

The Truth Machine

A Social History of the Lie Detector

Geoffrey C. Bunn

The Johns Hopkins University Press
Baltimore

© 2012 The Johns Hopkins University Press

All rights reserved. Published 2012

Printed in the United States of America on acid-free paper

2 4 6 8 9 7 5 3 1

The Johns Hopkins University Press

2715 North Charles Street

Baltimore, Maryland 21218-4363

www.press.jhu.edu

Library of Congress Cataloging-in-Publication Data

Bunn, G. C. (Geoffrey C.)

The truth machine : a social history of the lie detector / Geoffrey C. Bunn.

p. cm. — (Johns Hopkins studies in the history of technology)

Includes bibliographical references and index.

ISBN-13: 978-1-4214-0530-8 (hdbk. : alk. paper)

ISBN-13: 978-1-4214-0651-0 (electronic)

ISBN-10: 1-4214-0530-x (hdbk. : alk. paper)

ISBN-10: 1-4214-0651-9 (electronic)

1. Lie detectors and detection—History. 2. Lie detectors and detection—
United States—History. I. Title.

HV8078.B86 2012

363.25 4—dc23 2011044971

A catalog record for this book is available from the British Library.

*Special discounts are available for bulk purchases of this book. For more information,
please contact Special Sales at 410-516-6936 or specialsales@press.jhu.edu.*

The Johns Hopkins University Press uses environmentally friendly book materials,
including recycled text paper that is composed of at least 30 percent post-consumer waste,
whenever possible.

What therefore is truth? A mobile army of metaphors, metonymies, anthropomorphisms: in short a sum of human relations which become poetically and rhetorically intensified, metamorphosed, adorned, and after long usage seem to a nation fixed, canonic and binding; truths are illusions of which one has forgotten they *are* illusions, worn-out metaphors which have become powerless to affect the senses; coins which have their obverse effaced and now are no longer of account as coins but merely as metal.

—Friedrich Nietzsche, “On Truth and Lie in an Extra-Moral Sense” (187

It is so easy to do wrong! Everything the Devil makes runs easily. It is only God’s machinery which has friction. The lie is spontaneous;—the truth requires thought. Yet the offhand production is born with the seeds of decay in it, and its other name is “Death.” Its history is always cyclical, and returns upon itself; for the path of a lie is so tortuous that, sooner or later, it is bound to intersect its own course. Then comes discovery, humiliation, pain—retribution. The hyperbola of deception has never yet been plotted.

—Milton L. Severy, *The Mystery of June 13th* (190

CONTENTS

Introduction

Plotting the Hyperbola of Deception 1

Chapter 1

“A thieves’ quarter, a devil’s den”: The Birth of Criminal Man

Chapter 2

“A vast plain under a flaming sky”: The Emergence of Criminology

Chapter 3

“Supposing that Truth is a woman—what then?”:
The Enigma of Female Criminality

Chapter 4

“Fearful errors lurk in our nuptial couches”:
The Critique of Criminal Anthropology

Chapter 5

“To Classify and Analyze Emotional Persons”:
The Mistake of the Machines

Chapter 6

“Some of the darndest lies you ever heard”:
Who Invented the Lie Detector?

Chapter 7

“A trick of burlesque employed ... against dishonesty”:
The Quest for Euphoric Security

Chapter 8

“A bally hoo side show at the fair”:
The Spectacular Power of Expertise

Conclusion

The Hazards of the Will to Truth

Acknowledgments

Notes

Essay on Sources

Index

Plotting the Hyperbola of Deception

An increased liberalism in the definition of “fact” can have grave repercussions, while the idea that truth is concealed and even perverted by the processes that are meant to establish it makes excellent sense.

—Paul Feyerabend, *Against Method* (1978)

On January 30, 1995, not long after O.J. Simpson had released *I Want to Tell You*, the book he hoped would clear his name, the tabloid television show *Hard Copy* revealed that they had subjected the double murder suspect to a lie detector test. The former football star had recorded himself on tape, reading aloud various passages from his book: “I want to state unequivocally that I did not commit these horrible crimes.”¹ *Hard Copy* hired lie detector expert Ernie Rizzo to use a “Psychological Stress Evaluator” to subject Simpson’s voice to stress analysis. According to the show’s “Hollywood Reporter,” Diane Dimond, the test could separate “fact from fiction.” Used by the police, the military and big business, the instrument had been shown to be “95 percent accurate.” As a result of Rizzo’s analysis, he concluded that Simpson was “one hundred percent deceitful ... one hundred percent lying.”² One week after *Hard Copy*’s deception test, supermarket tabloid newspaper the *Globe* subjected the same tape recording of Simpson’s voice to “Verimetrics,” a hightech lie detector favored by police investigators.³ But this time Jack Harwood, a “Veteran investigator,” proclaimed Simpson “absolutely truthful,” noting that the “lie test shows O.J. didn’t do it!”

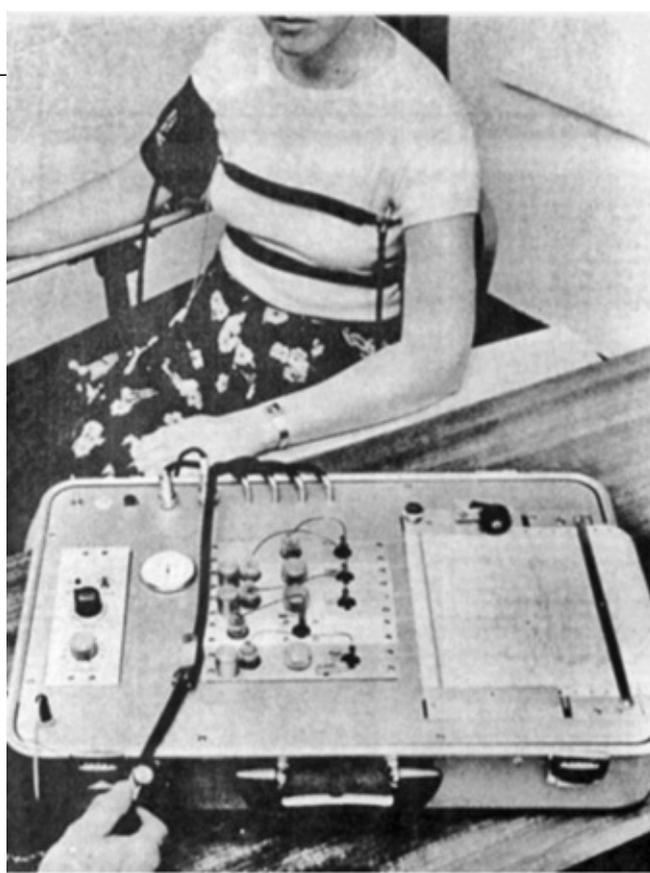
One type of lie detector, identical statements from a single suspect, and two equally emphatic yet contradictory verdicts. When Simpson said, “I would take a bullet for Nicole,” Harwood claimed, “the former football hero was being completely honest,” while according to Rizzo he was “absolutely lying.” How can two experts both claim scientific validity for their respective instruments, analyze the same material, and reach completely different conclusions?

