

Design Governmentality:

by anke gründel

The Power of Data in Urban Positions

GOVERNMENT, DESIGN, AND ACADEMIC DISCOURSE

Government in the age of big data and the internet 2.0 is becoming as smart as the things that start to make up our daily lives. Smart phones, smart cars, even smart homes and cities are presenting new ways of imagining politics. Design in such propositions is the key to governmental change. However, design is not a straight-forward term and its study often requires considerable conceptual scaffolding and interdisciplinary method appropriation. Such intellectual gymnastics in turn enable the illumination of design from a plethora of angles. In the following I will discuss new governmental technologies in smart cities, new urban developments in which infrastructure is instrumented with computing networks that both record information about the city and its inhabitants and manage everything on the basis of this information. I hope that a discussions of new political paradigms from the field of design studies will yield interesting insights about the political nature of design itself. Its current integration in political rhetoric presents new problems for philosophy, but also the traditional design fields. The centrality of design in governmental paradigms questions the dichotomy between the ‘practical’ and ‘theoretical’ fields and necessi-

tates a renewed perspective on political, social, and economic consequences of design. I want to argue that design, as an increasingly complex and ambiguous term, finds application in all areas of human activity. In this paper, I will discuss design as a method of government and its relation to political economy. I will trace the representation of the user, consumer, or participant in the new smart city design and link it to new governing paradigms embedded in them.

DESIGNING THE BUILT ENVIRONMENT

Much of what we would consider archetypically human happens in artificial environments. Often, the interconnectivity of the designed environment and human interaction escapes our notice. As Bruno Latour and Michel Callon have argued in studying associations, more than forming networks of interconnected pieces, the made world and its makers constantly codetermine each other.¹ It is this codeterminacy between human and non-human actors that design studies takes as its object. The environment we construct around us is deeply and reciprocally connected to human subjectivity, to our understanding of ourselves in connection to the made world. At the same time, building and making are complex problems whose connection to subjectivity is neither always immediately apparent nor manifested in predictable ways. In thinking about building within the discipline of design studies, a specific interpretive mechanism would be useful through which subjectivity can be made visible. The tools for such an investigation can be extracted from Michel Foucault's account of spatial organization and its effect on subjectivity. For the purposes of design studies, his methodology provides a useful scaffold for establishing a discourse centered around design as a mode of acting in the world and as a mode of goods and service production that affects individuals and groups on a number of levels. Although Foucault's earlier work put more emphasis on passive subject formation through dominant power-relations, as is the case in his example of the panopticon, it is necessary to consider his later work which attributed more agency to the subject in the processes of its own formation. Such subjectivation processes are integral to current problems

of modern urban developments. The centrality of governing mechanisms be it in cities, work, or general organization of life, is epitomized by Foucault's concept of biopower. By this term he means "the set of mechanisms through which the basic biological features of the human species became the object of a political strategy, of a general strategy of power."² Put another way, governmentality, the organized practices with which subjects are produced to be effectively governed, built on biopower in "modern Western societies took on board the fundamental biological fact that human beings are a species"³ with certain characteristic qualities.

In modern Smart Cities as I will argue, biopolitics, working on the basis of biopower alone, can no longer provide a full set of answers for the kind of public/private politics embedded in urban design today. What seems to become increasingly important to government is a move away from targeting people as biological entities and towards a politics based on the representations of social behavior as large data clusters. The virtual individual is purely representational. Its reality consists only of categorized behaviors that appear as data sets upon which this representation is assembled and which ultimately constitute individuals as behavioral patterns.⁴ In smart cities it is the design itself, the very instrumentation of architecture which enables data about the city's population and environment to be gathered. In short, the information we produce through our interaction with the instrumented space becomes intelligible as behavior only through its representation as established patterns. This phenomenon is especially apparent in Smart and Ubiquitous Cities, one of which I will elaborate on as a case study. These urban developments are constructed primarily on the basis of an economic rationality using governing mechanisms that rely on instrumented spaces with pervasive networks of sensors and electronic services throughout the city. The principles of government, termed algorithmic regulation, are based on availability and representability of vast amounts of information produced by the design of both computing network and physical city. Underlying such governing principles seems to be a technological positivism that places perhaps undue trust in the accuracy of data as well as in

