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QUANTIFICATION AND THE
SOCIAL QUESTION

Methods of quantification, identification, mapping, and standardization are at the core of both industrial capitalism and modern statecraft. Dating from the period of the colonial plantations and the financial transactions of early capitalism that enabled them, the emerging system of measuring, counting, surveying, and accounting expanded into a vast web of quantitative technologies, designed to organize and police humans, increase their productivity, and extract wealth. This vast web of bureaucratic procedures and mathematical operations, having grown exponentially since the beginning of industrialization, has culminated in the information technologies in use today. The diverse practices and divergent protocols that make up these procedures, ranging from economics to the natural sciences to state administration and the rules that govern the treatment of prisoners, nevertheless, form a single frontier, a single self-sustaining fabric, of which Big Data is arguably but the latest iteration. While social scientists sought to apply the classificatory and objectivist methods of the natural sciences to social facts and processes, like all methods of classification, the procedures of these practices did not simply describe an existing reality, but sought to reduce, subjugate, and transform it, often with unintended consequences. These maps of the social are as the political scientist and anthropologist James C. Scott noted, "abridged maps": simplifications that render the complexity of social life administrable and inscribe it into a matrix while simultaneously changing social life. Since this method of inducing general laws and patterns from particulars formed an essential part of the legitimization of structural inequality and violence, the quantitative social sciences met with conflict from the outset. Situated at a crossroads of social struggles, social science offered a means to demystify the causes of

social ills, and thus fight ignorance on the one hand, while on the other offering a positivist and reductionist “naturalization” of given relations and systemic inequalities.

It is at this tipping point, where supposedly objective and neutral data speaks for ideology, that the conflict over “positivism,” and what constitutes social knowledge and “facts,” takes place to this day. Today, the focus is no longer on classification and segregation, but on attribution and prediction, and the hedging of risks. As the legal theorist, Antoinette Rouvroy suggests in her essay “The end(s) of critique: data-behaviourism vs. due-process,” the data maps of both individual and collective behavior are generated from “infra-” and “supra-individual data.” Thus, although they present us consistently with “personalized” echoes of our quantifiable selves, actually, they bypass any encounter with reflexive human subjects, in favor of the “computational, pre-emptive, context- and behavior-sensitive management of risks and opportunities,” yet they also engulf us in echo chambers. Merely in trying to figure out what effects a personal credit score, for instance, today, results in a possible reduction of one’s personal credit score. There is growing evidence that the algorithmic underwriting of digital culture and media, not unlike the “positivist” data that would re-inscribe and essentialize social symptoms in the past, reinforce bias and structural discrimination on an increasingly greater scale. A data-augmented reality becomes an echo chamber of the law of the great number.

“On the other hand, however, average opinion does not represent an approximate value of truth, but instead the socially average illusion. In the latter, there participate what unreflective social research imagines to be its *ens realissimum*: those questioned, the human subjects. Their own nature, their being as

subjects, depends upon the objectivity, upon the mechanisms which they obey, and which constitute their concept. This can only be determined, however, if one perceives in the facts themselves the tendency which reaches out beyond them. That is the function of philosophy in empirical social research. If it is not realized or suppressed, if merely the facts are reproduced then such a reproduction is at the same time a corruption of facts into ideology." *Theodor W. Adorno*¹

1 Theodor W. Adorno, "Sociology and Empirical Research," in: Theodor W. Adorno et al., *The Positivist Dispute in German Sociology*, tr. Glyn Adey and David Frisby, London 1976, 86.



Hollerith Electric Tabulator, US Census Bureau, Washington, DC 1998, Courtesy Photograph by Waldon Fowcett, Library of Congress, Prints & Photographs Division [Repro. No.] LC-USZ62-45687

HERMAN HOLLERITH AND THE INVENTION OF THE DATA PUNCH-CARD SYSTEM FOR THE 1890 UNITED STATES CENSUS BUREAU

The census or head count is as old as the history of cities and statehood, purportedly originating with the Babylonians in 3800 BC. The age of modern data processing begins with the introduction of Hollerith's tabulator into the Eleventh United States Census in 1890—the same census that declared the “frontier” closed, and thus nominally put an end to the expansionist phase of colonization in North America. The 1890 census marks an era of technological intensification that witnesses a wave of rapid electrification, among other industrial, political, and social developments.

The American statistician Herman Hollerith developed the Hollerith machine in response to a competition by the US Census Bureau. The electric machine

read holes, punched into paper cards, to tabulate the population data. The breakthrough created near-automation of the sorting mechanism, as the machine read, counted, and sorted the punched cards whose holes represented the population data gathered by census-takers. The punch-card technology spread globally, enabling modern states to administer more intensely their populations and workforces. In 1924, Hollerith's Tabulating Machine Company developed into the International Business Machines Corporation, later known as IBM.

