

As *Collector* reaches its conclusion, and Unsub 823 revealed as a medical doctor with a grudge against Rhyme himself, Rhyme shares a tender moment with Sachs,

confiding his desire to solve the most deeply rooted mysteries in cultural history. All he needs is physical evidence, *proofs*, and the most complex and debated accounts of humankind can be adequately accounted for, even the crucifixion:

> Calvary. Two thousand years ago. Now *there's* a crime scene I'd like to've worked. I know what you're going to say: But we know the perps. Well, do we? All we really know is what the witnesses tell us. Remember what I say—never trust a wit. Maybe those Bible accounts aren't what happened at all. Where's the *proof*? The PE. The nails, blood, sweat, the spear, the cross, the vinegar. Sandal prints and friction ridges. (329)

Rhyme's statement here, though stated with ironic humor, highlights the central principle of the forensic narrative, which functions as a paradigm for not only tracing and fixing identity, but also for creating full and objective version of historical events—all that is needed are the empirical *proofs* or facts of the events--the "nails, blood, sweat, the spear, the cross, the vinegar--and forensic scientists can "definitively" supply the truth about the most fundamental of ordering mythos of contemporary culture.

The drive to "solve" "History's Mysteries" and to forensically account for events in the past informs a great deal of the popular discourse surrounding the science. Patricia Cornwell's venture into real life detection in *Portrait of a Killer* is similarly predicated on the Locardian principle—the assurance that somewhere, somehow, there must be traces of the real Jack the Ripper that are simply waiting to be discovered. The immense popularity of Cornwell's Scarpetta series immediately guaranteed *Portrait of a Killer* a bestseller status. But immediate upon its publication, the book garnered overt attacks over the author's histrionic obsession with the case, and specifically her suspect use of

forensic science.[12] Certainly, in comparison to the Scarpetta plots, *Portrait of a Killer* is decidedly less well-constructed, its use of physical evidence flawed as Cornwell's quest to forensically trace the real Jack the Ripper becomes a psychodrama concerning her personal vendetta with the man she claims was the killer. Recall that Cornwell dramatically asserted that "we were able to catch this son of a bitch" with one word, "FORENSICS" but within the book Cornwell consistently shifts from a narrative based on the reading of trace evidence to one based on motive. She cannot resist profiling the "evil" mind of the killer, probing into his personality by psychoanalyzing his paintings, letters, and even photographs and an early film depicting Sickert himself; she looks to the face to find the character, or monster, that she cannot locate in the trace evidence.

Nonetheless, the central dramatic revelation of the book is asserted as Cornwell's apparent success in matching the DNA of Walter Sickert to a "sample" from the Ripper. In the opening chapter of *Portrait of a Killer,* Cornwell lines up a battery of evidence against Sickert with the relentless skill of a prosecuting lawyer; the book comprises a prosecution of the artist, with Cornwell problematically serving as detective and scientist, prosecutor and jury. The author was first intrigued by the case, she writes, when she visited Scotland Yard and perused some of the evidence surrounding the case. On hearing that Sickert was among the numerous suspects for the crimes, she looked further--not at the scant physical evidence--but to Sickert's paintings. This prompted a "gut feeling" that he was, indeed, Jack the Ripper: "I am sure there are artistic explanations for all of Sickert's works. But what I see when I look at them is morbidity, violence, and a hatred of women . . . I saw a diabolically creative mind, and I saw evil." As a result, Cornwell "began to add layer after layer of circumstantial evidence to the physical

evidence discovered by modern forensic science and expert minds" and created the case apparently "closed" by this publication (11).

Throughout the text, this conjecture over the inner workings of a killer are interrupted with Cornwell's abrupt return to the empirical evidence supplied by modern forensic science, and specifically the DNA "signature match" found by comparing the DNA excavated from stamps from a "Ripper letter" (one sent to a Dr. Openshaw) to DNA tenuously attributed to Sickert. Careful to acknowledge that she cannot certainly attribute these samples to either the criminal or Sickert, nevertheless, in the same breath she goes on to describe in evocative detail how these sequences came from "them," Sickert and Ripper, "from the cells inside their mouths that sloughed off into their saliva and were sealed in adhesive." These "little bits of identity" would lie dormant until a century later, when DNA scientists would recover these genetic markers "with tweezers, sterile water, and cotton swabs" (11).

