The Lying Brain
To ZACH and SPENCER,
for playing along.
An earlier version of chapter 5 appeared in *Science, Technology & Human Values*; I am grateful to SAGE/SOCIETY for permission to reprint it here. The final, definitive version of “Constructing the Organ of Deceit: The Rhetoric of fMRI and Brain Fingerprinting in Post-9/11 America” has been published in *Science, Technology & Human Values* 34, May 2009, by SAGE Publications Ltd./SAGE Publications, Inc., All rights reserved.
the two researchers agree on is the progress being made through fMRI lie detection.

Until recently, we had not improved very much on the methods of the ancient Greeks, who took the pulse of a suspect under questioning—a rudimentary polygraph in concept. But recent research using functional magnetic resonance imaging, or fMRI, has begun to identify the areas of the brain involved in deception. These laboratory experiments (many done by coauthor Daniel D. Langleben) suggest that accurate, reliable lie detection is finally within reach. (2008, 25)

A quick glance at such a statement might bring a sense of relief: at long last a solution to what Wolpe and Langleben describe as the “ubiquitous, yet difficult to detect” problem of deceit. However, Wolpe and Langleben’s narrative of technological and scientific progress covers over a much more dynamic genealogy of approaches to lie detection and begs several questions: Why should they compare the brain-imaging technology of fMRI to the taking of a pulse, to ancient methods of interrogation? Indeed, why leap from the Greeks to the twenty-first century in the space of one clause? Why assume that laboratory experiments are a recent (if not recently successful) phenomenon in the science of lie detection? Why insinuate that the brain’s blood oxygenation levels, which is what fMRI lie detection relies on, are a better means for the detection of deception than the taking of the body’s pulse?

This book begins by questioning what bioethicists, scientists, pundits, and the press often take for granted: that lie detection research has remained relatively unsophisticated until its most recent leap into brain-imaging technologies and that forms of mechanical lie detection preceding brain-based technologies can be subsumed under the rubric of “polygraphy,” the process of graphically recording several of the body’s autonomic responses to various stimuli. Through impoverished and dehistoricized representations, an artifact (the polygraph) and an imagined machine (the lie detector) have come to stand in for a century of technological explorations and expectations about deception and its mechanical detection.

The Lying Brain argues that instead of providing a break from or a novel approach to lie detection, neuroscience is implicitly recycling scientific and cultural assumptions about deception and its mechanical detection: that lies are measurable phenomena that manifest themselves in the body’s physiology, particularly in the autonomic and central nervous
natural forces, and they testify to each other that they are not betraying but translating the silent behavior of objects” (29). As I illustrate in each chapter, the translation from physiological change to diagnosis of deception requires a large interpretive leap.

The idealization of the self-reporting body is practically and figuratively foundational not only to lie detection but also to the sibling forensic technology of fingerprinting that I discuss in chapter 4. Practically, both lie detection and fingerprinting construct the body as the litmus test for truth about a person. Each technology seeks what Francis Galton termed the self-signatures of the body—those invariant markers of individuality (fingerprinting) or deception. Metaphorically, the individuality of the fingerprint is marshaled by another graphic, brain-based lie detection technology, Brain Fingerprinting (a registered trademark of Brain Fingerprinting Laboratories), which measures the electrical activity of the brain via EEG. Brain Fingerprinting is said to produce a catalog of the information and experiences stored in one’s mind, a catalog that is as unique as one’s fingerprint.

Finally, lie detection depends on the oft-unspoken assumption that deception is the known suppression of truth. Beginning in the early twentieth century and extending to contemporary brain-based lie detection, experimental protocols have taken for granted that when we lie we must know and suppress the truth. In contemporary parlance, the truth has been characterized as more biologically efficient than deception, because deception is said to expend more energy. So, tracing a genealogy of lie detection necessitates tracing a genealogy of truth’s representation as natural and foundational. This is not to reiterate an old philosophy-of-science argument that laboratory science accesses Truth through its experiments; rather, it is a claim about the ways that laboratory experiments are both products and producers of cultural conceptions of truth and its relation to deception. I take up this assumption more specifically in chapters 2, 3, and 5 as I examine William Marston’s laboratory experiments concerning the deceptive consciousness, the literacy of mind reading, and discourses surrounding contemporary laboratory lie detection using fMRI and EEG.

Each of this book’s five chapters contextualizes the three foundational assumptions of lie detection via the sociohistorical development and deployment of scientific theories, literatures, and debates that continue to bear on technologies and practices of lie detection. The first two chapters address theories coined before either the polygraph or the lie
by the time of its financial crisis in 1911, circulation was up to 400,000. In this venue, the Luther Trant stories were enormously successful, so much so that they were often featured in the advertisements for the magazine.

Trant’s stories fit well with Hampton and Dreiser’s vision for Hampton’s not only because of their exciting plots but also because of their muckraking attempts to expose the ineptitudes of police officers and a legal system that denied the importance of applied psychology. Indeed, Münsterberg’s essays and Balmer and MacHarg’s scientific detective fiction share an important affiliation with early twentieth-century muckraking: both published their work in magazines renowned for their journalistic efforts to expose corruption. “As early as 1893, [Münsterberg] had published with McClure’s, but with the advent of muckraking he was called upon for more regular contributions” through which he “voiced a plea for penal reform” (Wilson 1970, 157). Hampton’s Magazine, where Luther Trant first came to fame, has been characterized by Debi Unger and Irwin Unger as “an important muckraking journal of the day” (2005, 108). Both Münsterberg and the Chicago newsmen are invested in discourses of improvement and progress aimed at correcting the corruption of poor police work and legal blunders.

Luther Trant’s narratives are insistent about the potential improvements that could be wrought by the broader application of new psychological technologies to police work and the legal system. In particular, Trant is concerned with the “haphazard methods of the courts” (Balmer and MacHarg 1910a, 95), the torturous third-degree interrogations performed by police, and the basic inefficiency of criminal processing. According to Trant, the obstinate judicial system and police force need applied psychology in order to be more objective, more humane, and more effective. All of these agendas are made clear by the opening pages of “The Man in the Room,” the first of the Luther Trant stories to be published. Throughout the lengthy preamble to the actual story (which concerns the death of a scientist in his laboratory) readers are privy to an animated discussion between Trant, the “brilliant, but hotheaded young aid” (1910a, 2), and his aging professor, Dr. Reiland. While the aging doctor is skeptical about seeing his techniques applied outside of psychology and even notes, “I, myself, am too old a man to try such new things” (5), Trant comes to represent the imminent sweeping changes brought by the “new psychology” (1910a, 325).

Trant’s first point is one of progress and humanity: “It is astounding, incredible, disgraceful, after five thousand years of civilization our police
ened with alarm under my suggestion; how at the point marked 2 your anxiety and fear increased; and how at 3, when the spring by which this cheating had been carried out was before your eyes, you betrayed yourself uncontrollably, unmistakably . . . how your pulse throbbed with terror; how, though unmoved to outward appearance, you caught your breath, and your laboring lungs struggled under the dread that your wrong doing was discovered and you would be branded—as I trust you will now be branded, Mr. Welter, when the evidence in this case and the testimony of those who witnessed my test are produced before a jury—a deliberate and scheming thief. (1910a, 183)

Implied here are assumptions not only about the instruments, their expert interpretation, and their ability to record emotions but also about their real, practical admissibility in courts of law, as we shall see in the next section concerning William Marston and the *Frye v. U.S.* case.

Ultimately, Luther Trant’s proposed reform via instrumental ways of seeing and understanding the criminal, like Münsterberg’s hypotheses, demands that psychology fashion a public following that can place pressure on police, lawyers, and judges. Thus, the final and equally crucial cumulative function of Trant’s collected “achievements” is the production of a public following. By working with the instruments of lie detection, Trant’s collected adventures directly address the issues of popular and legal acceptance of the lie detector decades before its admissibility was reviewed by American courts. Within the stories themselves, several references imagine and predict testing techniques and even crucial cultural centers of lie detection research. Before administering the tests in “The Man Higher Up,” Trant explains the new psychological methods to Mr. Rentland—the U.S. Treasury spy who hired him—by referencing his own past cases: “I am a stranger to you, but if you have followed some of the latest criminal cases in Illinois perhaps you know that, using the methods of modern practical psychology, I have been able to get results where old ways have failed” (1910a, 162). Referring explicitly to his own achievements in Illinois, Trant connects himself to Chicago, the eventual center of lie detector investigation, which produced the Northwestern Scientific Crime Laboratory (1930), the publisher of the *American Journal of Police Science* (1930–32), and the workplace of Leonarde Keeler in 1929.