By 1935, the Social Security Act signed by Franklin D. Roosevelt won IBM a government contract for the biggest data-gathering enterprise to date, managing employment records of twenty-six million working Americans and three million employers. At the same time, IBM leased to the National Socialist government in Germany, via a subsidiary, custom-designed Hollerith solutions able to process millions of punch cards for the organization of the railroads, the forced labor system, and the concentration camps. As Edwin Black has shown in his study *IBM and the Holocaust* from 2001, Hollerith's tabulator enabled the targeting of European Jews—leading to confiscation of their property, ghettoization, deportation, enslaved labor, and, ultimately, annihilation.

“Population comes to appear above all else as the ultimate end of government ... Government has as its purpose not the act of government itself, but the welfare of the population, the improvement of its condition, the increase of its wealth, longevity, health, etc; and the means that the government uses to attain these ends are themselves all in some sense immanent to the population; it is the population itself on which government will act either directly through large-scale campaigns, or indirectly

through techniques that will make possible, without the full awareness of the people, the stimulation of birth rates, the directing of the flow of population into certain regions or activities, etc.”

—Michael Foucault²



Michael Foucault, "Governmentality," in: Graham Burchell et al (eds), *The Foucault Effect: Studies on Governmentality*, Chicago, IL 1991, p. 100

MAP OF LONDON'S POOR BY CHARLES BOOTH

Between 1886 and 1903, Charles Booth, an English social researcher and reformer from a wealthy Liverpool shipping family, undertook a comprehensive survey of poverty, industry, and religion entitled *Inquiry into the Life and Labour of the People of London*, the third and final version published in seventeen volumes in 1902/03. When Booth began the study, England was at the height of its imperial power. The "social question" was already in its second iteration

2 Michael Foucault, "Governmentality," in: Graham Burchell et al (eds), *The Foucault Effect: Studies on Governmentality*, Chicago, IL 1991, 100.

following the wave of worker militancy throughout Europe in the 1830s and 1840s, the defeat of the 1848 revolutions, and the brutal suppression of the Paris Commune in 1871, which again raised the specter of communism, communal luxury, and an end to the acceptance of misery as a way of life.

The Booth study, comprising a team of twenty researchers, was unprecedented in its scope and influence. Its statistical data on living and working conditions, the organization of trades and industries, migration patterns, and leisure and religious activities set within the larger urban environment, was widely used by reformers, parliamentarians, and social science researchers. Perhaps best known for the maps, which charted levels of poverty and wealth street by street, *Life and Labour* is considered to have put the study of poverty on a firm scientific basis. Booth was well aware of the stakes of the project, which presumably accounts for the fact that he only included quantitative information in the published volumes. Yet much of that quantifiable information was calculated from interviews and observations the team made while accompanying the police and School Board Visitors, the latter keeping detailed records of every house and its occupants, which they generously shared, bibles in hand, with the Booth team. The published volumes obscured the crucial role the police and the regulatory agents of the state played in enabling the social researcher to cross into zones of the city in which normally they would not be welcomed, and the role of the state in ordering knowledge about poverty.

Already in 1844, Frederic Engels had undertaken his own study of life and labor entitled *The Condition of the Working Class in England*, which focused on the industrial city of Manchester in the north of England. It began: "The real conditions of the life of the proletariat are so little known among us that even the

well-meaning ‘societies for the uplift of the working classes,’ in which our bourgeoisie is now mistreating the social question, constantly start out from the most ridiculous and preposterous judgments concerning the condition of the workers. We Germans more than anybody else stand in need of a knowledge of the facts concerning this question.” It is not so much facts that Marx and Engels will provide, but a completely different analytic framework to that dominating the so-called social question. Marx and Engels are clear: capitalism as a system is the problem. The social question as given is misdirected: the organization of the whole of society needs questioning.

“When we consider bourgeois society in the long view and as a whole, then the final result of the process of social production always appears as the society itself, i.e. the human being itself in its social relations. Everything that has a fixed form, such as the product etc., appears as merely a moment, a vanishing moment, in this movement ... The conditions and objectifications of the process are themselves equally moments of it, and its only subjects are the individuals, but individuals in mutual relationships, which they equally reproduce and produce anew.”