If this fragile, tenuously attributed, DNA profile is not perhaps as conclusive as Cornwell would like, the metaphorical transformation of the evidence into "bits of identity" and finally into Sickert himself described as a "twister tearing through a lab" provides for Cornwell precisely the powerful synecdoche she needs to make her case. This fragile DNA print literally and symbolically stands in for Sickert, who, in turn, stands in for the Ripper; the truth of identity collapsed into a sub-molecular particle transformed into a massive force of destruction. Indeed, for the remainder of the book, Cornwell does not distinguish between Sickert and the Ripper; "they" become "him." The traces of DNA evidence gathered from these sources and the "match" garnered by her team of forensic scientists, stand in for Sickert, who is (she is 100% sure) the real

Jack the Ripper. Any ambiguity is rhetorically undercut by the image of Sickert/Ripper's trace, that uncanny "piece of him" that has remained dormant for well over a century, only to be resurrected within the laboratory. The fact there is no proof that the sample came from Sickert is framed as an ultimate act of evasion: The "ever-elusive Walter Sickert has yet to offer us his DNA profile" and is "a forensic scientist's worst adversary" (167).

While Cornwell consistently asserts that she is applying radical new forensic technologies as a means to prove her case, fragile evidence is woven in a plot that is driven by the need to reveal the "true character" of the Ripper. In addition to the DNA profile, Cornwell presents a battery of other forensic evidence. For instance, that letters penned by Sickert in personal correspondence and as the Ripper bore the same watermark. She also employs handwriting analysts to forensically connect the hand of Sickert to that of the Openshaw letter, dismissing the fact that other examiners have stated that no one person could have written all the Ripper letters; Cornwell argues that most of them came from the man, for she has "no doubt that Sickert had an amazing ability to write in many different hands" (178). Sickert was a "compulsive writer who enjoyed persuading, manipulating, and impressing people with his words . . . It would have been in character for him to have written a startling number of the Ripper letters, including some of those mailed from all over the map" (157).

Controlling historical account through omission, Cornwell's invocation of forensics allows her to approach the mystery of the Ripper as a "scientist" and to ignore any historical research that might counter her claims. The forensic evidence proves her claims, and her "profiling" of Sickert merely backs up this knowledge. She argues that

one of Sickert's paintings bears and uncanny resemblance to the crime scene photos of one of the Ripper's victims, although there was no possible way for him to have seen this image. She also uncovers evidence that Sickert's relationship with his father was strained and remote; he bore an unhealthy connection to his mother, which led to his estrangement from his siblings and rendered him always the outsider, and that as a young child Sickert underwent horrifically painful surgery for a fistula (which Cornwell posits as penile) which could have left him impotent. "If" that fistula was penile, she asserts (and she presents no evidence to substantiate this claim) then the three surgeries he endured, "if" they were failures (again, no evidence) have led to genital deformity and impotency, and so a psychopathic monster was made. She connects these "facts" with the fact that the Ripper's victims where mutilated and brutalized with a knife, but were not penetrated vaginally. Additionally, despite her "reading" of Sickert's literal castration, she ignores evidence that he did father at least one illegitimate child.

While *Portrait of a Killer* is a narrative driven by questions of motive--both Cornwell's and Sickert's--a pursuit of the "character" and not merely the identity of the killer, Cornwell and her publicists consistently assert otherwise. The fundamental marketing tactic underpinning sales of the work is that this is The Real-Life Scarpetta. It is with the DNA evidence that Cornwell appears to make her strongest case for pinning down that identity--as a sign for identity, the DNA profile is deemed the most certain and absolute forms of identification. The unrelenting saturation of the work with trademark references to scientific devices and processes, consistently reifies this assertion:

> The extracts of all fifty-five DNA samples were sent to the Bode Technology group, an internationally respected private DNA laboratory,

> best known for assisting the Armed forces Institute of Pathology (AFIP) in using mitochondrial DNA to determine the identity of America's Vietnam War Unknown Soldier. More recently, Bode has been using mitochondrial DNA to identify victims of the 9/11 terrorist attack on the World Trade Center. (161)