In “The Man Higher Up” in particular, Trant also confronts the contested space of the courtroom directly, long before the definitive verdict
of Frye in 1923: “You are thinking now, I suppose, Mr. Welter . . . that such evidence as that directed against you cannot be got before a court. I am not so sure of that. But at least it can go before the public tomorrow morning in the papers, attested by the signatures of the scientific men who witnessed the test” (Balmer and MacHarg 1910a, 182). Crucial to this last statement is the dialogue between the spheres of the courtroom, the laboratory, and the public. Even if it is not accepted by the courts, the lie detector’s testimony, in conjunction with the “signatures of the scientific men who witnessed the test,” will be heard by the public.

As Trant successfully solves cases through the use of various instruments, he gains allies (including American and international corporations, private families, and the police) that reappear throughout later stories eager to laud the merits of Trant’s new psychology. In Trant’s ability to convince even the greatest disbelievers—the police, in particular—substantially precedes the actual acceptance of lie detection and other technologies by officers. When he first meets Captain Crowley in “The Fast Watch,” for example, the policeman is not only incredulous about Trant’s “psycho” (1910a, 41) techniques but mocks him, calling him a “four-flushing patent palmist” (57). Yet, once Trant illustrates the physical manifestations of criminal guilt through the use of the galvanometer, Crowley and his lead investigator Walker have little choice but to accept his techniques. As in Münsterberg’s own description of the Harvard laboratory, the inclusion of detailed instrumentation descriptions serves to reinforce the scientization of psychology, while also debunking the conflation of experimental psychology and parapsychology. Moreover, these same officers return to champion Trant in a later story, “The Empty Cartridges.” When questioned about the validity of Trant’s methods, Crowley himself replies, “Mr. Sheppard, it’s myself has told you about Mr. Trant before; and I’ll back anything he does to the limit, since I see him catch the Bronson murderer, as I just told you, by a one-cell battery that would not ring a door bell” (256). By the final story, “The Eleventh Hour,” Trant has succeeded so well in applying his new psychology that he and his techniques are constantly in demand.

As he hurried down Michigan Avenue now, he was considering how affairs had changed with him in the last six months. Then he had been a callow assistant in a psychological laboratory. The very professor whom he had served had smiled amusedly, almost derisively, when he had declared his belief in his own powers to apply the necromancy
of the new psychology to the detection of crime. . . . So well had he succeeded that now he could not leave his club even on a Sunday, without disappointing somewhere, in the great-pulsating city, an appeal to him for help in trouble. (1910a, 325)

Although this trajectory is also present in the individual stories as they were first published in *Hampton’s Magazine*, their cumulative effect is even greater in the collected achievements of the psychological detective. What Münsterberg attempted, Trant completed: he challenged the doubters—the lawyers and police who denied the power of applied psychology—to prove the worth of the psychological detective and concretize the mythos of the machine. Even “in the face of misunderstanding and derision, [Trant] had tried to trace the criminal, not by the world-old method of the marks he had left on things, but by the evidence which the crime had left on the mind of the criminal himself” (Balmer and MacHarg 1910a, 325).

As Münsterberg urged and Balmer and MacHarg illustrated, lie detection achieved a position of relative prominence among police officers and the public—if not the courts—in the decades following the publication of *On the Witness Stand* and *The Achievements of Luther Trant*. By pre-dating and predicting the “achievements” of forensic science, *The Achievements of Luther Trant* illustrates the utility of fictional accounts: it predicts scientific advancement, aids in popularization, and influences the ways science can signify in culture. An analysis of Balmer’s, MacHarg’s, and Münsterberg’s early collected work also reveals an alternative history for the development and dissemination of lie detection. We will see this even more clearly in the final section in which I specifically address several of Luther Trant’s adventures that were reprinted by Hugo Gernsback. Before moving on to the republication and repurposing of Luther Trant, I briefly cover the intervening decades in which the founding principle of lie detection and various lie detectors emerged, applied psychology finally had its day in court, and the lie detector found purchase in the public consciousness.

Unauthorized Science: Mechanical Lie Detection Goes to Court, 1923

During the two decades following the initial publication and collection of the Luther Trant series, the development of lie detection tests began to mimic the predictions of Münsterberg, Balmer, and MacHarg. On the
psychology. Yet, instead of isolating psychologists, lawyers, and policemen within their respective fields, Frye v. U.S. helped usher in another era of cross-disciplinary legitimation for the lie detector in both fiction and science.

Strategic Reemergence: Hugo Gernsback and Luther Trant, 1925–30

Far from losing faith in lie detection after the Frye case, proponents of lie detection constructed a network of science and fiction in which they—and their machines, techniques, and theories—were indispensable to the public. Marked by a confluence of sensationalism and edutainment, scientific texts, and popular nonfiction of the era worked to enliven themselves through true crime stories, while literary authors and editors of the period sought to scientize their narratives by referencing and using the very technologies they sought to validate as scientific. In 1925, Hugo Münsterberg’s On the Witness Stand was reissued. His directive to bring this discussion to the “wider tribunal of the general reader” sounded all the more appropriate in light of the Frye case conclusively proving that “the lawyer and the judge and the juryman are sure that they do not need the experimental psychologist” (1908, xi). Indeed the law versus psychology rhetoric emerged anew after the Frye case.

In the scientific and popular nonfiction literature, Münsterberg’s reissued call for a “wider tribunal” took many visible and hybrid forms; most referenced the fiction of Luther Trant’s major predecessor, Sherlock Holmes. In 1930, editors of the American Journal of Police Science translated and republished Edmund Locard’s work on “The Analysis of Dust Traces.” Locard, founder of the first modern crime laboratory in France in 1910, argues that “the police expert, or an examining magistrate, would not find it a waste of his time to read Doyle’s novels . . . and one might profitably reread from this point of view the stories entitled A Study in Scarlet, The Five Orange Pips, and The Sign of Four” (1930, 277). Henry Morton Robinson’s Science Catches the Criminal (1935), a veritable encyclopedia of criminalistics from their inception through the mid-1930s, begins by citing Sherlock Holmes and goes on to combine historical facts with sensationalized true crime stories. In fact, a 1935 New York Times book review praises Robinson’s work for this very reason, lauding the virtues of the “dramatic” stories included throughout and noting that “his book deserves the widest popular attention, for its theme [of technologies for criminal investigation] is one of universal and funda-
detective story will be relegated into the background in a very few years. . . . Literary history is now in the making, and the pioneers in this field will reap large rewards” (1930a, 28). While his hopefulness about both scientifiction and scientific detective fiction is certainly biased and self-interested, Gernsback’s definitions and the popularity of his magazines ultimately ushered in a new genre that did stand the test of time: science fiction.

Part of his success can no doubt be attributed to the fact that in all of his publications, Gernsback was invested in an “edutainment” model that valued stories that could teach his readers something about science, technology, and progress while also entertaining them. In his editorial introduction to Amazing Stories Gernsback extols the virtues of his magazine by noting, “Not only do these amazing tales make them intensely interesting reading—they are also always instructive. They supply knowledge that we might not otherwise obtain—and they supply it in a very palatable form. For the best of these modern writers of scientifiction have the knack of imparting knowledge, and even inspiration, without once making us aware that we are being taught” (1926, 1). His vision, like Münsterberg’s, is centered around both guiding and relying upon the power of a lay audience’s support.