the devices which gather it.⁵ This suggests a deep underlying shift regarding what is actually governed. Instead of messy physical causes, there are discrete virtual effects. Commenting on large scale algorithmic regulation, Evgeny Morozov argues that “shifting the focus of regulation from reining in institutional and corporate malfeasance to perpetual electronic guidance of individuals”⁶ ignores many of the underlying issues that created individual and social problems in the first place. He reminds us that an “imperative to evaluate and demonstrate ‘results’ and ‘effects’ already presupposes that the goal of policy is the optimisation [sic.] of efficiency.”⁷ A government which is so preoccupied with looking for effects instead of causes, as is the case of Smart and Ubiquitous cities, operates on a new understanding of politics. I will argue that it represents a distinct shift from the biopolitical paradigm.

HOMO ECONOMICUS –THE DESIGNED SUBJECT

While Foucault emphasizes the structural configuration of space in connection with the system of thought through which it came into being, he did not concern himself very much with the concept of design in the sense that it is understood today. Design as a structure of thinking and making, acting and reflecting, constitutes a mode of acting in the world. It is an action that is inherently future oriented, in that it points to a better future which the product is designed to help bring about. This future is presented as intrinsically superior, more desirable⁸ than anything existing today.

Design as a system of creation and planning geared toward constant innovation and competition in an increasingly globalized market, expanded in importance in the early to mid 20th century.⁹ Today, its generalization beyond material production seems to have ballooned. Guy Julier traces design’s increasing relevance for political economy to the neoliberal changes of the Reagan Thatcher era.¹⁰ Increasingly today, design is co-opted by economic rhetoric in political discourse. Any investigation of design in large commercial ventures cannot function

without acknowledging underlying neoliberal assumption. Again, Foucault’s account of neoliberal governmentality is particularly valuable for design studies. In *The Birth of Biopolitics*, he outlines the production of a new kind of subject emblematic to neoliberalism. Within neoliberal economic rationality “the basic element to be deciphered by economic analysis is not so much the individual, or processes and mechanisms, but enterprises.”¹¹ He asserts that “the man of consumption, insofar as he consumes, is a producer.”¹² This producer, he maintains, “produces his own satisfaction.”¹³ Foucault suggests to understand consumption in this complex behavior-mechanism “as an enterprise activity by which the individual [...] will produce something that will be his own satisfaction.”¹⁴ This cyclical and reciprocally influential consuming-producing behavior then creates a particular type of subject. Foucault’s neoliberal subject is a “return of the homo oeconomicus.”¹⁶ However this economic man, he argues, is constructed as an “entrepreneur of himself, being for himself his own capital, being for himself his own producer.”¹⁷ This entrepreneurial consumer/producer subject, is central for the analysis of subjectivation within the context of the designed space. The centrality of the homo oeconomicus becomes apparent when we acknowledge the effects of designed things, space, and images on subjectivity.

For this purpose, I want to situate the economic man within an environment that is entirely artificial. The task of design studies is to highlight the artificiality of the world¹⁸ and reframe man as part of artifice. In the artificial world, insofar as it is constituted by the various practices of design, as the world of the neoliberal homo oeconomicus, constant innovation and competition represent

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a primary mode of address. Modern design and its link to the market, especially as it relates to planned obsolescence, seems to be intricately interwoven with the emergence of the this economic man. Indeed, design in its interactions with us today works hard to maintain the entrepreneurial subject. Perhaps it would be prudent then, to understand objects of design as parts of larger governmental mechanisms. It is also design's fundamental historic tie to the economy, its connection to efficiency, competition, effective problem solving as well as affective impact on individuals which make it a powerful but also loaded term.