The identity of the Ripper has been "proven" not just by Cornwell, this passage suggests, but with the assistance of those conducting forensic exams for the government itself. Yet, it is in this context that Cornwell's grossest inaccuracies are laid out. In terms of the DNA sample collected from a "Ripper letter," Cornwell neglects to mention that scholars have found the most or nearly all the letters coming from "the Ripper" were hoaxes, and that writing them had become somewhat of a sick public pastime. She also neglects to mention that the Openshaw Letter, upon which she pinpoints her DNA hopes, has never been considered a genuine Ripper letter by any of the serious scholars or researchers of the case. Even if assuming that this letter came from the Ripper himself, and that the sample "offered" by Sickert (and again, both these samples were highly contaminated with other DNA and highly degraded) was from him, all that this match could faithfully attest to is that he could not be ruled out. While 99% might seem a convincing statistic for this match, this means that hundreds of thousands of people could not be ruled out either. Central to this problem is the fact that it was mitochondrial and not nuclear DNA[13] that was used for the testing, and this form of DNA, which is found outside the nucleus of the cell, is *not* unique and not much better than blood-typing in its ability to narrow down identity.

Nonetheless, the proximity of forensic identification techniques to the question concerning the "character" or individuality of the killer effects a deliberate confusion between identity, as revealed by identification, and individuality. The "identity" of Sickert/Ripper as the numeric series or "bar code" analog represented by DNA slides easily into a synecdoche for that "evil sonofabich." Cornwell's foray into actual detection results in an account where empirical facts of a crime are laboriously overworked and manipulated into a narrative of guilt; the so-called "hard facts" offered by real life do not seamlessly fit into any such a narrative. The overt contradictions and inconsistencies in this book, however, reveal broader latent instabilities within the forensic mode of truth-telling itself, and specifically the insufficiency of trace evidence in accounting for truth and identity. Such instabilities trigger a reassertion of the essential identity forensics cannot account for. The use of the trope of the uncanny, particularly, allows Cornwell to exaggerate the truth-value of trace, invoking deeply symbolic and mythic renderings of identifying traces, even while it overtly affirms its own status as a positivist paradigm.

Conclusions

The popular fascination with the techniques of forensic science centers specifically on how such "minute" elements as a hair follicle or a sample of DNA rendered from a trace of saliva can become "traces" of identity and ways to re-read the past. In its privileging of positivist logic in determining questions of truth and identity, the forensic narrative always posits that truth as objectively verifiable, first via the analysis of the trace elements at hand and then by the subsequent organizing of these

elemental "facts" into the larger factual and *definitive* account of what occurred. At the opening of this dissertation, I asked "what are the technologies that produce such truth-effects?" Despite its overt privileging of positivist logic and empiricism in determining questions of truth and identity, contemporary forensic narratives rely on distinctly non-forensic mode of truth-telling in order that our identifying traces convey signify something much more than literal and material truths. Within the highly popular generic narratives of forensic detection in contemporary culture, the conflation of identity as an effect of identification with the symbolic concept of essential individuality is evidenced by the consistent manner in which the forensic paradigm for knowing identity is consistently and seamlessly exchanged for an a metaphorical mode of truth-telling. Here forensic scientists identify "with" a killer or traces become uncanny, even unruly symbols for an identity that cannot be accounted for by forensics.

In these narratives, trace evidence as a nominal sign not only is interpreted to identify an "unsub" but is transformed into an uncanny sign connoting the depth of identity. This translation of trace into a metaphor—a monstrous "signature" or a "twister tearing through a lab"—directly informs the rhetoric surrounding forensic science and greatly impacts its cultural weight. Evidence "talks" to investigators, victims "speak" from the grave, and criminals unwittingly provide testimony by leaving their traces to betray them. The consistent presence of forensic science at epochal events such as 9/11 and the Vietnam War,[14] demonstrate the remarkable and disturbing extent to which this narrative confidence in the forensic will reach, as chemists become "sorcerers" practitioners of "Black Magic."