In 1926 and 1927, Gernsback republished not one but four Luther Trant stories in Amazing Stories: “The Man Higher Up,” “The Eleventh Hour,” “The Hammering Man,” and “The Man in the Room.” He would later republish them for a second time in Scientific Detective Monthly between 1929 and 1930, with the addition of “The Fast Watch.” The sheer volume of space devoted to these Luther Trant stories and the fact that they were published alongside the likes of Edgar Allen Poe, Jules Verne, and H. G. Wells indicates Gernsback’s estimation of them. The Luther Trant stories were arguably also selected because they fit Gernsback’s model of edutainment: they educated audiences through expository lumps and embedded textual representations of lie detection technologies, they worked from and for a prophecy model forecasting legal validation, and they reassured the public about the possibility for crime prevention and criminal punishment via technology in an era of increasing police corruption and gangster violence.

Gernsback’s purpose can be seen in the explanatory text boxes he inserts into the stories. In the case of Luther Trant, Gernsback includes information about the technologies used by the psychological detective, in order to highlight what is new and different about Trant’s stories: as
The Achievements of Luther Trant (1910). Instead, they are a selected set of narratives that explicitly demonstrate the chronoscope and four different technologies that can be used for lie detection (the pneumograph, plethysmograph, galvanometer, and sphygmomanometer), which were later combined into one machine known as the polygraph.

Aside from introducing the public to the instruments, Gernsback was invested in a visionary model of science fiction, for which he would assume the role of disseminator. “Many great science stories destined to be of an historical interest are still to be written,” Gernsback argued, “and Amazing Stories magazine will be the medium through which such stories will come to you. Posterity will point to them as having blazed a new trail, not only in literature and fiction, but in progress as well” (1926, 1). In the case of the Luther Trant stories, Gernsback foregrounds his role in bringing this technology to the public for approval, even after it has been deemed inadmissible by the courts. In a offset text box embedded in the first page of “The Man Higher Up,” Gernsback notes that “while the results of psychic evidence have not as yet been accepted by our courts, there is no doubt that at a not so distant date such evidence will be given due importance in the conviction of our criminals” (Balmer and MacHarg 1926, text box, 793).

In the third story in this miniseries, “The Hammering Man,” another text box mimics Balmer and MacHarg’s own fiction-science paradox, noting that “the strange part about it all is that although the story is written as fiction, the results can be obtained readily any time today, as the instruments used are well known and can be found in any university and up-to-date college laboratory” (Balmer and MacHarg 1927b, text box, 1118). Moreover, the republication of these four stories not once, but twice—first as science fiction/science fiction and then as scientific detective fiction—mirrors their eventual, though fraught transition from speculative technology to applied police science.

Lest lie detection appear dangerous and invasive, the stories reprinted by Gernsback also inform the public about the numerous ways that such technologies promise to protect and intervene on their behalf. It is no coincidence that Gernsback’s reprints emerged in the social climate of the late 1920s and early 1930s during which political corruption often ruled the police force and organized crime ruled prominent cities like New York and Chicago (Powers 1983; Walker 1977, 1998). Lie detection, along with the move toward police professionalization, became more widely and readily acceptable because they promised to sanitize,
Marston was not interested in the “objective” truth or falsity of a subject’s narrative but in the subject’s own feelings, knowledge, or perception of that narrative. In his conclusions, for example, Marston remarks that “the behavior of the b.p. [blood pressure] does not act as the least indicator of the objective validity of the story told by any witness, but it constitutes a practically infallible test of the consciousness of an attitude of deception” (1917, 162; emphasis in original). Marston sought to prove that this deceptive consciousness not only existed but was standardizable: a “lying complex” sufficiently uniform in different individuals to be experimented upon as a unit” (117).

Not surprisingly, Marston’s showmanship in the 1930s and 1940s and his increasingly global vision of the political and personal applications of the lie detector test have eclipsed his scientific innovations in laboratory-based lie detection. In lie detection scholarship, Molly Rhodes, Geoffrey Bunn, and Ken Alder have all focused on Marston’s popular appearances and publications, not his series of important academic articles that appeared in print between 1917 and 1927. These articles introduce several features of lie detection experimentation that continue to influence contemporary protocols: first, that there is such a thing as the deceptive consciousness; second, that the deceptive consciousness can be induced by playing one of three roles I have termed the antagonist, the false witness, and the mock criminal; and finally, that there is a modern and acceptable language for interpreting graphic data produced during laboratory studies of deception. Taken together, Marston’s experimental protocols have shaped the way we understand and classify acts of prevarication as “working objects” (Daston and Galison 1992, 85) of laboratory science.

In what follows, I first situate Marston’s experimental work within the broader context of emotions and laboratory science of the late nineteenth and early twentieth centuries. I then analyze Marston’s laboratory research conducted between 1913 and 1922; these studies were the first published records of lie detection experiments in America. Included here is a detailed description of Marston’s experimental design and protocols, followed by an analysis of several key assumptions that inform Marston’s conceptualization and deployment of the deceptive consciousness.

Invoking: The Mechanics of Emotion

Developing laboratory culture of the latter half of the nineteenth century was founded on an ideal of objectivity and depended on replicable
umes of the *Journal of Experimental Psychology*, and criminological journals. And, long before the *Frye* case, Marston was sensitive to the requirements for juridical admissibility of applied lie detection. In a 1920 publication, he noted that “our present trial systems demand, not only expert testimony, but the qualification of the expert by proof of the existence of a commonly known and recognized body of scientific fact upon which the expert bases his opinion” (73). By 1921, he was optimistic “that long before the legal problem of such tests is solved the fundamental psycho-physiological elements will be rather clearly analyzed out” (1921a, 570).

To make his case compelling outside the laboratory, Marston extrapolated from his working object (the significant lying curve) to his major concept, “the deceptive consciousness.” Marston hypothesized that the deceptive consciousness is uniform among individuals and that “we must, therefore, seek objective, quantitative measurements of the psycho-physiological symptoms of the deceptive consciousness” (1920, 73). By 1921, he was optimistic “that long before the legal problem of such tests is solved the fundamental psycho-physiological elements will be rather clearly analyzed out” (1921a, 570).

Marston’s reasoning, once again, in part, from a lengthy analysis of Walter Cannon’s work on emotion and respiration and Vittorio Benussi’s work on deception and respiration. Building on Benussi’s research, Marston argued that “Benussi’s results, indicating as they do great definiteness of lying symptoms, are sufficient to warrant the assumption of the uniformity of the deceptive consciousness as a working hypothesis” (1917, 118). Although he later modified this uniformity hypothesis to include two types of deceptive consciousness, he consistently argued that the body will always betray symptoms of deception so long as an attitude of deception is present.

By 1925, Marston defined the deceptive consciousness without reference to either the significant lying curve or the systolic blood pressure; it became simply “a certain definite state of the organism characteristic of a voluntary attempt to deceive another person” (1925, 244). In this process of black-boxing (Callon and Latour 1981, 285), Marston’s deceptive consciousness sloughs off its production to become a distinctly measurable phenomenon. Instead of seeking a significant lying curve and extrapolating a deceptive consciousness, the deceptive consciousness is expected to produce a significant lying curve whenever a subject attempts to manage nervous reactions he should not be able to control. Recursively constituted, the deceptive consciousness appears uniform among individuals and is, ostensibly, infinitely evocable within the confines of a laboratory.
Thought in Translation

Reading the Mind in Science and Science Fiction, 1930–50

In a very true sense psychology contains all the possibilities of fiction and can become as fascinating.

—David Seabury, *Unmasking Ourselves*, 1924 (xxii)

In October 2003, PBS and *Wired Magazine* featured brain-based lie detection on their new show *Wired Science*. The show and the imaging technology it featured were advertised with the caption “We’ve got mind reading down to a science.” The unspecified *we* is reminiscent of the ever-vigilant Esper Police in Alfred Bester’s *The Demolished Man* (1951/1953) or perhaps the Thought Police of George Orwell’s *1984* (1949). But in the *Wired Magazine* advertisement, reading the mind through brain imaging suggests that science has surpassed science fiction in that there is an objective, interpretable correlation between anatomy, physiology, and thought. Through the technologies of brain imaging, the advertisement claims, we can finally visualize not only the brain but the mind itself. As with Hugo Münsterberg’s mental microscope, the foundational assumption is that the mind (though not inherently material) can be made so through technical intervention. And forget about hiding from or evading the searchlights of science. Below the caption, the ad copy reads, “Beating a polygraph test is one thing. Beating a machine that can actually read your thoughts is another.”