Early histories of the lie detector celebrated the many famous and infamous cases in which it had been used during the twentieth century.⁴ More recent studies have either challenged the instrument’s scientific status, or questioned its legitimacy on grounds that this practice constitutes an assault on civil liberties.⁵ David Lykken was one of the first psychologists to dispute claims about the machine, arguing, “the lie detector has no more place in the courts or in business than a psychic or tarot cards.” According to Lykken, by 1980 more than one million lie detector tests were performed annually in the United States.⁷

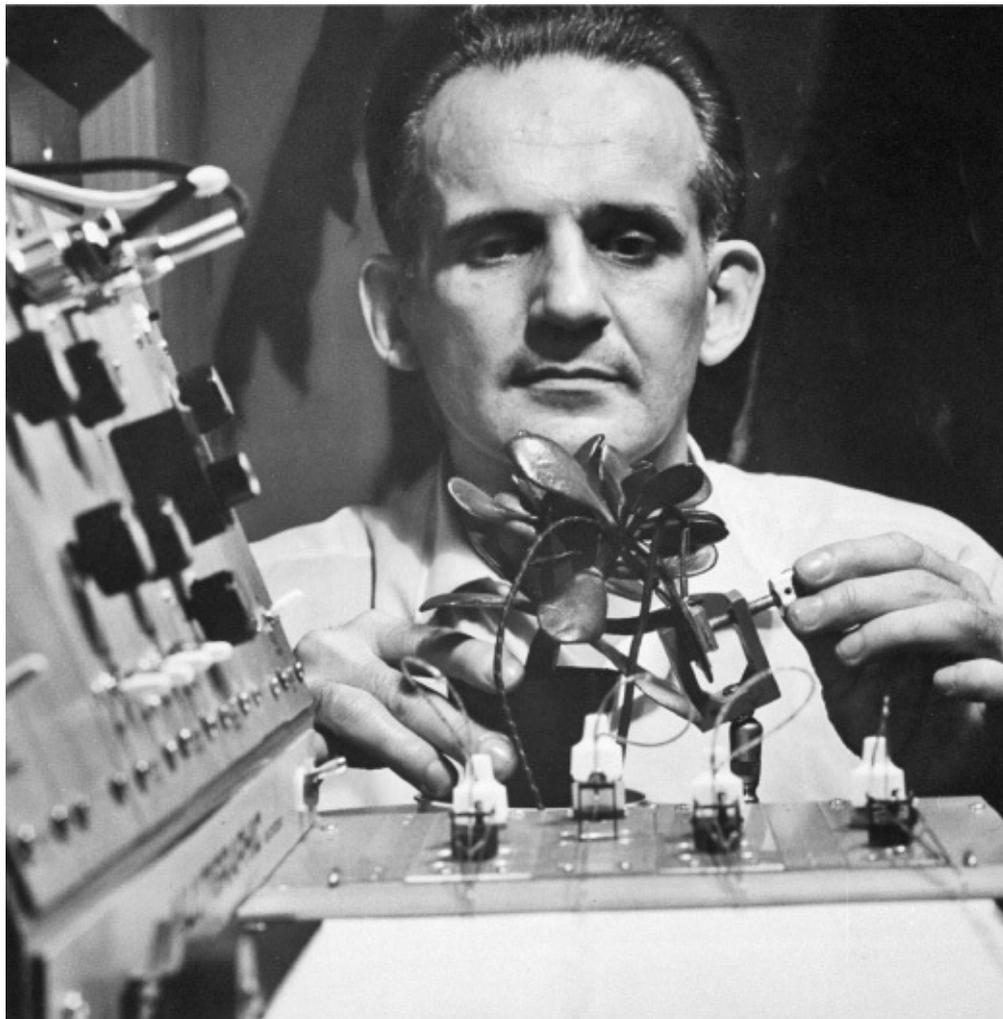
The classic polygraph examination involves simultaneously measuring a suspect’s blood pressure, breathing rate, and electrical skin conductance as a series of questions that require yes or no answers are asked. But the person can also be subjected to more covert scrutiny: “behavior symptoms” are

observed before and after the test is performed; cameras behind two-way mirrors may record gesture and nuances of expression. Talkativeness and enthusiasm may be noted, to be incorporated into the examiner's final assessment of truth or deception. It seems that no lie detector examination takes place under "objective" scientific conditions divorced from the wider social context. And symbols lend insight into the values that underscore the lie detector test. What better emblem of masculine professional power than the *briefcase*, that mandatory accessory of every polygrapher? From the black briefcase comes the *chart*, at once a graphic calculus of guilt and a sacred scroll inscribed with the truth. Consider also the *chair*, a seat for the sovereign subject with whom no eye contact must be made, but also a constraining device, reminiscent of the electric chair.

The demarcation between the supposed rationality of the male polygrapher and the supposed apparent emotionality of a female subject is a salient feature of lie detector discourse. The instrument was designed to reveal the supposed invisible pathologies of the female body, an approach with a long precedent in criminology, a history that this book examines. For the science of "pupillometrics"—the attempt to detect dishonesty by recording changes in pupil size—the gaze of the subject becomes the important characteristic of the deception test. In a recapitulation of criminal anthropology's fruitless search for visible stigmata of criminality, almost every body part has been subjected to testing: the hand, arm, skin, lungs, heart, muscles, voice, stomach, and brain have all been examined at some point in the history of this technology. Sometimes it has not just been the human body that has attracted pioneers. In the late 1960s, Cleve Backster achieved international notoriety for attaching his polygraph to a philodendron plant, claiming it could detect "apprehension, fear, pleasure, and relief." A former Central Intelligence Agency interrogator and director of the Leonarde Keeler Polygraph Institute of Chicago, it was Backster who introduced the "Backster Zone Comparison Polygraph," which became the standard polygraph model used at the U.S. Army's Polygraph School. By 1969 it seems he had single-handedly created the urban legend that plants had emotions: "We have found this same phenomenon in the amoeba, the paramecium, and other single-cell organisms, in fact, in every kind of cell we have tested: fresh fruits and vegetables, *mold* cultures, yeasts, scrapings from the roof of the mouth of a human, blood samples, even spermatozoa."⁹



The traditional polygraph measures skin conductance, breathing rate, and blood pressure. The subject also undergoes intense visual scrutiny.



Cleve Backster, a polygraph expert for the CIA, attempts to detect deception in a plant. Photo by Henry Groskinsky, [Life.com](https://www.life.com) images.

