Translated excerpt

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Speichern und Strafen
Die Gesellschaft im Datengefängnis

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Store and Punish. Society in Data Prison

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Introduction

On the Path to a Programmed Society

The collection and storage of data is not a new phenomenon. Physicist Andreas Weigend, Chief Scientist of Amazon.com from 2002 to 2004, explains in his book *Data for the People* that even in the earliest days of recorded human history, about 6,000 years ago, around the time the Sumerians invented the cuneiform script, the ruling priestly class watched over the creation, drying and storage of the clay tablets forming the civilization's archive. "The tablets registered who owned what; who owed what for taxes, rent, fees, loans, or trades; and what laws governed these possessions and exchanges."[1] Maintaining these records, Weigend writes, was "a way to concentrate power." The priests decided who had access to this official archive and who didn't—and hence controlled the data it contained. The role of the local temple administration of yore is performed today by Google, Apple, Facebook und Amazon. Their codes determine what enters the digital archive of civilization, which information survives, which is deleted and which is not. These information repositories, housed in giant data centers, are just as inaccessible to normal users as the temple archive of the Sumerians was. Knowledge is power. The difference between cuneiform and programming code is that nowadays a massive amount of information is being collected on individuals and that societies are being steered with the help of algorithms. In the digital era of humanity, the "Datacene" as I refer to it, data has become a geological factor, so weighty and incriminating that the mass of it has an almost gravitational pull. We can't even move without producing data, it follows us like a permanent shadow—a digital twin that represents us, tells our story and possibly even blows the whistle on us.

We live in a world created, managed and controlled by computers, in a megacomputer called society where individuals are the microprocessors and interactions the switching

processes. Cars, automatic doors, toasters, refrigerators, contact lenses, textiles—onetime analogue objects are now high-performance computers packed with technology. A car is no longer primarily a means of transportation but a computer with an integrated mobility app. A modern automobile runs with the help of about 100 million lines of code on average. The Hubble Space Telescope, by comparison, makes do with only about 50,000 lines. The entire source code of Google comprises about two billion lines.[2] The more our living environment is transformed into code, the more the foundations of government change.

With his writings and his lecture series at Collège de France (1974-75), French philosopher Michel Foucault left an intellectual legacy that offers an approach to explaining the digital turn. Foucault died at the age of fifty-seven, in 1984—the year George Orwell's dystopian novel was set. It was also the year that Apple advertised its Macintosh computer, in a TV commercial referencing Orwell's 1949 novel. The ad depicts a fanatical Big Brother visible on a giant screen, proclaiming a "garden of pure ideology" and the "Unification of Thoughts," before a nameless heroine hurls a sledgehammer at it in an act of liberation.[3] The Internet was terra incognita back then. Only in 1991, seven years after Foucault's death, did British physicist Tim Berners-Lee publish the first page on the World Wide Web, while working at the CERN research center in Geneva. What Foucault didn't see were the power and surveillance technologies resulting from the explosion of Big Data and from digital devices, allowing societies to be calculated and controlled. Foucault had no way of knowing that by evaluating user data technology companies would introduce a form of algorithmic regulation and come to exercise state-like functions (in criminal prosecution, for example). And yet his work is more timely than ever, as he describes techniques of power that can be utilized as explanatory filters for analyzing programmed societies.

Foucault's term "governmentality" introduced an analytical category semantically linking "governing" and "mentality" and forming a triangle of power together with

sovereignty and discipline.[4] Foucault understood governmentality as "the ensemble formed by institutions, procedures, analyses and reflections, calculations, and tactics that allow the exercise of this very specific, albeit very complex, power that has the population as its target, political economy as its major form of knowledge, and apparatuses of security as its essential technical instrument."