PANOPTIC PROPOSITIONS

Having sketched out the subject central to this analysis, I want to now turn to the problem of the built environment inherent in the Foucaultian notion of biopower. Before tracing changes in governmentality constitutive of algorithmic regulation, the interfaces between designed urban space and people need to be explored. The question that design studies has to ask is how we become the subjects we are, both actively and passively. Foucault here, provides design and architecture scholars with some invaluable tools for this project. In *Discipline and Punish* his exemplary analysis of such a complex within the penal system of the 19th century, his discussion of panopticism, should be of particular interest. While panopticism primarily focuses on coercive practices disregarding individuals' own contribution to subject formation, it is nonetheless a powerful example for the embeddedness of biopolitical mechanisms in the built environment.

The concept of the Panopticon was first developed by Jeremy Bentham as an efficient and economic model for penal complexes (although it was never actually implemented) but he quickly imagined its importance beyond the penal system. Here the "architectural apparatus should be a machine for creating and sustaining a power relations independent of the person who exercises it."¹⁹ The designed space then is "an important mechanism, for it automatizes and disindividualizes power."²⁰ This power "has its principle not so much in a person as

in a certain concerted distribution of bodies, surfaces, lights, gazes and arrangement whose internal mechanisms produce the relation in which individuals are caught up.”²¹ It is therefore the existence of human bodies within architectural space, the physical interaction of bodies with the architectural environment that ensures the transmission of power. The idea of the panopticon was then not only applicable for penal institutions but Bentham eventually conceptualized it as “a great new instrument of government ...; its great excellence consists in the great strength it is capable of giving to *any* institution it may be thought proper to apply it to.”²² Panopticism as an idea of government arose in a specific economic rationality, the same rationality that first gave rise to the economic man (although the liberal homo oeconomicus became a dramatically new structure in neoliberalism). This link to economics is of crucial importance. The original economic man, unlike its neoliberal successor was governed by interest. It was then the government’s task to create an economic subject whose self-interests were aligned with those of the state. Bentham’s model of governmental apparatuses in the Panopticon presented just the tool needed to create such subjects.

*The Panopticon [...] has a role of amplification; although it arranges power, although it is intended to make it more economic and more effective, it does so not for power itself, nor for the immediate salvation of a threatened society: its aims is to strengthen the social forces – to increase population, to develop the economy, spread education, raise the level of public mortality; to increase and multiply.*²³

Here it is not power for power’s sake that is at work, but power for the social good, power for the good of the nation state, in an organized effort to make its government more effective. It is of course not only the built environment that adheres to these principles of political economy. It is the embedded economic rationality that makes the designed space itself and its mode of subject production intelligible. Therefore, when design studies looks toward modern smart cities and the existence of modern subjects within them, it is an economic rationality that should determine the terms of analysis. If we are trying to understand the connection of power to design as embedded in the world-as-artifice then economics cannot be neglected. Foucault’s problematization of

population²⁴ in the context of the Panopticon also enables an interesting comparison to populations in smart cities. Population today presents an intricate problem for effective government. The solution, as some argue,²⁵ is a decentralization of government in favor of smart communities, which are able to tailor management to local needs through the integration of large scale and ubiquitous computing and sensor networks, a measure of smart cities' effectiveness. Local factors here correspond to global trends and with the help of technology as the mediator, local communities are believed to become capable of harnessing global forces.²⁶

Not unlike the panopticon, a governmental model designed to optimize and align individual interest, smart cities today align their inhabitants' mode of life along a similarly economic axis. On the other hand, in contrast to algorithmic regulation, panopticism did not necessarily rely on individuality and the entrepreneurial form as the basis for government. It targeted a population, whereas today government targets individual behavior. It is precisely this neoliberal economic man, the homo oeconomicus who becomes the object of such cities. The very structure of urban space—the design of cities, neighborhoods and technological systems, interfacing with the city's inhabitants—is built to produce, maintain, and legitimize the economic man. In that such developments are always geared toward producing a certain future, it is necessary to show these propositions and trace the actors within them. Often, these are corporate propositions, as the spaces are built by private corporations, and address the governmental apparatus itself. The propositional character of the design itself has to be acknowledged and problematized. To recapitulate, design as an indicator for the

future and as the means by which such a future is to be realized, is innately concerned with creating the conditions of possibility for the proposed future. What is at issue is more than the corporate dreams of the future.²⁷ It is therefore crucial to make visible the economic and social assumption embedded in Smart Cities.