Between the 1935 Lindbergh “crime of the century” and the 1995 O.J. Simpson “trial of the century,” the notion of the lie detector became deeply embedded in the North American psyche. Despite constant criticism, satirical attacks, government prohibition, Papal condemnation, and a widespread suspicion that it “can be beaten,” the use of the lie detector persists. High-profile cases in which the participants took polygraph tests include cases involving Anita Hill and Clarence Thomas, the spy Aldrich Ames, and the Oklahoma City and Atlanta Olympics bombings. Isuzu trucks, Pepsi Cola, and Snapple juice are some of the products that were advertised with the help of the “truth machine.” It appeared in countless movies and television shows. In one *Star Trek* episode, Captain Kirk made Scotty take a lie detector test to prove he was not a serial murderer of women. An episode of the 1990s hit TV cop show *Homicide* featured “the electro-magnetic neutron test” which, unknown to the suspect, issued photocopies of a palm print upon which the words “True” or “False” had been printed beforehand. Many such depictions, of course, portray lie detection as a rational and technical science by contrasting it with “pseudoscience.” But use of the machine has constantly transgressed the boundary that supposedly demarcates factual science from sheer fantasy.

The use of the lie detector to manage contradiction is a key theme of this book, one that previous histories have not highlighted. The principle ambition here is to investigate how the lie detector came to be constructed as a technology of truth.¹⁰ Why do these machines continue to feature in the dream of those responsible for maintaining law and order? Recent scholarship has detailed the biographies and motivations of the major actors in the historical drama.¹¹ My aim is to push the story back in time into the obscure origins of criminology itself. What interests me is why and how the lie detector was finally “invented” in the United States, even though all the important technological innovations had been developed by European criminologists prior to the start of the twentieth century. My argument is that the machine came about as the result of a sustained dialogue between science—in this case criminology—and the wider culture. Literary, newspaper, and movie depictions did not misinterpret, distort, or corrupt the concept of the lie detector; in fact they played a vital role in creating it.

CHAPTER 1

“A thieves’ quarter, a devil’s den” The Birth of Criminal Man

There is a thieves’ quarter, a devil’s den, for these city Arabs. There is their Alsatia; in the midst of foul air and filthy lairs they associate and propagate a criminal population. They degenerate into a set of demi-civilized savages, who in hordes prey upon society ... a race as fierce as those who followed Attila ... These communities of crime, we know, have no respect for the laws of marriage—are regardless of the rules of consanguinity; and, only connecting themselves with those of their own nature and habits, they must beget a depraved and criminal class hereditarily disposed to crime. Their moral disease comes *ab ovo*.

—J. Bruce Thomson (187

For much of the last two millennia in the West, the Christian tradition considered the miscreant’s deeds to be manifestations of universal sin. Human weaknesses such as depravity, temptation, lust, and avarice were regularly invoked to account for conduct that compromised the moral order. Criminality was explained by appealing to supernatural forces such as the actions of mischievous demons or the vagaries of fate. People in early modern England believed that God exposed and punished the crime of murder either through direct intervention or by acting through temporal agents. The supreme power of divine providence guaranteed that crimes of blood would be punished, despite the difficulties associated with detection and proof.

In 1591, a Kent coroner ordered the murderers of four children to call out their names, whereupon the victims’ pale bodies, “white like unto soaked flesh laid in water, sodainly received their former coulour of bloude, and had such a lively countenance flushing in theyre faces, as if they had beene living creatures lying aslepe, which in deed blushed on the murtherers when they wanted grace to blush and bee ashamed of theyre owne wickednesse.”² In the 1650s, Lady Purbeck and a maidservant were both instructed to lay their hands on the corpse of an infant discovered in a privy. The maidservant immediately confessed to the murder when the body started bleeding.³ In 1725, London magistrates ordered that a human head found on the shore of the Thames at Westminster be placed on a pole in a nearby churchyard, directing church officials to arrest anyone “who might discover signs of guilt on the sight of it.”⁴ Locals recognized the head as that of John Hayes, whose wife, the magistrates quickly discovered, had recently taken two lovers. Convicted of the murder, Catherine Hayes was subsequently burned alive. As these examples demonstrate, in the early modern period, corpse touching, cruentation rituals,⁵ and violent public executions appeared to materialize divine intelligence; they produced confessions and acted as powerful deterrents against crime.

Such procedures were products of mental frameworks and ways of life very different from those of our own era.⁶ Modern ideas about criminality originated in the Enlightenment of the eighteenth century. Cesare Beccaria in Italy, Jeremy Bentham and John Howard in Britain, Benjamin Rush in America, and Paul Johann Anselm von Feuerbach in Bavaria pursued rational inquiries into the

causes of crime and prison reform, pioneering a secular, modernist criminological discourse.⁷ Rush's *The Influence of Physical Causes upon the Moral Faculty* (1786) was one of the first scientific attempts to conceptualize crime and insanity in terms other than sin.⁸ Bentham described his innovative model prison, "Panopticon" of 1785, as "a new mode of obtaining power of mind over mind, in a quantity hitherto without example." The ambition of what later became known as the "classical school" was that "government by rule" would replace "unregulated discretion," in the words of one magistrate reformer.⁹ Such beliefs were based on a rationalist conception of the calculating subject, a model of the individual whose "psychological" motivations were irrelevant to the administration of justice. Under this framework, research into the biological or environmental causes of crime would only undermine the liberal conviction that individuals were autonomous agents in full control of their own actions.¹⁰

The general thrust of penal policy during the nineteenth century was humanist. The number of hangings declined in England from the 1830s, and by the 1860s all the traditional Georgian penalties had been abandoned, including the pillory and whipping post, the convict ship, and the public execution.¹¹ Public violence was increasingly thought to pander to the lowest human instincts and militate against improving the conduct of the population. Punitive spectacles were gradually replaced by measured disciplinary techniques. The prison was rejuvenated as a space for moral discipline, "a training ground for, and a social representation of, the overcoming of immediate impulses and passions and the reconstruction of character."¹² Punishment strategies that had once broken the body transmuted into those that promised to repair the mind. These reforms brought the hitherto indistinct image of the criminal into sharp focus.

At the start of the nineteenth century, the criminal had been little more than "a pale phantom, used to adjust the penalty determined by the judge for the crime."¹³ By its end he had eclipsed the crime and had become the focus of criminological discourse. A diverse array of intellectual, scientific, practical, social, and political developments combined to create an empirical discipline devoted to systematically analyzing the causes of criminality.¹⁴ New theories of human nature conceptualized the mind as a natural entity, particularly in the wake of evolutionary theory.¹⁵ The reconceptualization of human agency in the language of naturalism made it possible to think about criminality less in terms of moral failures of the will and more in terms of the mind's constitutional and environmental influences. Scientific explanation began to shift "from acts to contexts, from the conscious human actor to the surrounding circumstances."¹⁶ Geniuses, criminals, and the insane populated the new disciplines—the three types of exceptional people that had inaugurated the anthropological study of human beings in the late eighteenth century.¹⁷ The "insane criminal genius"—that diabolical combination of all three foundational categories of the human sciences—inhabited the pages of learned journals and was thought to stalk the streets of the metropolis.