With the population explosion of the eighteenth century, control of this populace became a key concern of those in power. In the words of Foucault: "Governments perceived that they were not dealing simply with subjects, or even with a 'people,' but with a 'population,' with its specific phenomena and its peculiar variables: birth and death rates, life expectancy, fertility, state of health, frequency of illnesses, patterns of diet and habitation."[6] The government's task was "organizing circulation, eliminating its dangerous elements, making a division between good and bad circulation, and maximizing the good circulation by diminishing the bad . . ." The new techniques of rule therefore implied that "one works on the future": the town would "not be conceived or planned according to a static perception," but would "open onto a future that is not exactly controllable, not precisely measured or measurable . . ." The city, for Foucault, was a serial phenomenon, an "indefinite series of mobile elements: circulation, *x* number of carts, *x* number of passers-by, *x* number of thieves," an "indefinite series of events that will occur," e.g., *x* number of ships docking, and an "indefinite series of accumulating units," e.g. *x* number of inhabitants, etc. And the "management of these series," he says, "can only be controlled by an estimate of probabilities."[7]

Statistics, in other words, is the central instrument of controlling these probabilities. The state needs to know how many people live on its territory, how many goods are being produced, how many buildings are entered in the land register, and how much money is in circulation. "Statistics," writes Foucault, "is the state's knowledge of the state, understood as

the state's knowledge both of itself and also of other states."[8] Since the end of the sixteenth century, the census has become a core tool of the art of governing. Governmentality is a form of power which by means of statistics (mortality, illness, birth rates and so on) collects knowledge about the populace and has a regulating influence on it. By counting and estimating birth and death rates, the state exercises its claim to sovereignty as well as its territorial claims. Only by tapping into this knowledge does the latter become governable.

From governmentality to algorithmic governmentality

Even today the state uses official statistics to know what's happening on its territory: the inflow and outflow of goods, fluctuations in population, the number of births and deaths, economic indicators. But the state is no longer alone in tackling these tasks. Internet companies like Google and Facebook collect massive amounts of data on their users. Google Maps has more information than any land registry office: where pools are built without a permit, where air-conditioning has been installed, how many lawns a piece of property has, where marijuana is being grown, etc. Google Street View was launched in 2007 with the aim of creating a photographic 3D map of the world. Cars, tractors, trolleys, snowmobiles and even sheep (on the Faroe Islands, for instance) were used to make 360-degree panorama views,[9] allowing a virtual tour of entire city centers, even zooming into subway tunnels or the retail spaces of stores. It shows—at least photographically—what official statistics don't: illegal construction, criminality, prostitution. The streetwalkers of Bois de Boulogne are visible in the photos alongside drug dealers and car thieves. A host of wrongdoers have been inadvertently caught in the snares of this documentation system: drug dealers pushing their wares in broad daylight, burglars climbing onto balconies, prisoners in uniform walking

along country roads, gangsters threatening pedestrians with guns.[10] Foucault would have had a field day with this new technology. Google can see in real time who is searching where for pornography, female escorts or baby formula. Neither the state nor a private actor has ever had at its disposal such a fine-grained picture of the social body.

With over two billion users, Facebook has for all intents and purposes morphed into a statistics office registering diverse sociodemographic variables such as gender, age, religion and profession and carrying out representative surveys (disguised as narrative moments) in the form of status updates ("What you're doing"). The professional networking service LinkedIn uses profiles to regularly analyze labor markets and can see with its data which regions are hiring and which fields are drawing college graduates. Google administers accounts, P.O. boxes and the Yellow Pages, and fulfils an administrative function as a credit-rating agency. Its competitor Apple is meanwhile counting the steps of over 800 million people around the world—that's how many active iPhone users there are being tracked with pedometers. These digital apparatuses allow real-time monitoring, taking the pulse of society as it were. Is its blood pressure high? Where is the heart rate highest in the daytime? Where do people sleep a lot on average, where relatively little? The mania for collecting data, bordering on absolutism, was referred to by Foucault as *arcana imperii*, or state secrets. The state had to protect its population from secret services eager to know more about it. In the information age, this knowledge in the service of power is devolved upon private companies that calculate—and control—society with their "arcane formulas."