THE SMARTNESS OF CITIES

The concept of smart cities is a relatively new one and does not adhere to one unified definition. It has been described in exclusively economic terms as a spatial organization principle to optimize human and social capital and create competitive urban developments.²⁸ On the other hand, smart cities are also defined by a specific way of achieving local and global competitiveness, which more closely resembles the popular notion of "smart" in our current cultural imaginary (smart phone, smart lighting, smart clothing etc.) that is, the integration of information technology into everyday life and activities. Smart cities also ensure ecological and economic sustainability in an efficient and intelligent manner, through linking services and allowing for maximum interconnectedness.²⁹ Smart cities then, become economically and socially competitive because they do not leave their management to humans, but turn to technology and design to optimize human, social, and economic capital. These urban developments function on a number of major neoliberal premises, such as competitiveness, increase in human and social capital, and efficiency, that is, a political economy. Their spatial organization is geared toward the most effective creation of the competitive homo oeconomicus.³⁰ It is both their physical design and the design of their computing networks that enable local governance of individuals on the basis of data regimes.

The economic rationality underlying both the neoliberal subject and smart cities forms the basis of their intelligibility. The principles of efficiency, effectiveness, and competitiveness in conjunction with big data propose a new reality, which is subsequently created by the actual configuration of government within the designed environment. Does the concept of biopower still

remain applicable in such realities? This question can only be answered if we take the different modes of interaction between design and individuals as the basis of this inquiry. Ascertaining if biopower will still be fundamentally relevant in the future to the concept of population and its relationship to the assemblages of material configuration, people, and virtual systems may point to a different principle. There may be another, more dramatic change underlying the transition of governmentality in design's projections of the future. The question design studies will have to answer is the following: Does the design of the city alone suffice to manage its inhabitants in the most efficient and effective way? I will limit myself here to the most important services available in smart cities.

THE UBIQUITY OF DATA

Smart cities and smart communities are becoming increasingly more prevalent as urban models.³¹ The degree to which these cities and communities are instrumented varies however. New Songdo City, in South Korea is such a smart community. In contrast to comparable developments in the US, Brazil, or China it is called a ubiquitous city or U-city.³² The term U-City denotes its reliance on an all-pervasive ubiquitous computing system that both provides services and information but also gathers data on a large scale through sensors that are distributed throughout the city. Songdo is a new urban development built from scratch on land claimed from the eastern coast of South Korea on the northern shores of the Yellow Sea. As a city built from the ground up within only a few years, it does not have any of the historical appendages older cities struggle with.³³ This smart city's competitiveness and efficiency results from its innovative management apparatus. The city is no longer exclusively or even principally managed by people, as human error often reduces efficiency. Instead, most services and interactions in smart cities are done on the basis of the city's very instrumentation. That is, the city's spatial and human organization revolves around the representation of the city's population in vast data sets which are gathered by sensors throughout the city. Population here is a loaded term and needs to be contrasted with Foucault's conception of it.³⁴

The ubiquitous system is a large-scale informational and sensorial system that pervades the city in both public spaces and private homes. While the technology by the city's intended completion in 2020 will already be outdated, what is novel in comparison to other smart communities which have been retrofitted with IT systems is the network's presence everywhere. All buildings are integrated into and equipped with it. The stated purpose of this system is not only to provide internet access to businesses and residents but also to make the city economically and ecologically viable. The system is designed to direct traffic based on the amount of cars registered at certain times of day, gather and distribute weather data, and manage sewage and similarly invisible services. This however, is not all. Most apartments are outfitted with biometric sensors which are not only linked to the HVAC (heat, ventilation, and air-conditioning) system. The city's government planned to link the system to hospitals and insurance companies,³⁵ calling ambulances when needed, sync medical records from doctor's offices, and monitor the overall health of the apartment's occupant.