Another influence on the development of criminology was the emergence of statistics. Parliamentary committees charged with investigating rising crime rates required systematic numeric data about crime. The French government started publishing official crime figures in 1827. In Britain the Statistical Department of the Board of Trade was founded in 1832, the Manchester Statistical Society the following year. In 1834 the Statistical Society of London began to use judicial statistics and census data to chart the distribution and demography of crime and to correlate crime rates with other social indices.¹⁸ Conclusions about the complex causes of criminal conduct could be framed in a new way.¹⁹ The Belgian statistician Adolphe Quetelet repeatedly cited crime rates as evidence for his claim "that free-will exercises itself within definite limits."²⁰ "Sad condition of the human species!"

he exclaimed in 1835. “We are able to enumerate in advance how many individuals will stain their hands with the blood of their fellows, how many will be forgers, how many prisoners, much like one can enumerate in advance the births and deaths that must take place.” Society contained within itself the seeds of all the crimes that were to be committed, he asserted, as well as the conditions necessary for their nurturance: “It is society that, in some way, prepares these crimes, and the criminal is only the instrument that executes them.”²¹ Quetelet was not proposing a social account of crime. Under the influence of phrenology, the “reluctant determinist” statistician accepted that “unhealthy morality was manifest in biological defects and that those with such defects had high criminal propensities.”²² “I am far from concluding that man can do nothing for his amelioration,” he wrote in 1842. “He possesses a moral strength capable of modifying the laws which concern him.”²³ Nevertheless, statistics revealed the relative stability and predictability of crime rates and also that age and gender were the two most significant factors determining a person’s propensity for criminality.

Public health also contributed to criminology’s development. Contemporary observers who noted the unprecedented growth of cities linked pathology with morality by deploying metaphors of disease, sewage, pollution, and contamination. An “avalanche of numbers”²⁴ enumerated the slums and their inhabitants: the laboring classes, the idle, and the “incorrigibly lazy.” In 1856 the great Victorian urban investigator and social critic Henry Mayhew divided society into civilized citizens and nomadic vagabonds. His experiences interviewing beggars, street entertainers, market traders, and prostitutes led him to the “melancholy” conclusion “that there is a large class, so to speak, who belong to a criminal race, living in particular districts of society... . These people have bred, until at last you have persons who come into the world as criminals, and go out as criminals, and they know nothing else.” Mayhew claimed that society was composed of two races, “the wanderers and the settlers.” Among the former he counted pickpockets, beggars, prostitutes, street performers, sailors, and such like. This group was characterized by “a greater development of the animal than of the intellectual or moral nature of man ... distinguished for their high cheek-bones and protruding jaws.”²⁶ He considered this group’s “habitual indisposition to labour” as the most important cause of crime.

It was a simple step to consider the “dangerous classes” in terms of their deterioration to an earlier stage of biological development, most famously in B. A. Morel’s influential *Treatise on the Physical, Intellectual and Moral Degeneration of the Human Race* of 1857. An extended allegory of the Fall, Morel explained how God’s original creation could have become corrupted over countless generations. Included in his theory was a Lamarckian account of the origins of stigmata—degenerated physiological and anatomical characteristics: “When under any kind of noxious influences an organism becomes debilitated, its successors will not resemble the healthy, normal type of the species with capacities for development, but will form a new sub-species, which, like all others, possesses the capacity of transmitting to its offspring, in a continuously increasing degree, its peculiarities, these being morbid deviations from the normal form—gaps in development, malformations and infirmities.”²⁷ Morel’s theory facilitated the entry of “moral insanity” into criminological discourse, a term that was soon part of the language of mental disease.²⁸ Initially coined to label offenders whose behavior appeared mad while their minds remained sane, moral insanity was transformed into a standard, if contested, psychiatric term by James Prichard’s *A Treatise on Insanity* (1835).²⁹ Morally insane defendants should be sent to the asylum, not the gallows, Prichard argued. Thought to affect the emotions and the will rather than the intellect, moral insanity was a catalyst for psychiatry’s redefinition of madness as loss of control.

As the nineteenth century progressed, “characterizations of deviance and crime moved from moral to natural categories ... [appearing] more deeply rooted within the offender’s nature than in the moral

consciousness or the rational intellect.”³⁰ By the early twentieth century, the explanation of crime in terms of moral weakness had been replaced by scientific, bureaucratic, and literary discourses that privileged naturalistic explanations.³¹ Yet the emphasis on naturalistic causality led to an increase, not a decrease, in the opportunities for governance—the targeting of the criminal’s body and mind by mechanisms of regulation and control.³²

An important stimulus for criminology’s concept of inherent criminality was phrenology, the art of reading character from the contours of the skull.³³ Emphasizing observation and reasoning about empirical facts rather than divine revelation, it brought about one of the most radical reorientations of ideas about crime and punishment in the Western tradition.³⁴ As one leading exponent put it in 1836, the science “explains and proves the fact of some individuals being naturally more prone to crime than others.”³⁵ A popular science, phrenology was also a technology of self-fashioning and personal transformation.³⁶ Although only a few phrenological works were exclusively devoted to crime and punishment,³⁷ phrenological periodicals regularly featured extensive discussions of case studies of notorious thieves and murderers. Most phrenological practitioners were interested in the criminal. Phrenology’s founder, Franz Josef Gall, left a collection of skulls and casts of heads and brains consisting of “103 famous men, 69 criminals, 67 mental patients, 35 pathological cases and 25 exotic (non-European races).”³⁸ The anonymous author of *The Philosophy of Phrenology Simplified* (1838) discussed the skulls of two infamous villains: one of the grave robber and murderer William Hare (of “Burke and Hare” fame), whose “acts were such as to fill every well constituted mind with horror and disgust”; the other of Pope Alexander VI, a man whose “life was a series of crimes” and whose character was “grossly bestial, without a redeeming amiable quality.”³⁹ Of two women in confinement, the author explained, one imprisoned for stealing, the other for concealing the stolen articles, “the former will have the organ of Acquisitiveness larger ... while the second will have the organ of Secretiveness much developed.” The “chief of a robber band” would have enlarged organs of Self-Esteem and Determinateness whereas the “habitual vagabond thief” could be distinguished from “a coiner of false money by his having, besides the organ of Acquisitiveness, the organ of Locality larger, and smaller organs of Cautiousness and Constructiveness.”⁴⁰ Thomas Stone, President of the Royal Medical Society, presented data to suggest that Burke’s organ of Benevolence was “both *absolutely* and *relatively* above the average size of the same organ” found among a group of thirty-seven law-abiding citizens. Stone considered the claim made by “some of the most distinguished of the Edinburgh Phrenologists ... that ... Burke was really a benevolent man” patently absurd: “to argue the point seriously would be to indulge in one of the severest satires that can be conceived, on the incongruity of the phrenological doctrines.”⁴¹