As this advertisement illustrates, popular representations of brain
imaging often envision the technologies as not only objective and invasive but also capable of translating electrical activity or blood oxygenation levels into meaningful messages. In short, we imagine these technologies could do what the ad copy promises: read our minds. In recent years, scholars have addressed representations of brain imaging in the media with specific attention to the way visible models are often seen as more objective and true than other types of data (Galison 1997; Daston and Galison 1992; Joyce 2008); the tendency for and consequences of using imaging and visualization as a means to understand human behavior (Dumit 2003); and the elision of brain and mind, or the “mind-in-the-brain” (Beaulieu 2004). In this chapter I illustrate a complex genealogy for our popular perceptions of brain imaging technologies, one strand of which goes back to the development of a literacy for mechanical mind reading in the sciences and science fiction of the 1930s to the 1950s. During this era telepathic experiments were recognized as academic science, human electroencephalography (EEG) produced graphic images of the brain’s electrical activity, and fictional narratives imagined machines that could read our mind, projecting thoughts as sound and image.

Examining these earlier conceptions of mechanical “mind reading” in multiple disciplinary sites reveals a persistent belief in a psychophysical literacy that constructs the mind as, at best, a transparent medium and, at worst, a text to be translated and interpreted by a set of expert technicians. When this literacy was first constructed for and by a lay audience, as it was in the sciences and science fiction of the 1930s to the 1950s, its simplified, mechanized vision helped to shape perceptions of and expectations for what would become the sciences of brain imaging. As we will see in chapters 4 and 5, the legacy of mind reading continues to inform the scientific and journalistic representations of contemporary lie detection. In this chapter, I address the construction of several ideological assumptions about the mechanics of mind reading: first, that thought and energy are essentially interchangeable or transmutable, if not one and the same; second, that thought can be translated rather transparently from energies into recognizable sounds and images and, moreover, these thought pictures are representative of one’s character; third, that there is an anatomical and psychological space (the hidden lower brain) that houses dangerous, primitive thoughts; and, finally, that thought can serve as material evidence in a criminal prosecution.

To make my case, I take seriously Susan Squier’s assertion that “sci-
periments. Indeed, Rhine’s work at Duke University made parapsychology (telepathy, extrasensory perception, and telekinesis) a legitimate field of academic study. Meanwhile, psychiatrists, such as Hans Berger, captured and recorded brain waves in graphic form. Berger’s work on human electroencephalography at the University of Vienna, which began in the 1920s, spawned nearly a decade of debate and incredulity from the scientific community. Unlike J. B. Rhine, Berger found academic validation not in his own laboratory but in the laboratory of two American scientists who, in the mid-1930s, confirmed Berger’s original findings. As both approaches to thought energy are imbricated in the ideological assumptions about mechanical mind reading I analyze in the science fiction of the 1930s to the 1950s, I would like to take a moment to explain telepathy and EEG here.

Scholars have thus far provided detailed analyses of telepathy’s emergence (Luckhurst 2002), its reputation among the natural sciences (Millet 2001), and its relevance to scientific and literary movements (including “vibratory modernism” [Henderson 2002]). However, none of these analyses attempts to explain telepathy’s visual history, including its turn to the visual between the 1930s and the 1950s. Understanding this turn to the visual legitimates telepathy as a key component in the genealogy of popular conceptions about brain imaging, including their ability to read our thoughts by making them visible.

The study of and belief in human telepathy had long been motivated by efforts to prove that thought was both a transferable and a visible phenomenon. In a typical telepathic experiment, one person would concentrate on an image, a word, or an experience in an attempt to transmit that object or feeling to another person, often termed a percipient. The receiver, or percipient, would record whatever images s/he saw, usually on paper. Distance was not a factor, nor were material barriers such as walls. Parapsychologists around the world relied on images as the best transmissions for telepathy. The work of academic scientists such as J. B. Rhine and René Warcollier and amateur scientists such as Upton Sinclair depended upon the image as a means to validate the telepathic experiment.

In both Upton Sinclair’s Mental Radio (1930) and René Warcollier’s Mind to Mind (1948; English translation, 1963), telepathy is demonstrated through a series of correspondences dependent on visual records sent from telepathic agents and received by telepathic percipients. Prefaced by Albert Einstein and followed by an addendum by Walter
for the first time, he feels explicitly objectified by McDowell, who regards him “as though he were gazing upon a specimen through a microscope” (7). And after a few moments of intensive attention from the machine, Dick explains, “I had the sense of being before the Seat of Judgment and having the Power of Powers unveil my misdeeds to the hosts of the world” (6). The journalist is not only evaluated but exposed, “unveiled,” for all of his “misdeeds.” Despite this description in which the machine divulges Dick’s secrets, McDowell has already patronizingly assured him, “‘Surely there is nothing in that brain of yours that you would really fear to have your old friend, your best friend, know” (7).

In hopes of combating any self-revelation, each character who comes in contact with the thought translator attempts to thwart its invasion by the same means that subjects have attempted to thwart the polygraph: through self-control. Their efforts jibe, more specifically, with one of the foundational assumptions of lie detection: that it takes extra effort to deceive oneself or another person. Or, put another way, by McDowell, “you will find this much less strenuous if you let yourself go and do not attempt to keep your thoughts from me” (7). Each of the characters in the story expresses the strenuous nature of their endeavor to deceive both the machine and themselves. Upon hearing his thoughts reveal himself, Dick exclaims, “I must take my thoughts in hand—must guard my ideas. And I heard myself thinking: ‘I must be guarded, careful’” (6). Taking one’s thoughts “in hand” is a somewhat unexpected expression. One’s physical body becomes one’s only means of controlling the expression of thought; this control is not concerned with the erasure of thought but, instead, its expression in language. “Must concentrate so that my thoughts shall not be uttered,” Dick thinks out loud. “This flashed through my mind” (6). Once Judge Crowell’s love interest becomes vulnerable to the machine, she too muses, “I must be very careful what I think” (17). Dick interprets this as being “strong-minded”: “A strong-minded woman, this, I thought, for the picture which came upon the screen showed no whit of agitation, so quickly had she gained control of herself. Strong-minded, indeed, to be able to throw her thought into the channels that she desired” (17).

Strong-mindedness implies a certain mastery over the self-in-translation, including the inhibition of less desirable responses. Control, then, has to do with emotional agitation and outward expression. Such self-control shares much, perhaps, with the history of and theories about human inhibition (Smith 1992). Inhibition, notes Roger Smith, is a term
Moreover, there was a proliferation of science fiction that predicted criminality would be exposed and cured by the very “rays” that Holmes so adamantly detested but which were being marketed as instruments of social progress.23 By 1948, J. B. Rhine offered a brief history of and argument for psychical research into telepathy and related phenomena, presenting the sciences of extrasensory perception (ESP) as a remedy for social ills. His concern, particularly after the violence of World War II, was not whether these phenomena exist, but how they could be employed: what effect “they may be expected to have upon relations among men” (166). “Good human relations,” he argued in *The Reach of the Mind* (1948), are “not to be based on faith or guesswork” (166); “Our feelings for men depend on our knowledge about them” (175). This is all part of a general movement in popular culture and fiction of imagining mind reading as a literacy that could facilitate interpreting the criminal mind in ways that reveal material evidence. And it was believed that such supersurveillance could lead to widespread social reform. Alfred Bester imagines such a world in *The Demolished Man*, a novel that was first serialized in the pages of *Galaxy Magazine* in 1951.