While surveillance is certainly an important part of smart cities, in most cases the design of the sensors and interfaces is specifically configured to obscure the presence of a technological gaze, in contrast to the very visible and constantly felt human gaze of the panopticon. This is an important difference as it leads precisely to the governing of effects rather than causes, something Morozov attributes to an overarching "aim to reprogramme [sic.] the state and make it feedback-friendly."³⁶ In other words, the existence of data-recording devices in everyday life is not in all cases directly visible. Data gathering often happens surreptitiously. Its generation is not only relatively easy through services provided by the city—in the form of a variety of services or online interaction—but also by means of especially engineered sensors embedded in the urban environment and calibrated to record specific interactions within and outside of the building's architecture. The sensors' invisibility has important consequences for biopower and subjectivation. In practice, Songdo's ubiquitous system is touted as a special appeal of the city, evidenced by general information about sensors and management being available online.

BIG DATA–SPEAKING THE TRUTH ABOUT SMARTNESS

To understand why smart cities rely on big data as the foundation for efficiency in government, I want to turn to Foucault once more. The method I am concerned with draws upon demonstrating that “establishing intelligibility of reality consists in showing its possibility.”³⁷ That is to say, if the goal is to show the proposition of a new form of government based on big data then what needs to be done is to show that it is possible for this new form of governmentality, one that supplants biopolitics, to exist and that it is to be found precisely in design. Only then can design studies legitimately engage philosophy on the basis of the political importance of design. Foucault is less concerned with “the description of insular and autonomous systems of truth,”³⁸ but instead he is engaged in “undertaking the history of regimes of veridiction – and not the history of truth, the history of error, or the history of ideology,”³⁹ so that one can make sense of historical development and understand on what basis and to what end decisions were made. In other words, Foucault is concerned with making certain discourses intelligible through illuminating the conditions necessary for it to become established. He describes how these regimes of veridiction intersected with the law, that is he demonstrates their legality as bases for government by showing that “the regime of veridiction, in fact, is not a law (*loi*) of truth, [but] the set of rules enabling one to establish which statements in a given discourse can be described as true or false.”⁴⁰ In this context, Foucault understands economic rationality, which under neoliberalism allowed the subsumption of the state under the header of the market, as a regime of veridiction. Alongside and indeed very much on the basis of this economic rationality, big data itself can be understood as a regime of veridiction. The assumption of accuracy and representativeness, for government forms the basis for a new mode of governmentality.

As I have argued, the underlying organization principle in such urban developments is an economic one. The system of truth according to which good government, that is, effective, efficient, and sustainable govern-

ment, is judged is of course ‘big data’. ‘Big data’ needs to be understood as representing a range of human behaviors, human-artifice interaction, and environmental conditions. The element of veridiction which is attributed to big data amounts to a problem of representation. In other words, big data in its representativeness of the world is taken as truth, as truth about human behavior, about the conditions of the city’s systems, and the sometimes adversary environment outside of the city. Big data, algorithmic analysis, and parametric design insofar as they truly and accurately present real-world conditions is presumed to be so effective because they enable real-time responses by the system itself.⁴¹ That means potentially costly lags between the occurrence of a problem and its elimination can be dramatically reduced. Songdo presents a good example for the phenomenon of propositional cities in which government relies on the existence of a smart system that can both gather and analyze information from people and the environment. This system here presents the condition for a potential new form of governmentality, something which might be called data-politics.