—Karl Marx³

W.E.B. DU BOIS, THE PHILADELPHIA NEGRO

W.E.B. Du Bois’ *The Philadelphia Negro: A Social Study*, published in 1899, was the first major social scientific study of the social and economic life of African Americans to make use of quantitative data. The extensive study of Philadelphia’s Seventh Ward

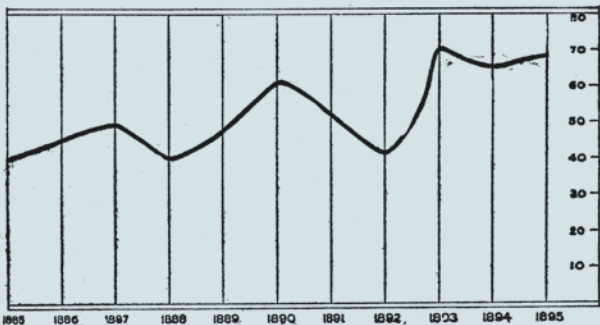
3 Karl Marx, *Grundrisse: Foundations of the Critique of Political Economy*, tr. Martin Nicolaus, Notebook VII, London 1993, 643–44.

Theft	243
Serious assaults on persons	139
Robbery and burglary	85
Rape	24
Other sexual crimes	23
Homicide	16
All other crimes	11
Total	541

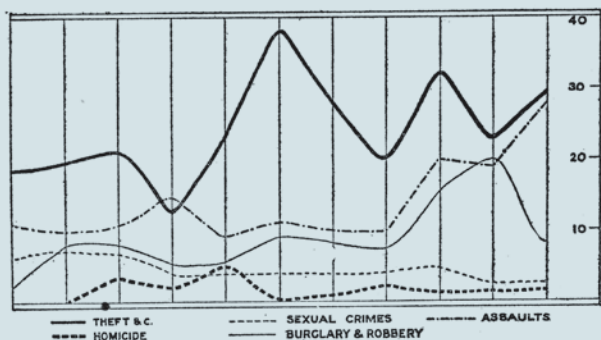
Following these crimes from year to year we have :

Crime.	1885.	1886.	1887.	1888.	1889.	1890.	1892.	1893.	1894.	1895.	Total.
Theft, etc.	20	21	23	13	24	39	20	32	23	28	243
Robbery and burglary	2	8	8	5	5	9	7	14	19	8	85
Serious assaults	10	9	11	15	9	12	9	19	18	27	139
Homicide . . . . .	.	.	3	2	5	.	2	1	1	2	16
Sexual crimes	6	7	7	4	4	4	4	5	3	3	47
All others	2	.	1	1	.	.	.	2	3	2	11
Total	40	45	53	40	47	64	42	73	67	70	541

The course of the total serious crime for this period may be illustrated by this diagram:



Drawing a similar diagram for the different sorts of crime we have :



In ten years convictions to the penitentiary for theft have somewhat increased, robbery, burglary and assault have considerably increased, homicide has remained about the same, and sexual crimes have decreased. Detailed statistics are given in the following table:

CRIMES OF 541 CONVICTS IN EASTERN PENITENTIARY, 1885-1895.

Crimes.	1885.	1886.	1887.	1888.	1889.	1890.	1892.	1893.	1894.	1895.
Assault and battery	3	.	1	2	.	1	.	.	.	.
Aggravated assault and battery	3	3	3	7	3	6	3	6	6	9
Assault to kill	4	6	7	6	6	5	4	13	11	17
Manslaughter . . . . .	.	.	.	1	3	.	1	1	.	1
Murder . . . . .	.	.	3	1	2	.	1	.	1	1
Assault to murder . . . . .	.	.	1	.	.	.	.	.	.	.
Assault to steal . . . . .	.	.	.	.	.	.	2	.	1	1
Larceny	20	21	23	13	24	39	17	27	22	28
Robbery	2	3	3	1	.	4	3	5	9	6
Burglary . . . . .	.	5	5	4	5	5	4	9	10	2
Embezzlement . . . . .	.	.	.	.	.	.	.	1	.	.
Sodomy	2	1	1	3	2	3	2	.	.	1
Abortion	1	.	.	.	.	.	1	.	.	.
Rape	1	.	.	.	.	.	.	2	1	.
Attempt to rape	1	6	1	1	1	1	1	3	2	1
Incest	1	.	.	.	.	.	.	.	.	.
Keeping bawdy house . . . . .	.	.	4	.	.	.	.	.	.	1
Enticing female child . . . . .	.	.	1	.	1	.	.	.	.	.
Carrying concealed weapons	1	.	.	.	.	.	.	1	.	.
Forgery	1	.	.	.	.	.	.	.	1	1
False pretence . . . . .	.	.	.	1	.	.	1	.	1	.
Receiving stolen goods . . . . .	.	.	.	.	.	.	2	4	1	.
Mayhem . . . . .	.	.	.	.	.	.	.	1	.	.
Indecent exposure . . . . .	.	.	.	.	.	.	.	.	.	1
Conspiracy . . . . .	.	.	.	.	.	.	.	.	1	.
Total	40	45	53	40	47	64	42	73	67	70