*The Demolished Man* is the story of Ben Reich, a corporate giant in twenty-fourth-century New York City, who tries to get away with murder. While he succeeds in killing his rival, Craye D’Courtney, Reich cannot escape the “Espers” (think ESPers) who, as a kind of psychic police force, telepathically monitor thoughts, emotions, and intentions. Thanks to these “brain peepers,” “there hasn’t been a successful premeditated murder in 79 years” (Bester 1996, 23). Reich initially outwits telepathic surveillance by creating a “mind block” impenetrable to even 1st-class Espers who are able to “peep” the unconscious levels of the mind.24 Yet, the guilt welling up in Reich’s unconscious is eventually detected by Lincoln Powell, 1st-class Esper, criminological specialist, and lead investigator of the D’Courtney case.

Akin to the other narratives I have explored, the Espers’ visualization of thought via telepathy is explained in the novel as a conglomeration of thermodynamics and psychoanalysis. When Espers communicate with each other, they are described as “dualists fencing with complicated electrical circuits” (33). According to Detective Powell, telepaths are not special beings; they have simply developed and/or learned how to capitalize on their energy stores. “Every human being has a psyche composed of latent and capitalized energy. Latent energy is our reserve . . . the untapped natural resources of our mind. . . . Most of us use only a small por-
deeper levels of mind determine the self: “The mind is the reality. You are what you think” (28). As we have already seen, the adage “You are what you eat,” which imagines your diet and character are mutually imbri-cated, has been reimagined to include thought as particulate matter; “You are what you think” imagines your thoughts and character to be in a similarly reciprocal relationship. One’s thoughts, like one’s diet, are expected to be changeable; psychological notions of reform have been cen-
blazing channel of doubles, pairs, linkages, and duplicates to—Reich?
Imposs—Yes, Ben Reich and the caricature of Barbara, linked side to
side like Siamese twins, brother and sister from the waist upward.
(150)

Somewhere in her subconscious, Barbara realized that Ben is her half
brother—the illegitimate son of D’Courtney himself. In this case, insider
information (pun intended) provides a lead for Powell’s investigation;
however, Barbara’s subconscious is not code-able evidence as of yet. Af-
ter emerging from Barbara’s psyche, he explains the process to a fellow
Esper as follows: “Trying to make sense out of fragments in the Id is like
trying to run a qualitative analysis in the middle of the sun... You aren’t
working with unit elements. You’re working with ionized particles.”
(151). Once again, we are reminded that thought is energy, and energy,
matter; yet here, even particulate matter does not inspire the kind of
surety it does in other narratives. This difficulty with the imagined part-
iculate matter of thought helps to cognitively estrange us from other,
similar assumptions about the body and character. Neither physical bod-
ies nor particulate thoughts are the best matter for evidential debates.

Moreover, Powell has several flaws that hinder his so-called objectivity
and call into question the state’s reliance on mind reading as a literacy
for understanding “the truth in people.” Ironically in a novel about the
detection of deception, the detective is best known for his dishonesty.
“The trouble with Powell,” in particular,

was an enlarged sense of humor, and his response was invariably ex-
aggerated. He had attacks of what he called “Dishonest Abe” moods.
Someone would ask Lincoln Powell an innocent question, and Dish-

honest Abe would answer. His fervent imagination would cook up the
wildest tall-story and he would deliver it with straight-faced sincerity.
He could not suppress the liar in him. (27)

It is in this very humanity, this ability to creatively deceive, that Powell’s
powers of observation trump Mose. When it comes to the final negotia-
tion of capturing Reich and saving the life of his hostage, Hassop, Powell
insists that they leave the Reservation. “This needs finesse,” Powell tele-
pathically transmits, “I don’t want Reich to know I’m abducting Hassop. It’s all
got to look logical and natural and unimpeachable. It’s a swindle” (164). Pow-
ell’s comment illustrates the utility of logic, not as judicial proof or unim-
peachable evidence, but as a cover—as a means to disguise deception.
the eruption of the Indian Mutiny [1858] against British rule” (Thomas 1999, 217), implying that one goal was to reestablish waning British colonial control. Sir Francis Galton’s famous text, *Finger Prints* (1892), which helped to solidify the use-value and application of the technique for British and American criminalistics, is often cited as the foundation of fingerprint identification systems; however, Herschel’s experiments in the colonies preceded Sir Francis Galton’s monograph by nearly forty years. And long before Herschel, individuals in many countries, including China and India, used palm and even foot marks as signatures for contractual agreements (Lee and Gaensslen 1991).

Yet, as the British began to use finger *prints*—instead of marks—for documentation, they also assumed possession of the technique. Herschel’s retrospective narrative history of fingerprinting, *The Origins of Finger-Printing* (1916), denies the legitimacy of digital systems of identification used in other parts of the world, while reaffirming the “experimental” nature of his investigations in India. He does so explicitly in an appendix to the volume that covers any and all references to digital marks preceding his own work and that of Galton, a list that includes Thomas Bewick, Johannes Purkinje, and indigenous peoples in Bengal and China. Each historical use of the finger’s mark is deemed helpful but incomplete. When commenting on the Chinese use of digital marks, for example, Herschel tells us that “the science of identification by means of the pads cannot, in my opinion, date further back than 1858, when I happened to use oil-ink, which was not used for tep-sais [a finger-tip ink blot]” (40). Later, he explains in no uncertain terms that the main difference between the British system and all others is that “these marks were not made, as ours are, expressly to challenge comparison; that, in fact, they offer no points for comparison” (41). “In conclusion,” Herschel skeptically writes, “it is hard to believe that a system so practically useful as this could have been known in the great lands of the East for generations past, without arresting the notice of Western statesmen, merchants, travelers, and students. Yet the knowledge never reached us” (41). With this final line, Herschel reaffirms not only the power, dynamic grasp, and omniscience of British national identity, but also the right to control and commodify the knowledge of other cultures/colonies.

The prints Herschel collects are granted far more currency, literally and figuratively, than the marks or smudges of other cultures. His book contains the hand prints of an Indian merchant and a facsimile of a Chinese bank note stamped with a fingerprint that Herschel categorizes as a
niques. These techniques, including fingerprinting, promised to unify and make uniform the government’s ability to identify and punish those who broke the law. In conjunction with this criminal campaign, a civilian fingerprint registry was developed that promised to protect the law-abiding citizen. Anyone who chose not to submit their fingerprints would be “failing to avail himself of a bulwark against the imposter, the schemer, the faker and grafter who may at any time bring him annoyance, loss of money, and distinctly unfavorable publicity” (Hoover 1936d, 7).

The 1950s campaign followed the second Red Scare of Communist invasion. Hoover, who published Masters of Deceit: The Story of Communism in America and How to Fight It (1956), instituted radical forms of governmental surveillance best embodied in figures such as Joseph McCarthy who helped establish a particular status quo. As literary historian and analyst Katrina Mann notes, “anxieties about communism, anticommunism, radiation, and the assimilative impulses of an emergent technocracy were frequently posed as threats to white, patriarchal, or heterosexual primacy”; indeed the “atmosphere of postwar American anticommunism was used domestically as a discursive and political tool to protect the sociopolitical status quo” (2004, 51). In the case of both the 1930s and 1950s campaigns, Hoover’s powerful position allowed him to employ forensic techniques at a civilian level in the name of national security.

By the time Jack Finney’s “The Body Snatchers” was serialized (1954) and collected as a novel (1955) the FBI still reigned as the best organization to help free America from an “alien” invasion. Critics have argued that the FBI—and, by extension, Hoover himself—is the only governmental institution in Finney’s novel to remain unaffected by the invasion of the body snatchers. “Indeed, of the American institutions mentioned in the novel, ranging from Eisenhower to the telephone company, only the FBI remains sacrosanct: it alone is never doubted” (Johnson 1979, 12). In fact, the initial Colliers serialization of the novel relies on the FBI as a deus ex machina that arrives just in time to provide reinforcements in the final scene. Given that the novel makes specific reference to two cultural contexts—Hoover’s FBI in the 1950s and the historical construction of fingerprinting as a means to codify and solidify individuality—it should be no surprise that the protagonists’ first encounter with the alien Other centers around a set of blank fingerprints. As we shall see in the next sec-
tions, the pod-people are literally unmarked before they are fully formed and unremarkable after receiving their final stamp of individuality: a set of fingerprints that are identical to the body they have copied.