Google received a patent for a smart-home application that puts its occupants under 24/7 surveillance.[11] The company's avowed aim is to obtain demographic information. According to the patent application, "a video monitoring camera placed in the kitchen of the home can perform image processing on several days or weeks worth of captured data . . . to establish how many occupants live in the house." The system can also use audio monitoring to

determine the age and sex of its occupants. A dynamic "census" and behavioral control of this sort enable Google to bring governmentality from the macro to the micro level of households. It is not society being steered in this case but its nucleus, the family. Networking the home enables a form of political encroachment that wasn't possible in purely technical terms in a pluralized and atomized society: the control of recreational behavior. A smart home with a "household policy manager" monitors how long children spend in front of screens, how much time the family spends together at the dinner table, and what tone is used in interpersonal communication. The smart home in other words is located in the normative force field of Big Tech. The big Internet companies—Google, Amazon, Facebook and Apple (GAFA, collectively)—have mutated into parastatal actors that posit rules of behavior (Siri advises her users not to smoke, for instance),[12] monitor the population, and collect evidence for criminal proceedings.

Amazon has filed a patent application for so-called voice prints, a voice-analysis system designed to determine the accent of users.[13] The technology could be used, for example, to find out where refugees come from—and if their self-professed country of origin is correct. Gigantic masses of data (i.e., Big Data) allow newfangled computing and analysis methods that once seemed impossible with the traditional tools of statistics. Working on the future, the "management of open series" that to Foucault's mind was constitutive of the practice of governing, has become much more effective thanks to forecasting techniques based on data analysis.

It was French journalist, publicist and politician Émile de Girardin (1806-81) who quipped that "gouverner, c'est prévoir"—"to govern is to foresee," to plan ahead, to make provisions. Governmentality no longer simply entails being informed about the populace (births, mortality rate, life expectancy) but also being able to predict their actions and behaviors. All throughout Europe public administrations are using data-based forecasting

models to identify social risks before they become problematic. Authorities in Great Britain are using analytics to detect cases of domestic abuse.[14] The IRS in the United States relies on intelligent software to predict tax evasion.[15] And the police in numerous countries use algorithms in fighting crime. If statistics were once the main technology of governing, today it's Big Data. A new political arithmetic is in the making where (objective) hazards or (subjective) threats are identified on the basis of numerical scores. The technology company IBM describes the challenges of "cognitive government" as follows: "In today's knowledge-based, data-driven economy, governments need the ability to understand what the trends and predictive indictors are in critical systems like employment, public health, education, financial markets, public safety, transportation and natural resources."[16]

Belgian legal scholar Antoinette Rouvroy refers in this context to an "algorithmic governmentality," by which she means "a certain type of (a)normative or (a)political rationality founded on the automated collection, aggregation and analysis of big data so as to model, anticipate and pre-emptively affect possible behaviors. . . . [I]t seeks not to govern reality, but to govern on the basis of reality."[17]

The state acts like a gambler in its attempts to foresee crime or welfare fraud with the help of predictive algorithms from the private economy.[18] It wagers on the future behavior of its citizens. Where will the next burglary be? Where the next instance of abuse? The next protest marches? Where's the next potential tax dodger hiding? Public order is ensured with the help of data.

The City of Boston, under its tech-friendly mayor Martin J. Walsh, has introduced a "CityScore" index to measure in numerical terms the health of the municipality. The score is derived from various "performance metrics," e.g., reaction times of the city's emergency call center, library usage, trash production, pothole repairs, traffic flow, etc. Residents can check the current score each day at the corresponding website. There is even a trend index for

stabbings and shootings. Governing by data. This stock-exchange-like characterization of an urban community encourages those in positions of responsibility to think only in terms of numbers (the models also implying a certain value relativism when values such as security and equality degenerate into mathematical figures). A CityScore of 1 is "normal," 1.25 is perfect. Everything under 1 is cause for alarm.[19]

Foucault's disciplinary society was based on an assumed institutional normativity. The state and the church were the authorities that determined who was healthy or sick, what was "normal" or "perverse." Social norms—the seating arrangement in a classroom, for instance—were defined from above in a hierarchical procedure. In the age of digital governance, this process is reversed. The norm, the standardized form of social behavior, is no longer determined by the institutional archive but by means of a mathematical-statistical procedure. Algorithms now decide who is sick, creative or credit-worthy. If psychiatry defined deviant behavior in the disciplinary society, in the digital era this is done by code. Italian philosopher and media theorist Matteo Pasquinelli talks about a new type of norm, the computerized or "computational norm."