A SHORT KOREAN EPISODE

In order to understand Songdo’s existence in context, its history should be given some attention. Its inception dates back to the late 1980s when it was designed to bring in foreign investment during South Korea’s technological upswing. Then presidential candidate Tae-Woo Roh campaigned with the promise to expand Korean economic incline through the building of a new international business hub close to South Korea’s capital Seoul. Governmental struggles and economic problems delayed this project for more than ten years. It was taken up again in the early 2000s during a period of economic growth. Today Songdo is located in the Incheon Free Economic Zone (hereafter IFEZ), which was set up in 2003 expressly for the purpose of allowing for the influx of foreign companies and investment.⁴²

Songdo was to be its centerpiece, a North Asian business hub designed to represent South Korea's centrality in the Pan-Asian and international market. Within IFEZ, government is limited to providing the ideal conditions for foreign investment and strong market expansion from which the country hopes it will ultimately profit. The government's task, aside from designating this special zone which functions to a large degree independent from the central governmental apparatus, is financing and subsidizing investments. These conditions should have ideally made it appealing for foreign corporations to set up their business in Songdo, however, the dream of this economic utopia, the premiere North-East Asian economic metropolis, has not yet proven realistic. Songdo's utopic future was envisioned on more than one level. Being South Korea's beautifully designed face to the global market, it was developed as a technologically advanced space, a manifestation of South Korea's technical and technological prowess. It was also designed as a green city, which operates at a third of the carbon emissions of normal cities, utilizing sustainable materials and systems built to reduce overall carbon footprint. This seems particularly ironic considering that it is built on land that was claimed from precious coastal wetlands, land that represents the displacement and extinction of a number of red-listed species.

CORPORATE PROPOSITIONS

Songdo's construction adhered to strict organization of its geographic and information spaces. At its center is the business district, representing the centrality of the economy in this urban venture. The large park designed to imitate New York's Central Park,⁴³ conveys a sense of attention to ecological and social sustainability, a feature that is touted as one of the prime advantages of this city. While its geographic configuration is novel, what is more relevant to the question of data-power is the design of the computing system and concomitant new proposal for government. What is crucial at this point is to highlight the propositional content of Songdo's network and governance as a smart city. This proposition, while desired by IFEZ, is largely private, in that the system-design is entirely private property. During Songdo's development, IFEZ

partnered with Cisco Systems and a few other large American private corporations to build the city proper and implement its ubiquitous computing network as its prime feature. Cisco was contracted to develop this system, which for the corporation represents merely a test-scenario, a phenomenon Orin Halpern called 'test-bed urbanism'.⁴⁴ This technology along with the data it produces is therefore private property and while Cisco partnered with public agencies on the implementation of governing mechanisms, the question of ownership and property remains. That means that data-politics, insofar as they can be shown to exist, are a private proposal for a governmental technology, one that attempts to redress the private/public dichotomy and frames it as increasingly obsolete for government.

While South Korea seems an ideal test ground for such propositional cities, the exact location on the planet is of little importance for Cisco or other participating corporations, as Haperms concept of test-bed urbanism would attest to. What matters is the ability to work at least partially outside of established federal law in order to make the kind of economic and political propositions I am concerned with. Thus, the IFEZ, as a free economic zone with a high degree of independence from South Korean federal government, creates the perfect conditions for test-bed urbanism. For Cisco this is a prime opportunity to develop the capacities to support the implementation of city-wide smart and ubiquitous systems. Primarily, what Cisco markets and sell is the possibility of new management strategies, new methods to organize the population in a city, new ways of surveillance, and also new methods of delivering government. The ubiquitous system promises new methods of certainty about security, crime management, and even provides feedback as to where additional infrastructure is needed. For Cisco this means not only potentially greater revenue, but most importantly the possibility of becoming the leader for a new technological age. The company is hoping to become the leader in what they termed Smart + Connected Communities (S+CC), as part of its rebranding and diversification program. Such systems do not require human oversight,⁴⁵ as most services function largely autonomously. The question becomes, what does this mean for design?