Deceptively Human

Set in 1953, Jack Finney’s novel Invasion of the Body Snatchers (1955) represents a cultural moment during which identities—particularly the identity of the alien, the foreigner, and the communist—were being reconstructed as crucial to national security. Critics have long associated the novel with Cold War anxieties, including conformity, communism, and the science of the atomic bomb (Mann 2004; Seed 1999; Hoberman 1994; Johnson 1979); in so doing, they often draw comparisons between the pod-people and collectives whose unseen infiltration could potentially succeed before being unveiled: from communists to McCarthyites, on the one hand, and immigrants and minorities, on the other (Mann 2004). While Invasion of the Body Snatchers expresses fears about alien invasion and racial integration, particularly in terms of their effects on suburban American values, the novel is not just an allegory about assimilation gone awry.

What critics have overlooked thus far is the novel’s investment in and reliance on various methods of identification and locations of individualization, including the fingerprint. As object and trope, the fingerprint is comparable to what Bernadette Wegenstein has termed “faciality” (2002). Once the locus of identity or a “window into the soul” (Brumberg 1997, 62), the face has lost purchase since the late nineteenth century, a process evident in the shift from Bertillonage to fingerprinting I have been detailing. In “Getting Under the Skin, or, How Faces Have Become Obsolete,” Wegenstein argues that over by the past century, the face has also been revealed as a “code” whose “role can be taken over by any other body part” (2002, 235). This code of identity and individuality—even of the soul—has shifted inward: “the priority of the face—in other words, faciality—has moved into the body, to organs, DNA, and other important hidden ‘information’” (234). In using the term code, I refer both to Wegenstein’s definition and to Simon Cole’s distinction between marker and code (2001, 309). In both cases, code is more than descriptive, it is prescriptive: a set of “blueprints” (310) that give meaning to a marker.

In Invasion of the Body Snatchers, the face quickly proves inadequate for identification; the fingerprint (as object and trope), which takes its place
one’s individuality—in this case, individuality as defined by the things that one recognizes and/or knows.

An outgrowth of magnetic resonance imaging (MRI) technology, blood-oxygen-level-dependent functional MRI (BOLD fMRI) uses electromagnetic waves to scan subjects’ brains for changes in blood oxygenation levels. Scientists hypothesize that neural activity requires oxygen, which neurons cannot independently produce; active neurons receive more oxygen from the blood than inactive neurons. BOLD fMRI is sensitive to this variation in blood oxygenation levels; increased brain activity is inferred from increased blood oxygenation.

To measure which, if any, regions of the brain are activated by deception, many fMRI studies ask participants to commit a mock crime (similar to those I described in chapter 2), and then lie about their activities while inside an fMRI machine. A computer asks questions, and subjects are asked to respond by pressing “yes” or “no” on a handheld keypad. Because the technique constantly monitors brain activity, researchers claim that deception can be detected even before the subject presses an answer into the keypad. Thus far, the anterior cingulate gyrus and the prefrontal and premotor cortex have been identified as “more active during Lie than Truth” (Langleben et al. 2002, 731).

In terms of protocol, fMRI detection and Brain Fingerprinting rely on similar test paradigms to contemporary polygraphy. In both fMRI and Brain Fingerprinting the mental activity often is being tested is memory: the recall of various stimuli in Brain Fingerprinting and the recall and subsequent inhibition of past events in fMRI deception experiments. Any conscious denial of a memory is deemed indicative of guilt or deception, particularly if either test ostensibly detects familiarity with a particular stimulus. The two newest detectors test a subject’s memory via the established protocol of the Guilty Knowledge Test (GKT). The GKT, which has been used in traditional polygraphy since 1959, is made up of probe, target, and irrelevant stimuli (words, images, pictures, etc.); irrelevant stimuli establish a baseline from which to test reactions to target and probe stimuli. Probes are crime-relevant information, the possession of which implies “guilty knowledge” and therefore criminal involvement. Targets include publicly available crime-relevant information (from trials, the press, etc.) that allows technicians to establish a baseline response (autonomic or brain-based) for recognized but not self-incriminating or “guilty” knowledge. The GKT assumes that only subjects involved in the crime would recognize and unconsciously react to the
Indeed, Bester’s *Demolished Man* and Halperin’s *Truth Machine* demonstrate in both form and content that peepers and ACIP scans are more alike than they are different. Thus, instead of remarking on the ways in which literature misrepresents, incorrectly predicts, or outwardly chastises (pseudo)science—positions that would unnecessarily limit the scope of this analysis—I have focused on the ways in which technology bridges and binds literature and science as marketers, interpreters, and arbiters of various instruments, techniques, and practices.

Despite the forty-five years between *The Demolished Man* and *The Truth Machine*, their plots are nearly identical: a CEO murders his competitor and avoids detection by reciting verse to foil the technologies of lie detection. While Ben Reich of *The Demolished Man* chooses an infectious advertising jingle, “Tenser, Said the Tensor,” the main character in *The Truth Machine*, Pete Armstrong, relies on a piece of Americana: Walt Whitman’s “Oh Captain, My Captain.” What differs is not the method but the substance of their mental reiterations. The poems permit each man to avoid the national surveillance systems that are policing intent and deceit. However, one man hides behind utter banality, while the other screens himself in distinguished prose about an eminent man.

The different verses are, arguably, indicative of several aspects of lie detection we have seen throughout the past chapters: their ubiquitous repetition, which can be readily seen in any of the three assumptions I have been tracing; their progressive, even philanthropic appeal, which can be seen in the historical promise of the polygraph to mitigate the violence of the third degree and in contemporary lie detection’s pledge to allay concerns about the accuracy and reliability of the polygraph; and their virulent hold on the American cultural imagination, which is evident in their revitalization in the face of technological failure.

Let us begin with repetition. In *The Demolished Man*, banality is a state of mind and the state of the universe: the continuous repetition of man’s inventions and crises. “In the endless universe,” explains the narrator, “there has been nothing new, nothing different. . . . This strange second in a life, that unusual event, those remarkable coincidences of environment, opportunity, and encounter . . . all of them have been reproduced over and over” (243). Ben Reich’s struggle for capital and personal control, his psychological self-destruction, and his desire to thwart detection are nothing new. Neither is the tune he chooses. When he asks for the most persistent jingle from Psych-Songs, Inc., “a tune of utter monotony filled the room with agonizing, unforgettable banality. It was the quin-
4. For cultural analyses of lie detection, see Bunn (1997, 2007) and Thomas (1999); for an additional historical perspective, see Alder (2007). In his dissertation (Bunn 1997), the first scholarly history of the lie detector, Geoffrey Bunn argues that the lie detector was created in and by popular culture long before it was ratified or even examined by science; however, he also proposes that these ‘machines were not . . . lie detectors. They were ‘machines for the cure of liars,’ ‘truth-compelling machines,’ or even ‘scientific crime detectors’ according to Scientific American, but they did not detect lies’ (Bunn 1997, 43). In his most recent monograph, The Lie Detectors (2007), Ken Alder makes a similar argument by claiming that the lie detector was not invented until John Larson, Leonarde Keeler, and William Marston began to experiment with the polygraph: a machine that combined two or more inscription technologies. Ronald Thomas comes closest to recognizing the earlier lie detectors—at least in concept—when he cites Edgar Allen Poe’s ‘The Telltale Heart’ and even Daniel Defoe’s claims about criminality and a quickened pulse. But Thomas has little interest in reframing early inscription technologies as lie detectors, and, for that reason, does not recognize The Achievements of Luther Trant: An Introduction to the Application of Physiological Instruments and Psychological Methods to the Purpose of Lie Detection.

5. Pseudoscience shares the problematic associated with ‘junk’ or ‘bad’ science: it is not objective, does not use the scientific method, and/or is not accepted by a mainstream scientific community. For more information on how I use the term junk science in this book, please see my explanation in the introductory chapter.

6. Many scholars have chronicled part or all of this historical trend; see, particularly, Hale (1980), Ward (2002), Dror (1999b), and Bunn (1997).