The recent case of Joyce Gilchrist, an Oklahoman police chemist, who earned herself the name "Black Magic," "a forensics wizard who dispatched people to prison with devastating, jury-swaying testimony" illustrates in disturbing terms how this particular credence in the power of forensic science holds sway in both the legal setting and the cultural imaginary. More specifically, the case highlights the significantly over-inflated role of the forensic expert within that imaginary, where the expert functions as a protagonist whose scientific mastery over nature is a form of alchemy that creates logic out of chaos. In 2001, Gilchrist rather publicly fell from grace when she was accused of providing misleading and false testimony in numerous cases where she has appeared as the pivotal expert witness for the prosecution. Over the span of her career, Gilchrist worked over 3,000 cases; her testimony has put at least 23 men on death row, with 11 executed so far. It appeared that there was nothing that this "sorceress" could not do with a fragment of human evidence, and in an interview with *Sixty Minutes II*; Gilchrist herself admitted to Dan Rather, "I seemed to be able to do things with evidence that nobody else could do" ("Under the Microscope"). For a case in 1985, for instance, Gilchrist performed a microscopic hair analysis that appeared to match suspect, Jeffrey Pierce, to the rape and murder of a young woman. Despite witness testimony to the contrary, Gilchrist's presentation of the scientific evidence carried far more weight with the jury, as she explained how a minute fragment of hair found upon the victim could belong to no one other than Pierce. This testimony proved powerful evidence indeed, and it was on this basis of these "facts" that Pierce was convicted for 27 years.

In light of the allegations that Gilchrist had in fact misrepresented the facts, or even fabricated evidence in much of her testimony, the media covering the case were

quick to pick up on the nickname "Black Magic" bestowed on the chemist by prosecutors and the law enforcement establishment. Her status as some kind of miracle worker obscured what was a particularly mundane and unglamorous career as a police chemist. Unlike the highly popularized versions of forensics experts on primetime, Gilchrist's job did not require her to work alongside police as a crime scene investigator, nor to perform autopsies. As a chemist her work would be laborious, repetitive, and largely divorced from any sense of the context in which the sample evidence she tested had been collected; yet, Gilchrist garnered a reputation as something much more than a lab technician, a notoriety she appeared to cultivate and embrace.[15] This rise in status from chemist to sorceress and alchemist seriously highlights the weight given to trace evidence in a criminal investigation, and the attendance and overblown authority automatically bestowed on those who interpret it. It appears that Gilchrist herself was more than beguiled by this version of her self, and took her role as *ad hoc* cop-in-labcoat very seriously. When prosecutors were in need of certain evidence to "fit" a predetermined pattern of guilt, Gilchrist, it is alleged, happily delivered. Her, now-termed, "junk science"--a term referring to the "science" practiced by corrupt and non-objective individuals who take the witness stand as "experts--was easily and without resistance was accepted as fact for over 15 years.[16]

The case of Jeffrey Pierce precipitated a thoroughgoing examination of Gilchrist's work by the FBI and brought the case to public attention. In 2001, lawyers for Pierce succeeded in using a new state law that allowed the physical evidence in a case to be reexamined for DNA evidence. The test results proved that, in fact, the hair from the crime scene did *not* match Pierce, and he was subsequently released and pronounced

innocent. Gilchrist has yet to stand trial for any crime, and a trial seems unlikely, not least, it appears, because any such investigation would lead directly to those police and prosecutors that Gilchrist helped. However, the case appeared to draw attention, if momentarily, to the fact the evocation of forensic science within a courtroom too easily influenced juries and the general public into accepting such evidence as authoritative, *a priori*, and that portioning forensic testing to laboratories that are affiliated (both officially and unofficially) with police departments and prosecutor's offices presents a serious ethical problem. Similarly, the case raised awareness once more about the exculpatory potential of post-trail DNA testing in the U.S. criminal justice system. Here, the "facts" of identity disclosed by the chemist as incontrovertible truth were summarily and powerfully displaced by the more incontrovertible and truer facts of DNA evidence, which represents the identity of the original culprit with far more certainty.

Momentarily, it seems, DNA testing would appear to radically destabilize the criminal justice system—exculpating rather than accusing an individual. Yet even within its use for the laudable Innocence Project, which works to counter the corruption of the criminal justice system by conducting exculpatory DNA tests for men on death row who are appealing their convictions, the approach to forensic science and its techniques of identification is still revered as absolute, a panacea for social injustice. DNA remains a master trope, and criminality and identity are still reduced to the results of a laboratory test that will fix the identity of who did (or did not) perform a crime. DNA typing becomes the miraculous means to undo wrongs, and rewrite verdicts and the historical version of "what really happened." "Junk" science is thus brought down by the purer and higher principled form of science. Despite cases like the Gilchrist controversy, the

Innocence Project participates in the narrative of science as a pure solution for all questions of social justice, even while it dismantles one part of that narrative—that in which the tainted and human "scientist" is beyond reproach.