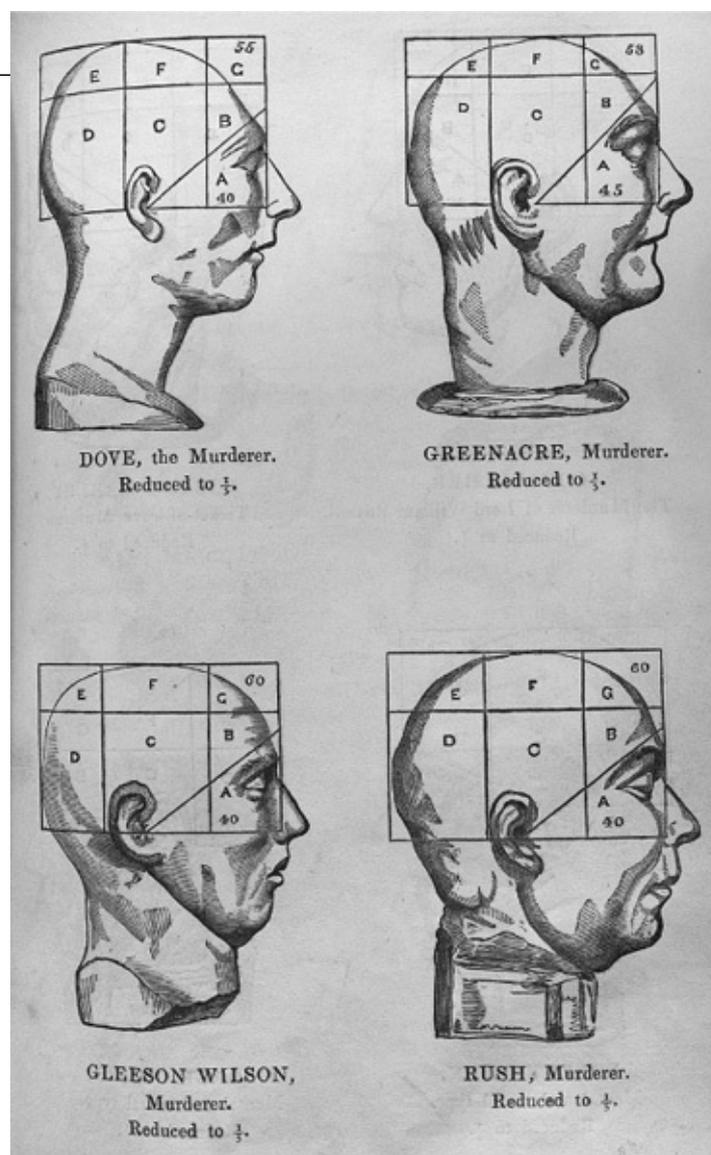
In principle many of the phrenological faculties or “organs,” either enlarged or diminished, were believed to predispose an individual toward criminal acts. A robber of churches, for example, would likely be thought to have a smaller organ of Veneration compared to a humble purse-snatcher. Veneration was considered one of two mental organs that were damaged when an iron rod pierced Phineas Gage’s brain in a dreadful railway accident in 1848.⁴² The injured laborer’s subsequent descent into crime was explained in phrenological terms. Quiet and respectful before the injury, after he recovered Gage became “gross, profane, coarse, and vulgar... . The iron rod passed through the regions of benevolence and veneration, which left these organs without influence in his character, hence his profanity, and want of respect and kindness; giving the animal propensities absolute control in his character.”⁴³

Gall proposed that the faculties of greed, self-defense, and the “carnivorous instinct” could lead to

theft, aggression, and murder respectively.⁴⁴ One organ was thought to be especially relevant to the discussion of criminality: Destructiveness, the faculty that Gall called “the organ of Murder.”⁴⁵ One of the “affective propensities,” a developed organ of Destructiveness could apparently be found among enthusiasts of hunting and shooting, and “those fond of attending executions, cock-fighting, and such amusements as lead to the severe punishment or probable death of animals.”⁴⁶ George Combe, whose *Constitution of Man* (1828) did much to popularize the science, suggested that the faculty produced “the impulse, attended with desire to destroy in general.”⁴⁷ Conspicuous “in the heads of cool and deliberate murderers, and in persons delighting in cruelty,” it was also evidently enlarged among satirists, especially those authors “who write cuttingly, with a view to lacerate the feelings of their opponents.”⁴⁸ Phrenology’s flexible explanatory system was part of its great appeal.

The work of the Liverpool phrenologist Frederick Bridges illustrates many of the science’s assumptions and values—not to mention its popularity. In his *Criminals, Crimes, and Their Governing Laws, as Demonstrated by the Sciences of Physiology and Mental Geometry* (1860), Bridges protested that the topic had “hitherto, been treated by the fallacious methods of scholastic metaphysics.” This error “rendered it impossible to deduce any sound practical system of treatment of this greatly mistaken class of unfortunate beings.”⁴⁹ Basing his ideas instead “upon the order of nature,” Bridges argued that a symmetrical balancing of propensities was necessary for mental harmony and “moral self-government.” Were a person’s animal propensities and instincts to preponderate over their moral and intellectual faculties, violence and criminality would ensue. “A very large head,” wrote Bridges, “where the organism is badly proportioned is a sure sign of a weak character.”⁵⁰ Bridges invented a “Phreno-physiometer” to assess the extent of any disequilibrium, an instrument that measured the angle subtended by a line drawn from the opening of the ear to the eyebrow and the horizontal. The angle, which he called the “basilar phreno-metrical,” allowed Bridges to infer the class a criminal belonged to, “whether it be that of the murderer, the freebooter, the petty thief, the swindler, or the mental and moral class.” Bridges hoped his scheme would be of great practical importance in education and the treatment of criminals.⁵¹

Bridges claimed to have discovered a natural system for classifying criminals. In murderers the angle was thought to be around 40°, in the law-abiding it was a mere 25°. Too small an angle would produce a “tame and useless” person. Bridges predicted that a parcel boy—whose basilar phreno-metrical he measured to be 38°—would go on to “commit some most diabolical outrage.” The boy later set fire to a small child. He also recounted the execution of a certain “Dove of York,” who had been convicted of poisoning his wife. Having measured the executed man’s basilar phreno-metrical to be 40°, Bridges concluded, “the reflective faculties and moral feelings of the culprit were so small that he was rendered idiotic.” “The type of his head is that of a low, vicious, partially mental and moral idiot, who ought not to have been allowed personal liberty.”⁵² The configuration of his brain, furthermore, did “not range much higher than that of the black monkey.”⁵³ The result was that in Bridges’ opinion the execution had been an illegitimate “legal murder.”