7. For a history of the development of and controversies surrounding the chronoscope, see Schmidgen (2005).

8. Word-association tests typically involved a list of words to which a subject was asked to respond with the first word that came to mind. Each word from the original list acts as a stimulus to produce a response; the time between stimulus and response is said to increase if the subject is trying to conceal information (which in this test translates to a slower response as the subject chooses a nonincriminating word as a response). In the 1870s and 1880s Francis Galton experimented with word-association tests (see “Psychometric Experiments” [1879]), and Wilhelm Wundt also included word-association tests in his experiments (see, e.g., Grundzüge der physiologischen Psychologie [1880]). See also Wertheimer and Klein (1904) and Carl Jung (1906); for a meta-analysis see Wertheimer et al. (1992).

9. Münsterberg’s catalog of laboratory equipment can be found in his own Psychological Laboratory of Harvard University (1893); the chronoscopes appear on pages 12–13.

10. For analyses of the shift in modes of seeing, see Daston and Galison (2007), on objectivity in scientific imaging; Ward (2002), in psychology; Thomas (1999), in early forensics, detective fiction, British/American culture; Dror (1999b), on emotional inscription technologies; Brain (1996), on the shift from
Balmer published serial fiction with the Chicago Daily Tribune between 1916 and 1951; with Philip Wylie, Edwin Balmer published When Worlds Collide (1933) and After Worlds Collide (1934); the former was made into a film. Between 1927 and 1949, Balmer served as editor of Redbook Magazine. Further information about Balmer and MacHarg can be found in several encyclopedias, including Philip Greasley’s Dictionary of Midwestern Literature (2001), Chris Steinbrunner and Otto Penzler’s The Encyclopedia of Mystery and Detection (1976/1984), and John Reilly’s Twentieth Century Crime and Mystery Writers (1985). However, the best sources for information about Balmer are his stories and the press about him available through the Chicago Daily Tribune archives.

20. The Luther Trant stories were the forerunners of what would later become known as scientific detective fiction. In this subgenre, the latest technologies are applied to and lauded as important components of police-detective work. The movement also included Cleveland Moffett’s Through the Wall (1909), Arthur Reeve’s The Silent Bullet (1912), and R. Austin Freeman’s John Thorndyke’s Cases (1909).


22. The collection contains nine of the original eleven stories, published in the same order without any substantive changes to the text. For this reason, and for readability, I typically quote text from the collected edition of the text in this section.

23. Hampton’s Magazine was the renamed version of Broadway Magazine begun in 1898.

24. See Bunn (1997): “In 1925 he had become a ‘consulting psychologist’—a new sort of creature who seems to combine the advisory functions of an old-time pastor and country doctor.”

25. Note that Balmer and MacHarg (in their foreword) and Luther Trant (in the text) use the same term, “the new psychology,” as Hugo Münsterberg.

26. President Hoover convened the Wickersham Commission in 1929 to review the Eighteenth Amendment to the Constitution (which prohibited the production, sale, and distribution of alcohol). The first report from the commission, which issued fourteen reports between 1931 and 1932, was entitled “Lawlessness in Law Enforcement.” This report, which stunned the public, revealed many of the unsavory interrogation tactics—including the third degree—used by police. For more information, see Leo (1992).

27. In one story, Trant uses his subject’s reactions to a map in order to locate...
throughout his tenure as editor (until he was ousted from the position due to bankruptcy in 1929) he continued to republish stories.


49. Arthur Reeve, who made a name for himself in American scientific detective fiction as the author of the John Thorndyke stories, was editorial commissioner for the magazine.

50. “Psychic evidence” refers to evidence derived from lie detection, not to parapsychology, but the use of this derogatory descriptor reveals some of the struggle to separate psychology from the parasciences.

CHAPTER 2

1. Baby parties were often put on by sororities at the universities where Marston was employed; they involved diaper-clad pledges being bound by their sisters and spanked as a hazing ritual. Marston, who was interested in theories of submission and dominance—which would later manifest themselves in his DISC personality theory—saw such parties as a significant example of the basic human tendency to enjoy submitting, particularly to powerful women. In this same vein, Marston created Wonder Woman as a role model for little girls: noting that “not even girls want to be girls so long as our feminine archetype lacks force, strength, and power” (1943, 42–43). Finally, Marston’s biography of Julius Caesar is far from standard fare, being a largely pornographic tale of domination and submission.

2. Marston’s trendy sense was correct: between 1914 and 1915, as he pursued research for his PhD in psychology, another researcher, Vittorio Benussi, published a study concerning the correlation between respiration and deception. Although Marston acknowledged Benussi as a forerunner, he also took issue with several of Benussi’s assumptions, methods, and results. Both of Marston’s initial studies were responses to Benussi’s 1914 experiments on respiration and deception. There was a particular rivalry between the two men regarding credit for the first lie detection experiments.

3. “Systolic Blood Pressure Symptoms of Deception” (1917) details William Marston’s experiments at the Harvard Psychology Laboratory performed between 1914 and 1915.

4. In his 1938 book The Lie Detector Test about its potential and pragmatic use, Marston publicly touted lie detection as a “psychological medicine” capable
10. For a history of mechanized “objectivity” and its relation to graphic technologies, see Daston and Galison (1992), particularly 115–17.

11. The pagination of Marston’s dissertation is such that each chapter begins on page 1, despite the fact that the table of contents uses continuous pagination. This quote is taken from page 3 of chapter 5: “Systolic Blood Pressure Symptoms of Deception.”

12. Later, more familiar versions of “the lie detector” or polygraph included multiple measures, including systolic blood pressure, respiration, galvanic skin conductance, and heart rate/pulse. Marston was one of the first proponents of these combination tests; however, in the experiments discussed here, he was devoted to the systolic blood pressure as a primary test.

13. There was some debate later, particularly from John Larson, as to Marston’s technique. While Marston used the Tykos sphygmomanometer, he used the palpitatory rather than the auscultatory method. The latter requires a stethoscope rather than the hands of the examiner. In his “Modification of the Marston Deception Test” (1921), John Larson argues for the auscultatory method using similar logic to that which we have seen thus far: “it is desirable to eliminate all personal factors whenever possible” (392), mechanical recordings are more objective.

14. See previous note concerning the pagination of Marston’s dissertation. This quote was taken from the “Summary” section of Marston’s dissertation, page 4.

15. For more information about the ways in which modernity fragmented, measured, and monitored the body, see my essay “Matter for Thought: The Psychon in Neurology, Psychology, and American Culture, 1927–1943” (2010); see also chapter 3 of this book and Armstrong (1998), Rabinbach (1990), and Seltzer (1992).

16. Marston would later advocate for the lie detection test to include multiple measures, including respiration, blood pressure, and heart rate; see The Lie Detector Test (1938).

17. Although he does not provide a sample of any questionnaire or materials used by the investigator, it appears that in most postcrime introspection, subjects chose from a catalog of possible feelings. Indeed, different subjects often use the same terms to describe their individual feelings. If Marston did provide a list of possible descriptors, an argument for the scripted performance of lie detection exams gains even more credence.

18. See the following by William Marston: “Systolic Blood Pressure Symptoms of Deception” (1917); “Reaction-Time Symptoms of Deception” (1920); “Psychological Possibilities in the Deception Tests” (1921a); “Sex Characteristics of Systolic Blood Pressure Behavior” (1923); “A Theory of Emotions and Affection Based upon Systolic Blood Pressure Studies” (1924); “Negative Type Reaction-Time Symptoms of Deception” (1925).

19. Fear and rage, along with pain, were initially identified by Walter Cannon in Bodily Changes in Pain, Hunger, Fear, and Rage (1915) as emotions that specifically affect blood pressure. Marston rules out pain, noting that according to Vittorio Benussi and the vivisectionists “only the diastolic pressure is
significantly altered by pain" (1917, 121); see also Bemussi (1914).

20. Marston argues in 1924 that there are two types of deception: negative and positive. His views are challenged by a contemporary, Eva Goldstein, who argues that Marston’s experimental setup was mechanical and did not necessarily get at “deception.” Marston’s response is that the negative type can be explained: the subject simply had no consciousness of deception.