In order to ensure better cooperation between business and the IFEZ authority, in terms of system build-out, data management, and financing, Songdo became the site for a highly representative public-private cooperation between the local government, Cisco and a number of other companies.⁴⁶ For that purpose a Public Private Cooperation Company (PPCC) was formed.⁴⁷ In essence, this company has committed itself to the efficient delivery of what it calls U-city services, among which are public services like disaster control, public safety, environmental management, along with traffic and public information. Among the private services the PPCC offers are building automation, operation and management, advertisements and information, and internet connectivity. Aside from providing services, the PPCC, like any corporation, is also trying to create capital.⁴⁸ Local government in smart cities needs to be able to manage a number of services. Along with quotidian urban needs like traffic light regulation and optimized metro systems, there are also a number of new concepts like e-governance, e-participation, and e-democracy.⁴⁹ E-governance is utilizing electronic services to improve communications between the government and citizen-customers,⁵⁰ government and the market, and among government entities. In its ideal form, it increases transparency and access while it purports to reduce inequality. In many cases this functions precisely on the basis of Public-Private-Partnerships.

This raises the question of where the information is stored, who has access to it, and to what ends will it be used. If it is privately held, then what is done with it? These are serious issues that will determine the course of new city organization, spatial or informational. The answers will have consequences

for new governmental apparatuses as well as technologies of government. To what degree will private organizations be embedded in government? Will government on a local level be handled predominantly privately? The constant shift toward privatization in judicial, military, as well as security apparatuses seems to suggest that Cisco's idea of government through technology handled largely by corporations is not all that far off. A new governmental technology arising out of the same economic rationality that has created the neoliberal homo oeconomicus as a self-entrepreneur and that has produced cities in which the very spatial design as well as the design of interfaces and services, appears to be a pressing matter. Relying on the designed world and its interrelation with human subjects, this new governmentality is indeed intricately interwoven with the various practices and products of design. The nature of the relationship between the artificial environment and people, the mode of their interaction, produces the informational foundation, in the form of big data, that presents the conditions of possibility for this new governmentality.

THE INEQUALITY OF SMARTNESS

In many respects, developments like Songdo dramatically raise the standard of living of their inhabitants. Insofar as that is the case, they seem to be fairly innocuous cultural phenomena. Smart cities are always distinctly heterotopic,⁵¹ in that one of their main goals is to efficiently increase human capital. Alongside structuring citizens such that their human and social capital is optimized, this also necessitates eliminating those elements that would lower overall human capital. In other words, smart cities like Songdo aim to keep out those individuals from lower socio-economic strata. While this is not only a phenomenon of smart cities, it does become particularly evident there. In the case of Songdo, the solution is simple. The apartments and condos are sold or rented at such high prices that the entire city is essentially a high priced suburb of Seoul for affluent Koreans. The city is connected to the mainland over bridges equipped with cameras. That way, exclusivity can be assured. The problem this raises is politically complex. If big data is proposed as the

basis for government and only the top 5% of the population have sufficient access to the data-gathering apparatus, then the whole system is steeped in economic inequality. The result, in essence, is a systematic design of policy-making and governance registering only those above a certain economic level. As long as this type of government is restricted to primarily market-cities the problem seems contained. However, the design propositions reach farther than that. As long as data-power remains a viable model for future government, the inherently neoliberal assumptions embedded in these designs make their concepts at best ethically questionable. If community governance is built on the principle of smart cities as in the case of Songdo, then we have to start reckoning with the inequality of such designs and consider it on the basis of competition as a neoliberal principle. Designing cities with the explicit purpose to increase human and social capital, results in urban environments whose very structure, the very organization, creates economic subjects as self-entrepreneurs, excluding those who have not properly internalized entrepreneurial values.

The latent inequality that permeates smart city configuration goes beyond organizing citizens geographically in accordance to their human and social capital. Even e-governance, a system of services which have been touted as a possible solution for governmental corruption⁵² seem to have an inherent segregational component.⁵³ This social segregation comes as a result of competition and competitiveness, which is grounded in the necessity of inequality for competition. Thus in smart cities we can precisely observe Foucault's comment on American neo-liberalism as a "generalization of the economic form of the market [...] throughout the social body and including the whole social system."⁵⁴ In smart cities, the market spans everything from homes to parks, from water treatment facilities to schools. We should therefore start addressing design from this perspective.