The “basilar phreno-metrical angle” allowed Frederick Bridges to determine which criminal class a person belonged to, “whether it be that of the murderer, the freebooter, the petty thief, the swindler.” Frederick Bridges, *Criminals, Crimes, and Their Governing Laws, as Demonstrated by the Sciences of Physiology and Mental Geometry* (London: George, Philip and Son, 1860).

According to George Combe, because a single mental faculty could become diseased “moral patients ... should not be punished, but restrained, and employed in useful labour during life, with as much liberty as they can enjoy without abusing it.”⁵⁴ Phrenologists also argued against debilitating punishments such as the whip, treadmill, and solitary confinement. They favored prison reform and opposed the death penalty on the grounds that it brutalized onlookers. Some also lobbied for an end to transportation to the colonies, a measure they regarded as devoid of reformatory value.⁵⁵ The origin of phrenology’s reformist agenda lay in its conviction that the human mind had a certain inherent plasticity and could be improved with the appropriate techniques.⁵⁶ The notion that the faculties could be changed accounts for the science’s enormous appeal among artisans and the aspirational classes.⁵⁷ This ethic provided middle-class reformers “with exactly the science they needed to fight their jurisprudential and penological crusades.”⁵⁸ Phrenologists were active in a wide range of reformist projects such as the slavery abolition movement, temperance movement, and public health campaigns. The science, thus, played an important role in the reform of criminal jurisprudence, opposing retribution and deterrence in favor of reformation.⁵⁹

In Britain, phrenology was but one project among many—such as vegetarianism and sexual purity

—that sought to assemble character in alignment with the values of duty, citizenship, integrity, and, above all, self help.⁶⁰ Character was not fixed by nature, but was considered to be malleable and susceptible to moral training. For early Victorians, the ambition to build character permeated every field of understanding of human nature, society, and public policymaking.⁶¹ Because it resulted from defective self-management, crime could be treated by developing the offender's psychological capabilities. By the 1860s, the law was being used with increasing consistency as an instrument for developing character and self discipline. The effect of this "civilizing process" was to center the criminal justice system on the ideal of the self-restrained responsible individual.⁶²

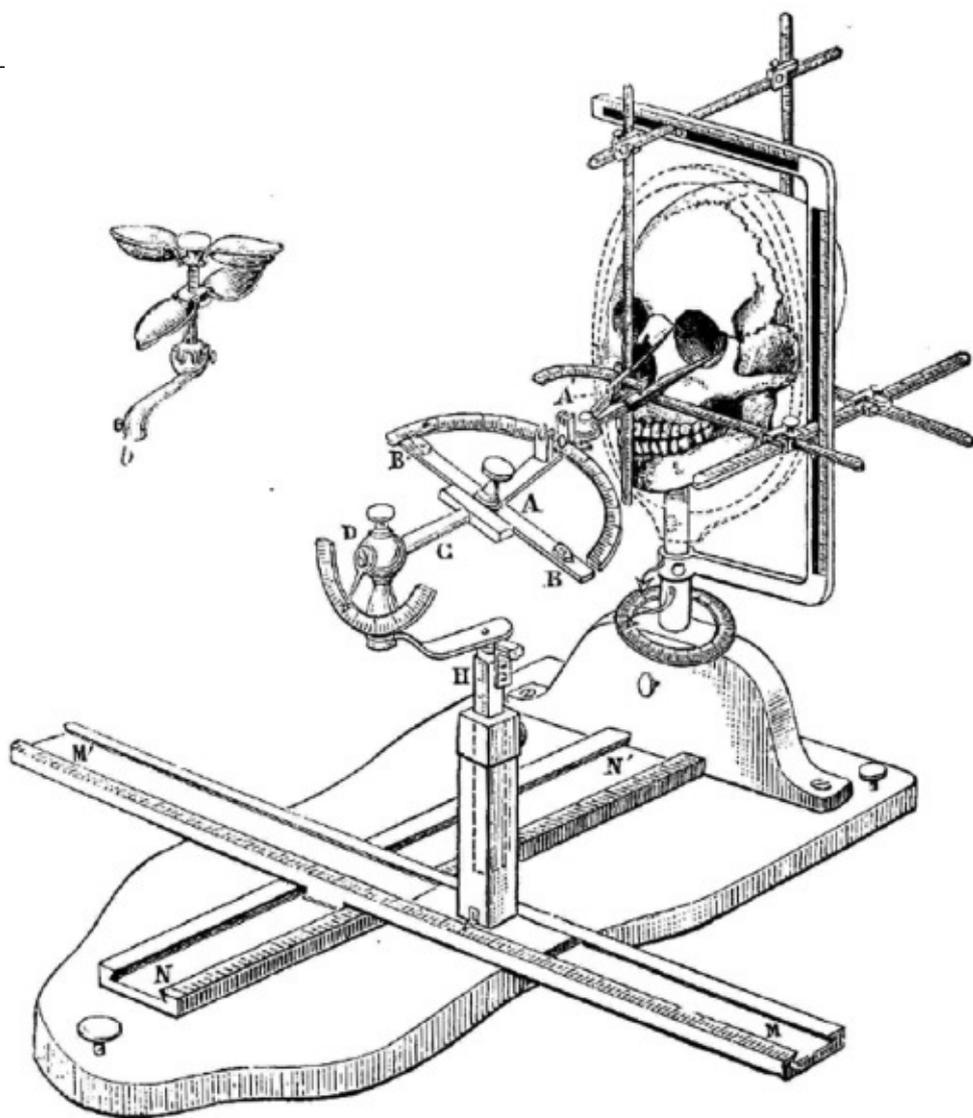
In his 1869 defense of phrenology, the Coventry philanthropist and "phreno-socialist" Charles Bray reported that the science had influenced at least one senior police officer: "Our most respectable and highly intelligent superintendent of police I found had long been a phrenologist without knowing it. In choosing his men he said he rejected small heads, and chose overhanging foreheads and high heads, as far removed as possible from the criminal type, with which he seemed to be perfectly familiar."⁶³ Bray approved of this method of selection for the law-abiding but lamented its neglect elsewhere. He reported that as early as 1836 Sir G. S. Mackenzie had unsuccessfully advocated the use of phrenology in the classification of criminals. Mackenzie had petitioned Lord Glenelg, then Secretary to the Colonies: "At present," [Mackenzie] said, "they are shipped off, and distributed to the settlers, without the least regard to their character or history." "There ought," he said, "to be an officer qualified to investigate the history of convicts, and to select them on phrenological principles. That such principles are the only secure grounds on which the treatment of convicts can be founded; proof may be demanded, and it is ready for production."⁶⁴ "Of course," Bray complained, "the prayer of Sir George Mackenzie's petition could not be granted. What would all the parsons have said to the doctrine, that the 'differences in moral character are now ascertained to be the effects of difference in organisation!'"⁶⁵