21. I use the gender neutral pronoun here because Marston’s experiments did involve both women and men. Indeed, his work with women and his concepts of gender and feminism have been addressed by scholars (Bunn 1997; Rhodes 2000). Had I the space and time, I would elaborate further on Marston’s theories about gender, but suffice it to say: another book could be written about Marston and the female, femininity, and feminism.

22. For more information on the council, see Robert M. Yerkes, “Psychological Work of the National Research Council” (1923). He explains that “the National Research Council was organized in 1916 under the auspices of the National Academy of Sciences and the Engineering Foundation, primarily to place the scientific resources of the country at the command of the federal Government” (172).

23. Only after the failures of the Frye case did Marston turn away from laboratory research on the deceptive consciousness and to more general research on emotion and multiple popular venues in search of a public following. For the former, see the following by William Marston: “A Theory of Emotions and Affection Based upon Systolic Blood Pressure Studies” (1924); “Studies in Testimony” (1924–25); “Negative Type Reaction-Time Symptoms of Deception” (1925); “Motor Consciousness as a Basis for Emotion” (1927); Emotions of Normal People (1928); “Bodily Symptoms of Elementary Emotions” (1929). For the latter, see “Blondes lose out in film love test” (“Blondes” 1928); “New Facts about Shaving Revealed by Lie Detector!” (Marston 1938b); and The Lie Detector Test (1938a).

24. Marston was not the first to introduce lying to the laboratory; see Jung (1906); Wertheimer and Klein (1904); Yerkes and Berry (1909); Henke and Eddy (1909). These experiments and their relation to crime, specifically, are cited in Eva Goldstein’s (1923) experimental response to William Marston’s early work.

25. The different types of stimuli can be seen in the following experiments: refusing orders (using cards) happened at the Harvard Psychological Laboratory between 1913 and 1914; creating alibis and the suppression of truth occurred at the Harvard Psychological Laboratory in 1915; mock crimes were used in the Harvard Psychological Laboratory for the 1915 experiments as well as those at Camp Greenleaf in 1918 (published results appear in his 1921a); occlusion of information (involving actual criminal testimony) can be found in Marston’s experiments conducted in 1920 (see Marston 1921a, 566).

26. Nearly all lie detection subjects are asked to play the role of the antagonist (at one time or another) given the ways in which “norms” are generally established in lie detection experiments. In the course of an experiment or examination, another kind of norm is also established when subjects are asked to sit
signatures or digital photographs were used (2001, 250). The double valence of digital (relating to fingers and information) provides a telling connection between originary systems of biometric identification and newer, ironically disembodied versions of the same data.

7. The controversy over who discovered fingerprinting is quite complex and involves other issues: Who is granted credit for actually realizing the implications of digital marks? Who first recognized their use value? Who first created a system to manage and classify prints? Herschel’s work in India was adopted, further theorized, and used by Sir Frances Galton and Edward Henry, for example. Others were also working independently on fingerprinting: Dr. Nehemiah Grew presented work on fingerprints to the Royal Society in 1684; Johannes E. Purkenje first classified fingerprints in his 1823 thesis; Thomas Bewick included an engraving of his thumbprint in an illustrated edition of Aesop’s Fables in 1818; Henry Faulds, a Scottish physician, was the first to publish his work with fingerprints in Tokyo (his letter on the subject appeared in Nature on December 18, 1880).

8. For a history of Bertillon Anthropometry, see Cole (2001), particularly chapter 2.

9. I specifically refer here to the collection of fingerprints from bodies, not crime scenes. The retrieval of prints (partial and otherwise) from the scene of a crime often requires great skill. See J. Nickell and Fischer (1999) for a more specific explanation.

10. The most telling example of the politics of criminology and criminalistic techniques like fingerprinting comes from Havelock Ellis’s The Criminal (1890, republished 1913), a volume in which he calls for a British science of criminology. Although Ellis’s work stems largely from Cesare Lombroso’s L’Homme Criminel (1887, published in English in 1911), he argues that his own science will not seek to collapse criminal science with politics (Thomas 1999, 207). He claims that Lombroso’s theories of atavism may not be objective enough. Instead, he offers up hundreds of criminal measurements and argues for their facticity. However, as Ronald Thomas points out, more often than not, the examples used by Ellis illustrate similarities between criminals and “the lower races” or “the lower apes” (1999, 208).

11. Only after fingerprinting was proven successful in India and other colonies was the technology implemented in European criminal investigation.

12. Herschel does note that he first proposed the fingerprint as a means to identify criminals during their trials in 1877 (1916, 22–24).

13. The Bureau of Identification became the Federal Bureau of Investigation (FBI) in 1934. For a history of the rise of the FBI and J. Edgar Hoover, see Breuer (1995). For more information on the New Deal politics that led to the rise of a centralized police state (including the FBI), see Potter (1998).

14. To promote the campaign and the FBI, Hoover initiated a tour during which he spoke to various groups around the country. Although an analysis of these pamphlets is beyond the scope of this chapter, interested readers should look to the following addresses made by Hoover: “Modern Problems of Law Enforcement” (1935a); “Local Law Enforcement in Relation to National Crime” (1936b); “The Influence of Crime on the American Home” (1936a); “Patriotism
and the War Against Crime” (1936c); “Science in Law Enforcement” (1936d); “Progress in Crime Control” (1938).

15. Hoover worked in conjunction with August Vollmer, who was famous for his work to reform the police. Vollmer, who began his career in Berkeley, eventually moved to Chicago. He was, as we saw in chapter 1, involved in the development of lie detection. Indeed, as Ken Alder has argued, Vollmer was a central character in lie detection debates between his protégés, John Larson and Leonarde Keeler. For a complete bibliography of Vollmer, see Police Reform in the United States: The Era of August Vollmer, 1905–1932, by Gene E. Carte and Elaine H. Carte (1975). For Hoover’s own explanation of the modern crime lab, see “Scientific Methods of Crime Detection in the Judicial Process” (1935b).

16. Hoover’s deployment of fingerprinting continued through the second Red Scare of 1947, through the 1950s and into the 1960s with little alteration. Between the 1960s and 1970s, a second wave of police reform corresponded with the civil rights movement; see Walker (1998).

17. I should note that when Finney republished “Body Snatchers” as the novel Invasion of the Body Snatchers, he substantially revised the FBI’s role in the final scenes of the story, leaving Miles and Becky to protagonist alone in their fight against the invasion. The FBI never swoops in to rescue him from the fields of battle. The fact that the FBI reminds us of the alien’s power. If the pod-people allow the aliens to represent the indistinguishable Other (the communist, foreigner, and immigrants) who can infiltrate unnoticed, they are also representative of the unmarked colonizer. In the penultimate scene of the novel, for example, as Miles and Becky set fire to a field of alien seed-pods and watch as the invaders retreat into space, Miles figures himself (and humanity) as the potentially subjugated race, as those who would not be colonized: the aliens “could tell with certainty that this planet, this little race, would never receive them, would never yield” (Finney 1996, 214). He even repeats Churchill’s wartime speech as they ruin the pods in the field: “We shall fight them in the fields, and in the streets, we shall fight in the hills; we shall never surrender” (214). The speech, “We Shall Fight Them on the Beaches,” given on June 4, 1940, is a response to the potential German invasion of Britain during World War II. In this context, Miles’s comment resonates more closely to fears of subjugation than amalgamation.

18. Invasion of the Body Snatchers was later republished to coincide with the 1978 movie adaptation. In this later version, a few minor changes are made, along with the major change of the setting’s date: 1976.

19. I am specifically referring to the novel here because this chapter will not address the four major film adaptations of Invasion of the Body Snatchers. Ironically, the novel is often forgotten, rather than being foundational to criticism of this alien invasion narrative. Here, I want to foreground the novel and reposition Invasion of the Body Snatchers as a story about biometrics given the cultural context of J. Edgar Hoover, the FBI, and fingerprinting.

Works Cited