On one level the project of Enlightenment modernity finds its zenith in forensic science's ability to dominate over nature, truth, and individuals. However, as this project has explored, the truth-claims of forensic science are produced by more than its instrumental technologies of forensic science. The meaning of the instrumental technologies of forensic science and the truths they claim are produced through a variety of mechanisms, ideological, institutional, and cultural. The institutional refinement of the bureaucratic criminal archive and the concurrent development of forensic science, for example, signaled a profound shift in the epistemologies of individual identification. In light of science's increasing ability to particularize, identity thus becomes a truth derived from the literal "facts" of the body, specifically its most particular and "smallest points of identity," which are discernible only to experts, the scientific detectives who render such truths culturally legible. Such knowledge underscores the intrinsically disciplinary power of forensic science as a discursive technology that produces truth-effects at the level of the human subject.

The genre of detective fiction--and specifically its sub-genre of "scientific" or later "forensic" detection--has played an integral and influential role in the institutional development of forensic science and its popular resonance. Such narratives mediate the cultural meaning of the instrumental technologies of detection and identification that "reveal" our identifying traces. The notion of the trace that is predicated on Locard's Exchange Principle, as I have discussed, is hinged upon a distinctly narrative principle,

where trace evidence is chained into a full and cohesive causal account. Early twentieth century tales of "scientific detectives" such as the Craig Kennedy series explicitly spectacularize the devices and techniques of this method, often to the detriment of plot and character. But these tales are the cultural forbearers to the intensely spectacular forensic narratives that dominate primetime and the bestseller lists today. Shows such as *C.S.I.* and its numerous offspring take the spectacle offered by forensic science to new heights and deliver a version of forensics that appears radical, new, and cutting edge and absolute in its ability to know and to control.

As I have shown with the works of Cornwell and Deaver, and the case surrounding Gilchrist, such figurings allow "trace" to signify something much more than "material" truths and work to extend trace's effect. But this compensatory gesture also suggests something more profound about the instabilities and insufficiencies of the forensic paradigm. This contradictory and ambivalent characterization of identifying traces, and the interconnected slippage between forensic modes of identification and the pursuit of the "individual," is more pronounced in contemporary forensic narratives. And such heightened tendency is perhaps symptomatic of the anxieties triggered by the epistemological transformation of identity into an effect of forensic identification. The problematic posed by Poe in "The Murders in the Rue Morgue"--the reconciliation of the forensic with the imaginative, and specifically the role of these functions in perceiving the "truth" of the individual--is only heightened today in a contemporary context where radical new technologies of identification, specifically DNA profiling, appear to have brought the positivist promise of "identifying" the human to its culmination. Currently DNA typing stands, hyperbolically, as the culmination of forensic identification, the last

word in the disciplinary translation of individuals into identities. As an identifying trace DNA appears to fix identity, even standing in for our uniqueness as individuals. However, underpinning much of this rhetoric is the sense that as science approaches the fullness of knowledge with the very secrets of the body's microscopic inner-mechanisms "revealed," the more our identifying traces are transformed into empirical and measurable facts. While the positivist drive to know profoundly disavows any metaphysical searches for truth, the reduction of the truth of "the human" to the literal matter of the body triggers anxieties over the "loss" of essential individuality, and a reassertion of an individuality that such knowledge cannot account for.

The contemporary forensic narrative functions as a familiar ordering principle or metanarrative that helps us culturally to make sense of these disparate fragments of identity. But such narratives also compensate for their own excesses by exchanging positivist, literalist modes of truth-seeking for distinctly metaphorical ones. Interestingly, the latest addition to the programming lineup for Court TV is not another forensics show, but *Psychic Detectives*, where police track cases with the assistance of a consulting psychic medium. The primetime counterpart to this show is NBC's *Medium*, a drama that centers on the same principle. While police procedurals and forensics-based programming show no sign of abating in terms of exposure and popularity, perhaps the emergent genres of detection that center on the occult might also signal a sense of saturation with the empirical science of forensics, and a turn to profoundly symbolic, even gothic, explorations of the "truth." Certainly, the wild popularity of Dan Brown's *The Da Vinci Code* would also suggest a cultural yearning for a return to a mythic form of truth-telling that the forensic paradigm suppresses. *The Da Vinci Code* is a detective