Usually associated with liberal politics, in the hands of Charles Bray and Joshua Toulmin Smith, phrenology could also be used to support radical causes.⁶⁶ But a naturalistic approach to human character could be as easily deployed to serve reactionary ends. To a considerable degree criminology was based on the idea that because the criminals' mind exhibited inherent constitutional flaws it was necessary to adopt a vigilant attitude toward their governance. At the 1869 meeting of the British Association, Dr. G. Wilson read a paper, "The Moral Imbecility of Habitual Criminals as Exemplified by Cranial Measurement." Having found that the average size of the heads of 464 criminals was less than that of the ordinary population, Wilson concluded "cranial deficiency is associated with real physical deterioration."⁶⁷ A few years later, in the Pavilion of Anthropological Sciences at the Universal Exhibition, a French Professor of Medical Geography claimed to have located a specific type of human being in his collection of thirty-six murderers' skulls. As Girard de Rialle explained to readers of *The Journal of the Anthropological Institute of Great Britain and Ireland*, M. Bordier "was struck by the peculiar formation of these skulls, which all showed characteristics of atavism, and reminded him of prehistoric types. His examination led him to the conclusion that the criminal man is an anachronism, a savage in civilized country, and he compares him to those restive animals which eventually appear in our tame species."⁶⁸ Of the thirty-six skulls, only three were neither abnormal nor pathological. Bordier disagreed with British psychiatrist Henry Maudsley that the criminals represented "intermediate types between men sane and insane." He argued that had they been submitted "to a right cerebral orthopedy they would not have been guilty of such crimes."⁶⁹

In 1870, Dr. J. Bruce Thomson, Resident Surgeon of the General Prison for Scotland at Perth,

concluded that criminals formed “a variety of the human family quite distinct from civil and social men.” Personal experience of criminals over many years had convinced him that “in by far the—greatest proportion of offences *Crime is Hereditary*.”⁷⁰ Thomson noted that having visited the great prisons of England, Ireland, and Scotland, “the authorities, governors, chaplains, surgeons, warders, concur in stating that prisoners, as a class, are of mean and defective intellect, generally stupid, and many of them weak minded and imbecile.”⁷¹ The criminal class was thought to possess “a low type of physique, indicating a deteriorated character which gives a family likeness to them all.” Thomson agreed with “an accomplished writer” that those born into crime were “as distinctly marked off from the honest industrial operative as ‘black-faced sheep are from the Cheviot breed.’” Crime was nothing less than “a moral disease of a chronic and congenital nature, intractable in the extreme, because transmitted from generation to generation.” Thomson quoted a Hebrew proverb that had a Lamarckian echo: “The fathers have eaten sour grapes, and the teeth of the children are set on edge.”⁷²

Fishermen, according to Thomson, thanks to their immobile habits, “intermarry among themselves and preserve distinct physical and mental characteristics unchanged for centuries.” Miners, “who from generation to generation pursue the same calling—form a colony by themselves, and, being the latest of all the industrial classes to emerge from serfdom, are quite a marked variety of men and women.” Whereas the “common thief, or robber, or garrotter” possessed “a set of coarse, angular, clumsy, stupid set of features and dirty complexion,” clerks, railway officials, and “decent” industrial operatives could be distinguished by their “better physical appearance.”⁷⁴ Thomson’s argument rests on the assumption that criminality ran in families and suggested that the “evil propensities” of one family of five criminals seemed “to have been inherited from the mother; the mother also being a poor silly creature.”⁷⁵ Thomson concluded that crime was “so nearly allied to insanity as to be chiefly a psychological study.”⁷⁶



“A savage in a civilized country.” Carlo Gaudenzi’s instrument for measuring the contours of the skull (1892). Cesare Lombroso, *Les applications de l’anthropologie criminelle* (Paris: Félix Alcan, 1892).

The prison surgeon’s zealous diatribe was a link between Mayhew’s vivid descriptors of a criminal underclass and Cesare Lombroso’s biological typology of the born criminal. While Lombroso was undertaking his celebrated study of Giuseppe Villella’s anomalous skull—the event that produced “the totem, the fetish of criminal anthropology” according to Lombroso himself⁷⁷—Thomson was arguing that crime was “bred in the bone” and noting “the ugliness and deformities of criminals, their under size and weight, and other evidences of degeneration.” “On the border-land of Lunacy lie the criminal populations,” he suggested.⁷⁸ The criminal class was marked by peculiar hereditary physical and mental characteristics that were allied to disorders of the mind. This class had a “*locale* and a community of their own” in the cities: “The greatest number are thieves, Ishmaelites, whose hand is against every civilized man. There is a thieves’ quarter, a devil’s den, for these city Arabs.” Born into crime, “as well as reared, nurtured, and instructed in it,” their criminal habits became “a new force, a second nature, superinduced upon their original moral depravity.”⁷⁹ Invoking a medical metaphor, Thomson claimed that crime was “incurable ... hereditary in the criminal class” and transmitted “like other hereditary maladies.”⁸⁰ Thomson called for transportation to the colonies, the breaking up of criminal communities, and lengthy sentences for habitual criminals. He concluded on a melancholy note: “The criminal hereditary *caste* and character, if changeable, must be changed slowly, and how to do it must be to sociologists and philanthropists always a *questio vexata*, one of the most difficult state problems.”⁸¹

The project of maintaining the boundary between savagery and civilization—a project shared by ethnographers and social analysts alike—remained a continuing source of unease for many Victorian commentators on crime.⁸² Despite their belief in the malleability of character, even the phrenologists argued that a small number of “irredeemables” were beyond recovery due to deficient intellectual organs. It was certain, Henry Maudsley asserted, “that lunatics and criminals are as much manufactured articles as are steam engines and calico-printing machines, only the processes of the organic manufactory are so complex that we are not able to follow them.”⁸³ Anyone who had studied the “step-children of nature”⁸⁴ recognized them to be “a distinct criminal class of beings, who herd together in our large cities in a thieves’ quarter, giving themselves up to intemperance, rioting in debauchery, without regard to marriage ties or the bars of consanguinity, and propagating a criminal population of degenerate beings.” It was “a matter of observation,” Maudsley continued, “that this criminal class constitutes a degenerate or morbid variety of mankind, marked by peculiar low physical and mental characteristics. . . . An experienced detective officer or prison official could pick them out from any promiscuous assembly at church or market.”⁸⁵ “There is a destiny made for a man by his ancestors,” he wrote, “and no-one can elude, were he able to attempt it, the tyranny of his organization.”⁸⁶