> Since the late 1970s, that is, since the information revolution, pattern recognition has slowly emerged as the new *computational norm* of power that has expanded and, in some cases, replaced the old institutional norm. . . [T]he grid of this new norm (the standard of social behavior or profitable production) is no longer validated from above, but statistically computed from below. It is a computational norm rather than an institutional one, as computation comes to automatize the work of the institution at large.[20]

In a data-driven society it is computers that determine the binary codes true/false, justice/injustice, legal/illegal, good/evil, virtuous/vicious, healthy/sick, normal/abnormal.

Programming code is language, medium and instruction at once. One could even say that everything encoded entails a form of power.

The disciplinary society as described by Foucault had institutions like schools and barracks that disciplined and punished but could still be reformed at least in theory. The pacifist could refuse to take up arms, the teacher could quit his job, the high-school student could revolt. In the programmed society, however, there are fewer institutions with transparent rules of procedure, fewer entities with mailing addresses. Discursive spaces and the possibility of breaking the rules are thus disappearing in the process. Computer commands cannot be disobeyed. Algorithms make short work of things. Users can't know why a facial-recognition system denies them access or why a comment has been deleted and who wrote the code for it. There is nothing and no one to hold responsible, nowhere to lodge an appeal.

The digital subject is in a situation like the protagonist of Franz Kafka's novel *The Trial*. Josef K. is arrested on his thirtieth birthday. The two guards, who don't identify which authority they represent and don't accept his "identification papers," merely tell him, "You can't go anywhere, you're arrested."[21] He encounters a (state) authority that not even shyster lawyers can grasp. A criminal trial in the usual sense doesn't take place. There is no precise summons, no warrant of arrest, no indictment, no crime, no moral culpability. The proceedings take place in secret. K. has to seek out the courtroom himself, in a ramshackle tenement building. He never learns the verdict nor the reason for his arrest. The trial that never takes place, ground down by the impenetrable machinery of bureaucracy, anticipates the punishment. Kafka's bleak novel—according to his biographer Max Brod, the author laughed when reading it out loud—can be read as a metatheory of the programmed society. Here too the centers of power are shrouded in secrecy, the law is hidden behind (algorithmic) gatekeepers, morality is a covert affair. We are all diffusely captive in a world of Big Data

with its inscrutable chains of command. The novel's very first sentence—"Someone must have slandered Josef K., for one morning he was arrested despite having done no evil," the word evil (*Böses*) bursting in like an elemental force—vaguely echoes the slogan of Google, "Don't be evil," which could be read as an injunction to mind your own business. It was Eric Schmidt, former CEO of Google, who said, "We know where you are. We know where you've been. We can more or less know what you're thinking about."[22] The head of a secret police organization might argue along similar lines.

We live in a society in which automated systems evaluate and pass judgment on us, where we end up on lists (e.g., a no-fly list) without being consulted or notified, and where machines put us on trial. Digital storage technologies that record our every word, sound and step, and possibly use them against us, make our lives a perpetual trial based on circumstantial evidence. A comprehensive system of listening devices, surveillance cameras and user histories sets a process of confession in motion in which data talks and renders the hearing of evidence obsolete. The (computerized) trial has already begun before the criminal trial. Every act of saving data is a form of detention, every biometric facial recognition an arrest with subsequent fingerprinting and photographing—a computerized strip search in which individuals are detained for a legal second and their data put in investigative custody. The data is "frisked" and examined. This continual form of arrest is not considered intrusive since it is not the physical body being searched but only the data body. With the spread of facial-recognition systems, these micro arrests, as I call them, will intensify into a panoptical arrest.