narrative that hinges upon the ability of Robert Langdon, a Harvard symbologist, to read the deeply allegorical and encrypted signs of a profound but concealed historical truth. But even while the plot centers on the deciphering of symbols and the quest for the Holy Grail, the Grail itself translates into the physical body of Mary Magdalene, a body that literally bears much more powerful secrets. According to the history unearthed by Langdon, Magdalene, bearing Jesus' child, fled to France immediately after the crucifixion, thus taking with her the sacred bloodline that would be carried through the French royal family. Hence the discovery of Magdalene's tomb could provide the empirical evidence required to prove such a lineage, supplying a new, literal truth that would overturn greatest Western mythos of all time.

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[1] Page 66

[2] This passage appears in the publisher's frontispiece to *Case Closed.*

[3] Cornwell's exploits were featured in a 2002 BBC documentary, *In Search of the Ripper.*

[4] In *The DNA Mystique*, Nelkin and Lindee argue that the 1990s saw a resurgence of popular genetic determinism, the idea that genes are all-powerful 'master-molecules' directing development and behaviour. Child care manuals switched from advising how to maximize your baby's potential to learning to live with the traits it was born with. This, they argue, obscures other causes of personal and social problems, and diverts attention from other kinds of solutions.

[5] In a recent interview with National Public Radio ("Pioneering DNA Forensics") Jeffries recounted how, while researching the heredity value of the human genome he stumbled upon an aspect of DNA that he immediately knew would be of value in the context of forensic identification.

[6] In this passage, Roof also argues that such totality of knowledge suggested by DNA inherently threatens how the Name-of-the-Father metaphorically stood for lineage. "DNA, it seems, provides the literal end to the problem of a symbolic crisis. The Name is replaced by the comprehensive code; the nothing secured by rhe name's metaphor is supplanted by the too-much something of an overextensive set of signifiers that replace metaphor with fact and Law with a code whose strategically aligned elements simplify into grains of molecular sense.

[7] For instance, Jeffrey Kluger's "The DNA Detectives" in *Time* and Gujan Sinha's "DNA Detectives in *Popular Science* both published in 1999.

[8] Articles on the "discovery" appeared in multiple settings: Don Terry's "DNA Results Confirm Old News About Jefferson, Blacks Say," in *The New York Times*, 1998; Eric Lander and Joseph Ellis's "Founding Father," in *Nature.*

[9] For extended discussion of this legal history, see Andrews and Nelkin's *Body Bazaar* (1999)

[10] Dystopic renderings include: Twins (1988); *Judge Dredd (1995); Alien Resurrection (1997); Gattaca (1997); Star Wars Episode II: Attack of the Clones (2002).*

[11] Critical discussions of Cornwell have largely centered on her credentials as a "feminist" writer of detective fiction, and Scarpetta as a feminist detective.

[12] See "Neither History nor Science" by Terry Melton in *The Scientist* (2003) and Miles Kingston's "Case Closed, Ms. Cornwell: Jack the Ripper Killed Diana" the London *Guardian* (2003).
[13] Mitochondrial DNA is passed via the mother and remains identical; thus maternally related family members are identical in this context.
[14] For coverage of DNA testing on the remains of the Unknown Soldier, see Rowan Scarborough, "Vietnam War Remains identified by DNA test" (1998) and Ralph Watterhahn "Missing in Action" (1998). Coverage of the use of DNA testing to identify victims of the World Trade Center attack was wide-ranging, and occupied both the popular and scientific presses. For instance, Hubbard's "The Unknowns" in *The New Yorker* (2001) and Randerson's "Search Goes on for World Trade Center's Missing" in *New Scientist* (2003).
[15]On *CBS's 60 Minutes II,* Gilchrist explained to Dan Rather how she got her reputation and her nickname: "It was in reference to a homicide case where the defense attorney referred to me in his closing statements as a sorcerer - someone who conducted black magic, and stated that I seemed to be able to do things with evidence that nobody was else able to do."
[16] For more on "Junk Science" see Jim Dwyer, Barry Scheck and Peter Neufelds' *Actual Innocence* (2001).

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