FROM BIOWPOWER TO DATA-POWER

I have tried to lay out the method by which design studies as a nascent academic field can and should open up and contribute to

a discourse around the world-as-artifice. In tracing subjectivating mechanisms in the built environment, I tried to give an example of the kind of analyses design studies can provide. I believe it is crucial to acknowledge the underlying rationality that enables design as both a set of practices and their products to become intelligible today. As a marker of relevance, I have traced the component of veridiction within the phenomenon of smart cities. What emerged was the existence of big data as a regime of veridiction which in turn points to larger changes in technologies of government and subjectification. As a field inherently concerned with the artificial, its creation, and its influence on culture, design studies is perfectly positioned to ask a number of important questions which should be answered in conjunction with other disciplines such as philosophy or sociology. What changes in the construction of our very understanding of subjectivity in the artificial world if we are addressed by design only as behavioral entities? Does 'big data,' as a regime of veridiction and its concomitant form of governmentality, present a moment of departure from the concepts of population, biopolitics, and biopower that Foucault introduced?

Still, it is not the seemingly Orwellian nature or Huxleyan aftertaste of such developments that should make us aware of data-politics. Rather what is at issue here, is the ever more prevalent question of who controls this information and to what end. The ability to source and manage data ubiquitously and unobtrusively is a relatively new development.⁵⁵ While warnings have been voiced about the need for critical interaction with the digital gaze and digital reductionism,⁵⁶ what appears problematic and difficult to grasp in the case of Songdo is less the inevitability of the situation and more the principles of its implementation. The fact of the matter is that technology and design will become more pervasive. Culture is not a static force but an incredibly dynamic assemblage. It is not the fact that large corporations are suggesting new governmental practices, new management proposals, and new ways of representing large groups of people. Propositional city designs such as Songdo appear like a logical next step in a political economy that values competition seemingly above all else. If governmental practices are concerned with balancing

cost of government, creating cost-effective ways of managing a population, and shaping individuals that manage themselves, then proposals such as Songdo seem like a good idea. The question should be to what degree do these practices impact the people towards whom they are directed? Do these practices enable or preclude criticism to a larger degree than previous governmental paradigms? What seems truly problematic about data-power, is that, at least in the foreseeable future, because these ubiquitous city proposals are primarily geared towards affluent social strata, only those who have access to the big-data production apparatus are represented in its analysis. If this data is indeed used to make more sweeping policy decisions, then those policies only consider the behavior of the affluent population and completely disregard those social strata that cannot afford such spaces. This does not happen according to any sinister back-room deal or evil scheme but results from the very economic principles of spatial and technological organization. It is the systemic and unquestioned inequality of neoliberal design that present data-politics' greatest hurdle.

John Protevi describes as the ultimate goal of Foucault's historically realist analysis to "provide tools by which the governed can understand the rationality that informs the way they are governed and thereby resist intolerable governance."⁵⁷ It is not so much the point then, to critique technological innovations because they evoke dystopian pop-culture fears, but to make them historically intelligible for the present. This should enable people to understand themselves as subjects of a certain kind. Should this result in a rejection of the apparatuses that create them the question that must necessarily follow is: What ought to replace them? But it may just as well end in an acceptance of the utopia they propose. In summation, it is not that cities like Songdo reduce our humanity or somehow make our lives worse. In many ways they increase standard of living. What is questionable is the deeply embedded inequality that comes with such systems, and smart cities in general. If design studies can problematize such developments and present them to an established academic and popular audience this new field may be one step further to legitimating itself. As a field which has rarely assumed relevance in the discourse of politics, design today seems to become central to it.

Anke Gründel is a student in the MA Design Studies program at Parsons.