appeared as debates about the status of African Americans, twenty-five years after emancipation, were provoked by the publication of the 1890 census and by a growing hysteria over black crime and “disorder.” Similar to Booth’s study, Du Bois and his one assistant Isabel Eaton surveyed every household in the Ward, creating maps as well as elaborate tables and charts that were new to the presentation of social science results. As Booth’s study had found, crime, policing, and prison appeared to be central to the lives of working class and poor people in England’s cities as well as in America’s. Unlike the Booth study, however, the police were not collaborators: Du Bois and his wife lived in the poorer area of the Ward for over a year during the study. More importantly, the explanation for crime and imprisonment rates—where African Americans represented 12 percent of the population but comprised 30 percent of the prison population—was located in the history of slavery and the emancipation experience, consisting as it did in convict-leasing, discrimination in the Southern courts, mob violence, and the “drawing of the color line.” Despite its extraordinary range: meticulous data collection, its singular treatment of the residents of the Seventh Ward as people whose future mattered, and sponsorship by the wealthy Susan P. Wharton, *The Philadelphia Negro* received no accolades, ignored by both the academic profession and research-funding bodies until after the centennial of its publication.

“The main result of my schooling had been to emphasize science and the scientific attitude ... I determined to put science into sociology ... I was going to study the facts, any and all facts, concerning the American Negro and his plight, and by measurement and comparison and research, work up

to a valid generalization ...

Two considerations thereafter broke in upon my work and eventually disrupted it: first, one could not be a calm, cool, and detached scientist while Negroes were lynched, murdered, and starved; and secondly, there was no such definite demand for scientific work of the sort that I was doing. I regarded it as axiomatic that the world wanted to learn the truth This was, of course, but a young man's idealism."

—W.E.B. Du Bois⁴



Cesare Lombroso, *L'homme criminel*: atlas, Paris 1895, Courtesy Charité- Universitätsmedizin Berlin, Institut für Geschichte der Medizin und Ethik in der Medizin

CRIMINAL ANTHROPOLOGY: VISUAL STIGMATA

The Italian criminologist and physician Cesare Lombroso's theory of the "criminal man" was probably the most influential doctrine to emerge from the an-

4 W.E.B. Du Bois, *Dusk of Dawn: An Essay Toward an Autobiography of a Race Concept*, San Diego, CA 1940, Chapter 4: "Science and Empire," 67–68.

thropometric tradition, and significantly directed the development of criminology. Lombroso's basic claim, based on thousands of measurements of both living and dead convicts, was that criminality was innate, an arrested evolutionary development, which tied criminality to savagery. Lombroso believed that members of the "criminal race" were identifiable by certain visual signs or stigmata, and when Galton began photographing the facial features of known criminals, Lombroso followed, adapting photographic composites into his work. Members of the "criminal race" had thicker skulls and simpler cranial structures, longer arms, receding foreheads, asymmetrical faces, scant beards, woolly hair, swollen lips, twisted noses, precocious wrinkles, darker skin, inverted sexual organs, and so on. Lombroso was particularly obsessed with prostitutes and anarchists and in his study of American and European anarchists, he found the degenerative characteristics common to natural-born criminals in an overwhelming number of cases, including those of the Parisian anarchists, whom he studied alongside the French criminologist Alphonse Bertillon.

While the whole notion of the visual stigmata of the criminal may seem antiquated, it is still in use. This particular branch of criminology, which barely differs from its late nineteenth- and early twentieth-century versions in its racial profiling, is influential today in the policing of gangs, with its vast photographic and informational archives. It also underwrites all current and planned security and surveillance systems, from routine DNA identification to iris recognition scans, which promise predictive preemption of the individual's danger to society. Seemingly easy identification of a person's race—the experience of knowing it unconsciously or knowing it without doubt—is central to racism and to the means by

which groups of people can be classified, surveyed, and disciplined. The criminal needs his or her stigmata too, and Lombroso was one of the first to provide it.