Phrenology’s radical faith in the malleability of human character helped to reorient criminal jurisprudence away from retribution and deterrence toward more systematic, proactive reformist principles. Its challenge to existing notions of criminal responsibility encouraged new ideas such as rehabilitation and reform, the proposal that the sentence must fit the criminal, and the concept of “criminal insanity.” Phrenology also inspired prison administrators to conceive of penology as a science that might professionalize prison management.⁸⁷ By explaining criminality in terms of the mental faculties, phrenology promoted the idea that people varied in their propensity to offend. In endorsing the concept of crime-as-disease it profoundly influenced later approaches to criminality—such as those formulated by physicians and psychiatrists—that foregrounded degenerationist notions.⁸⁸ But above all, phrenology was important to the emergence of criminology, as it played a fundamental role in creating criminology’s central figure of the born criminal type. By the 1870s, as empirical criminology was beginning to emerge, the idea of the born criminal had become an item of faith across a variety of disciplines. Cesare Lombroso—the man whom history records as the “father of criminology”—was far from unusual in insisting that the criminal was a special type of degenerate human being. Nevertheless, the energy that he devoted to studying and promoting the concept of “L’uomo delinquente” was remarkable.

One day, in 1911, in Mantellate jail in Italy, a twenty-eight-year-old inmate who was serving a two-year sentence for wife beating was summoned from his cell.⁸⁹ The peasant’s obligation that day was to function as a case study for a class of police administrators. Professor Salvatore Ottolenghi examined the man, carefully measured his body parts, and pointed out certain features of his “antieurhythmic face.” He also drew attention to the prisoner’s receding forehead, his overly developed cheeks, and protruding bones. Ottolenghi further noted the inmate’s scars, calluses, and lack of tattoos. He then questioned the prisoner about his childhood, family, health, moral habits, and criminal record. The professor concluded that the offender was “un tipo inferiore,” a coarse criminal specimen. Here was a dangerous individual, the professor told his students, a man capable of committing violent crimes when under the influence of alcohol and when caught in a “morbid epileptic rage.”

Ottolenghi was a dedicated follower of the man he referred to as “that titanic figure, Cesare Lombroso.”⁹⁰ It had long been Lombroso’s ambition to transform policing into “a scientific

instrument ... which employs photography, the telegraph, notices in newspapers, and above all knowledge of criminal man.”⁹¹ But it was Ottolenghi who did most to bring Lombroso’s vision for “scientific police that knows, with mathematical exactness, the physical characteristics of criminals” to fruition.⁹² An intermediate-level bureaucrat, Ottolenghi transformed his mentor’s unsystematic ideas into a new philosophy of policing and successfully introduced positivist criminology into government administration. The base for his operations was the School for Scientific Policing that he had established in Rome in 1902. He began publishing the *Bulletin of the School of Scientific Policing* in 1910. The school’s extensive curriculum included the study of “Bertillonage” (criminal anthropometry), fingerprinting, photography, and criminal writings, as well as that of weapons, forged documents, and instruments for picking locks. Ottolenghi taught a course entitled “Applied Anthropology and Psychology” that instructed students how to recognize a criminal’s “precise heredity, physical, ethnic, psychological, and pathological characteristics.”⁹³ When the time eventually came, the ambitious Ottolenghi was anxious to seek Mussolini’s support.

Lombroso’s *L’uomo delinquente* of 1876 assimilated a number of threads of European thinking about crime into the single figure of the atavistic “born or instinctual criminal.” Its author would later claim that this simple concept had come to him in “a flash of inspiration” while examining the unusual skull of Giuseppe Villella, a thief and arsonist. After having studied 383 skulls, Lombroso concluded that the criminal was characterized by an enlarged middle occipital fossa and vermis. He elaborated on these findings with an indefatigable series of anatomical, physiological, psychological, and moral tests, buttressing his argument with analogical correlations from nature and ethnological and linguistic studies. Criminal man was “an atavistic being who reproduces in his person the ferocious instincts of primitive humanity and the inferior animals.”⁹⁴ Lombroso considered this unfortunate species of humanity a throwback to an earlier phase of evolution. Such criminals bore extensive signs of their degeneration on their bodies—ape-like stigmata—that the expert eye could detect.

Lombroso had many intellectual debts. They included Gall’s phrenology and Broca’s craniology, the positivist philosophy of Comte, Haeckel’s notion of recapitulation, and Spencer’s psychology. As a medical student at the University of Pavia in the late 1850s, he had been impressed by the teratology and comparative anatomy of Bartolomeo Panizza. Morel’s degeneration thesis and Marzolo’s comparative linguistics were also important influences. Later on he drew on Darwin’s ideas. Like the discipline he contributed so much to, Lombroso was an indefatigable assimilator. Although the idea of the born criminal was fundamental to his philosophy, the concept did not remain static across the various editions of *L’uomo delinquente*. The book went through five editions between 1876 (when it was two hundred and fifty pages long) and 1897 (when it consisted of three volumes of two thousand pages in all, together with an *Atlas* of illustrations). French and German editions appeared in 1887, and a short summary of Lombrosian doctrine, *Criminal Man*, was translated into English in 1911.

Criminals were “constituted for evil” Lombroso wrote; they “do not resemble us, but instead ferocious beasts.”⁹⁵ In the second edition of his book, he introduced the “habitual criminal,” the “insane criminal,” and the “criminal by passion.” The “insane criminal” came to include three more psychological types, less distinguished by physical stigmata: the alcoholic, the hysteric, and the “mattoide” or semi-insane. Coined by one of Lombroso’s most loyal followers, Enrico Ferri in 1880, the “born criminal” featured in the third edition of *L’uomo delinquente*. Lombroso’s increasingly elastic categorization scheme resulted in the labeling of many more deviants as criminal.⁹⁶ He reduced the space devoted to biologically perverse criminals from a half to a third and expanded his discussions of the sociological causes of crime. Space allotted to punishment theory similarly

sample content of *The Truth Machine: A Social History of the Lie Detector* (Johns Hopkins Studies in the History of Technology)

- [click Billiards at Half-Past Nine \(The Essential Heinrich Böll\)](#)
- [click *Philadelphia Liberty Trail: Trace the Path of America's Heritage*](#)
- [download online Forbes \(25 May 2015\)](#)
- [It's ME!: Edward Wayne Edwards, the Serial Killer You Never Heard Of pdf, azw \(kindle\), epub](#)

- <http://fitnessfatale.com/freebooks/Introduction-to-Fungi.pdf>
- <http://twilightblogs.com/library/Introducing-Geology--A-Guide-to-the-World-of-Rocks.pdf>
- <http://yachtwebsitedemo.com/books/Forbes--25-May-2015-.pdf>
- <http://deltaphenomics.nl/?library/Visions-of-Science--Books-and-Readers-at-the-Dawn-of-the-Victorian-Age.pdf>