In *Discipline and Punish*, Foucault describes how the panopticon—the circular prison in the middle of which a guard in a tower has a view into its open cells—created a machinery of surveillance that "automates and individualizes power." The psychological trick of this

architecture is that surveillance still works when the prisoner is not even being watched. The illusion of surveillance is enough to be effective. The panopticon is set up in such a way

> that the surveillance is permanent in its effects, even if it is discontinuous in its action; that the perfection of power should tend to render its actual exercise unnecessary; that the architectural apparatus should be a machine for creating and sustaining a power relation independent of the person who exercises it; in short, that the inmates should be caught up in a power situation of which they are themselves the bearers.[23]

It is no longer necessary to throw people into dungeons like during the Middle Ages. They willingly imprison themselves, voluntarily accepting the electronic shackles of smartphones and fitness trackers, or the electronic house arrest known as a smart home. We are building our own data prison—with microphones, cameras and sensors that observe us around the clock like in an actual penal system. The data prison is architecturally invisible. There are no walls, no cells, no guards, no investigating judge. The technology of surveillance is more subtle than that. We seem to move freely in public and private space, yet with every step we take our mobile devices transmit tracking data and we unwittingly comply with reporting obligations. The data prison is an open one that needs no walls; we are prisoners on day release who are constantly being monitored. There is no risk of escape when our data bodies are constantly being registered and put into algorithmic pretrial detention.

Alexa, Siri and Cortana do exactly what a prison warden does: keep an eye on their inmates, eavesdrop on them, observe their behavior, inspect their rooms, control their movements and physical presence, supervise them when they’re outdoors or in their cells (homes), have conversations with them, and possibly take disciplinary action.

We are dealing with a new form of internment and standardization. It is no longer psychiatry wards and prisons that zone and code our range of movement, but smart technology and algorithmic systems. It is precisely the invisibility of control mechanisms, the Kafkaeque no-show of police force and the total immaterialization of power that pose the real threat.

Foucault writes about a "penal power, distributed throughout the social space; present everywhere as scene, spectacle, sign, discourse; . . . operating by a permanent codification of the mind of the citizens; eliminating crime by those obstacles placed before the idea of crime."[24] Penal power still exists, just not in the form of water cannons, mounted patrols and courts, but as supposedly harmless gadgets, as smart "friends and helpers" that eavesdrop on their users like front-line organizations of the police, notifying law-enforcement agencies of any potential transgressions.

A continuous record is being kept, tracing the whereabouts and activity of individuals. The collected data results in a kind of electronic certificate of good conduct, an electronic criminal record effectively issued to everyone. There are no previous convictions in the narrow legal sense, no sentence has been passed in a criminal proceeding, no penalty meted out. Instead the production of data (search histories, geodata, tracking data, travel data) has generated a modicum of suspicion, a public record, so to speak, running counter to the constitutional presumption of innocence.

Digitalization has introduced a new offense: the precrime. A crime can be indicated before it is even committed, it merely needs to be thought or the accused merely has to manifest the data "typical of a criminal." The so-called precrime units of police departments around the world are using data of past crimes to calculate the likelihood of future ones, a process known as predictive policing. If the system calculates a high probability of burglary in a certain neighborhood, the police sends a patrol car there in anticipation of the crime.

These forecasting techniques not only serve to predict crime but also to prevent it from even happening. Prediction is followed by pre-emption.[25] The suspension of future developments serves to maintain the status quo, freezing social relations as it were. In a post-penal society of this sort, as I call it, subtle mechanisms restrict our freedom a priori, law-abiding behavior is programmatically induced thus precluding the violation of norms and the need to mete out a punishment. Sanctions are placed upstream—in uncommittable actions. Punishing without actual punishment.

The more the state relies on "proactive" police work, the fuzzier its control becomes. A police patrol in a high-risk area doesn't know if its very presence has foiled a burglary and deterred potential criminals or if the prognosis itself was wrong and no burglary was even planned.[26] The forecasting techniques themselves produce new insecurities, to which the state reacts by becoming even more preventive, restrictive and hence more authoritarian. The algorithm-driven state becomes a highly neurotic machine. The military-industrial complex has to constantly screen its citizens in order to uphold a metastable social order. But the more data is generated, the more unstable this order becomes. The structural foundations of the state undergo a massive shift. The system finds itself in a permanent state of emergency. Predictive-paranoid algorithms, whose statistical frequency distributions identify risks and suspicious connections almost everywhere, will result in the installation of ever more surveillance systems and thereby perpetuate a paranoia from which our only escape is more data-protection systems. We're trapped in the data matrix.