“The protean oral ‘texts’ of the criminal and pauper yield to a ‘mute testimony’ that ‘takes down’ (that diminishes in credibility, that transcribes) and unmasks the disguises, the alibis, the excuses and multiple biographies of those who find or place themselves on the wrong side of the law. This battle between the presumed denotative univocality of the legal image and the multiplicity and presumed duplicity of the criminal voice is played out during the remainder of the nineteenth century. In the course of this battle a new object is defined—the criminal body—and, as a result, a more extensive ‘social body’ is invented. We are confronting, then, a double system: a system of representation capable of functioning both honorifically and repressively. To the extent that bourgeois order depends upon the systematic defense of social relations based on private property, to the extent that the legal basis of the self lies in the model of property rights, in what has been termed ‘possessive individualism,’ every proper portrait has its lurking, objectifying inverse in the files of the police. In other words, a covert Hobbesian logic links the terrain of the ‘National Gallery’ with that of the ‘Police Act.’”
—Allan Sekula⁵

BERTILLON/GALTON

Francis Galton was racial scientist, African explorer and geographer, statistician, eugenicist, inventor, and

Alphonse Bertillon, "Alphonse Bertillon's photograph and record of Francis Galton," in: *Karl Pearson: The Life, Letters, and Labors of Francis Galton*, Vol. 2, Cambridge 1893

Taille 1 ^m	Long ^e	Pied g.	L'œil de l'œil	N° de cl.	Âge de
Voûte	Larg ^e	Médus g.		Aur ^e	ou de
Enverg ^e 1 ^m	Long ^e	Auric ^e g.		Par ^e	a
Buste 0,	Larg ^e	Coulée g.		Part ^e	degr ^e
					Age app ^e



Front	Inclin ^e	Racine (caud)	Dent o.	s.	p.	f.	Burle	Color ^e (pig ^e)				
	Haut ^e	Dis	Bas	Lab. c.	n.	m.	d.	Cheveux	Color ^e (sang ^e)			
	Larg ^e	Serr	Haut	Souffl.	Larg ^e	A. trg.	l.	p.	r.	d.	Car	Cost.
	Part ^e	Part ^e	Oreille droite.	Part.	PS.	f.	s.	E.	E.	Autres traits caractéristiques ?		
												Signé dressé par M.

Bain News Service, "Portrait Parle class, France," New York 1910-15, Courtesy Library of Congress, Prints & Photographs Division [Repro. No.] LC-DIG-ppg-bain-09570



meteorologist, who transformed social statistics and coined the term eugenics. His studies of innate human differences led to two inventions: composite portraiture and fingerprinting, both of which were of great interest to Alphonse Bertillon. A member of the police force and a biometrics researcher, Bertillon pioneered the anthropometric system of criminal identification, the basis for twentieth-century surveillance, criminal identification, and profiling. Photographic recording of criminals began in the 1840s, but Bertillon's standardization of the procedure in the late 1880s was enabled by Galton's superimposition of multiple photographs to create an ideal type or "natural kind." Galton's discovery of types of fingerprint patterns was crucial to making identification by fingerprinting the norm in policing.

In 1893, Galton went to Paris to visit Bertillon, then chief of the Paris Police. Bertillon, however, was not interested in the natural-born criminal. He replaces the essentialist ontology, so prominent in Lombroso's criminology and Galton's eugenics, with modern forensic epistemologies. Bertillon turned his attention to creating the file that represents an entire identification system capable of producing precise individual markers rather than ideal types. Each individual will have a distinct record, permitting identification in the file room and on the street.

In order for police power to function as a mode of governance—to wield the discretionary force necessary to dispose of present threats to social order and to avert future dangers to it—the police will need to learn to systematize law, knowledge, procedure, and anticipation, and learn how to acquire the indifference necessary for policing on an industrial global scale. Bertillon's system is very important in this process.

“We can speak then of a generalized, inclusive archive, a shadow archive that . . . contains both the traces of the visible bodies of heroes, leaders, moral exemplars, celebrities, and those of the poor, the diseased, the insane, the criminal, the nonwhite, the female, and all other embodiments of the unworthy. The clearest indication of the essential unity of this archive of images of the body lies in the fact that by the mid-nineteenth century a single hermeneutic paradigm had gained widespread prestige. This paradigm had two tightly entwined branches, physiognomy and phrenology. Both shared the belief that the surface of the body, and especially the face and head, bore the outward signs of inner character In claiming to provide a means for distinguishing the stigmata of vice from the shining marks of virtue, physiognomy and phrenology offered an essential hermeneutic service to a world of fleeting and often anonymous market transactions. Here was a method for quickly assessing the character of strangers in the dangerous and congested spaces of the nineteenth-century city. Here was a gauge of the intentions and capabilities of the other.”
—Allan Sekula⁶