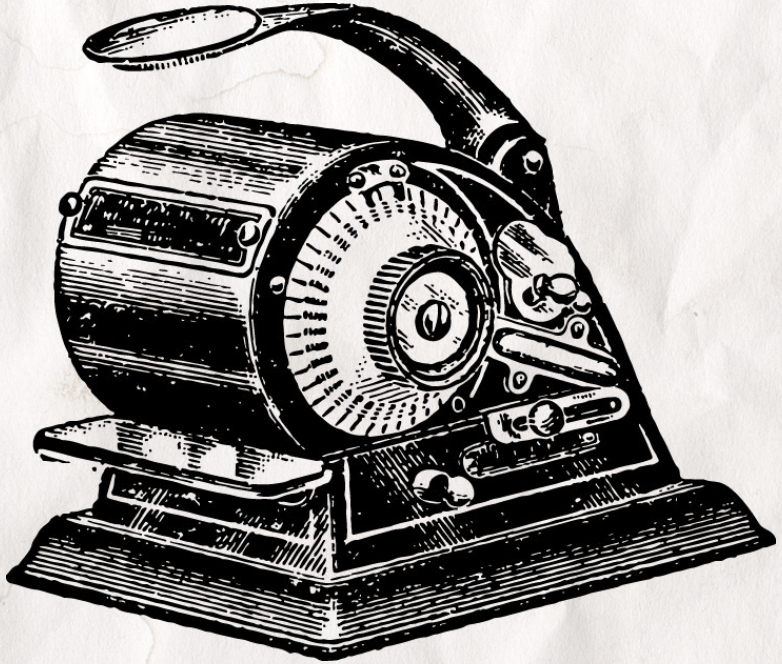
ENGAGING THE DATA MOMENT



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Making space with data

Data politics, statistics and urban governance in Denmark

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DASTS is the primary academic association for STS in Denmark. Its purpose is to develop the quality and breadth of STS research within Denmark, while generating and developing national and international collaboration.

Abstract

In this article we engage with the contemporary data moment by exploring how particular data practices–– consisting of census data and statistics––have become embroiled in the making of urban space and governance in Denmark. By focusing on the controversial case of Danish "ghettos"––a state-sanctioned list of marginalised urban areas––we show how Danish data practices of routinely collecting and aggregating extensive census data have become central to ascribing particular urban neighbourhoods as ghetto areas. These data practices spatialise residential housing areas as problematic and influence Danish urban governance. We explore how new forms of data practices for monitoring urban areas arise, and argue that these practices help to maintain the spatialisation of the "ghetto list". They do so by drawing multiple forms of data together, that visualise and monitor "at risk" areas making them governable and amenable to physical changes. Finally, we show how the state uses data practices to make citizens (and municipalities) accountable; yet, this accountability cuts both ways, as citizens and municipalities also use data to hold the state accountable. We end with a discussion of how our analysis of data practices has implications for how we imagine the scalar hierarchy of the state and the politics of data.

Keywords: urban governance, data politics, state, space, spatialization

Introduction

How should we think about data and the state? In this article we explore how data are used in urban governance in Denmark, focusing on the connection between census data (such as the well-known Danish CPR registers) and the state's ability to make space, that is, to classify or transform particular spaces. Recent studies on the role of data practices in government have argued that these practices perform a crucial role in constituting the people inhabiting various areas as "knowable" and "governable" entities (Cakici et al., 2020). Increasingly advanced metrics and visualisations are considered an important way of making certain areas and connections problematic, commensurable, and thus governable (Espeland and Stevens, 1998; Mennicken and Espeland, 2019). Indeed, citizen data––in terms of government registers containing, for instance, population numbers, economic information (for taxation purposes), or demographic data––have historically been crucial for political and economic attempts at governing subjects. Hacking (1991) has described the period of the early 19th century when numbers and statistics became an increasingly important mode of state governance as an "avalanche of printed numbers." Census data and statistics were gradually absorbed into the bureaucratic machinery conforming to an apparent governance ideal of "information and control" (Hacking, 1982: 280). Nowadays, such citizen or census data are digitised and stored in ways that make them accessible and combinable in new forms. These kinds of data are part of the "techne of government" (Flyverbom et al., 2017), because they enable formal schemes to see with (Scott, 1998) and various visualisations of that which is to be governed (Dean, 2010: 41)[1]

If we want to understand contemporary state governance, we must also understand the data practices on which it builds, that is, practices of data registration, statistics and calculations, along with their politics (Cakici et al., 2020). Drawing on three empirical examples of the Danish state's governance of so-called "ghettos," we explore the crucial role played by data practices in problematising and making certain areas knowable and governable. Theoretically, we draw upon Ferguson and Gupta's (2002) work on the notions of verticality and encompassment in relation to the spatialisation of states. Following this, we argue that Danish data practices are a key part of creating an image of a state that encompasses and sits above its citizens, and that these images are key

[1] The Danish government considers basic data (what is also termed "grunddata") on, e.g., citizens and housing to be crucial for public administration; it argues that these kinds of data are the digital raw material of Denmark (see also www.grunddata.dk).

to governmental authority.

First briefly discuss the history of statistical data after which we describe the theoretical framework for the article. We then proceed to analyse our three examples: the making of the Danish "ghetto list," the creation of local monitoring of marginalised urban areas in Denmark, and lastly the contestation of the data which these practices build upon.

Data, statistics, and classification

How did statistics come to be? As Alain Desrosières (Desrosières, 1991, 1998) has argued, the word "statistics" originated in Germany sometime in the 18th century, and referred to a "science of the state" (Desrosières, 1998: 179; see also Louckx and Vanderstraeten, 2014). It was, intriguingly, not a framework of numbers, nor the system of calculation we know today. Instead it was a framework for ordering (Desrosières, 1998: 326), producing taxonomies, and organising facts (Desrosières, 1991: 200, 1998: 19–20). It was only in the 19th century that the numerical description of the state emerged and, according to Desrosières, it was not until the 20th century that statistics became a series of mathematical techniques that could be applied to any type of data (Desrosières, 1991: 200). In other words, statistics have deep historical roots not just in the "science" of the state, but also in the classificatory and taxonomic practices and criteria that are integral to the constitution of the state itself. More generally, Law (2009b) has argued that statistics are practices that can perform countable populations and other collectives. Thus, collectives can be performed in different ways, depending on the concrete application of statistical methods and, in our vocabulary, depending on specific data practices.

This brief history of statistics may seem esoteric in the light of our "contemporary moment" of big data and advanced algorithms, where new data practices are being promoted. The term big data was promulgated by industry as a way of departing from orthodox uses of data statistics, and it has been leveraged by governments and corporations for various purposes (Laney, 2001; Ruppert et al., 2017; Zikopoulos and Eaton, 2011). Scholars writing about big data sometimes note that the term bears a (historical) resemblance to the big data sets produced by academics and state governments, such as the national census, or the historical relationship between statistics, numbers, and the advent of the modern state. For example, Beer (2016: 2), stresses that our contemporary big data moment does not represent a historical break but rather a continuity with the classificatory practices of the 19th and 20th century. In contrast, Kitchin (2014) argues that the contemporary moment of big data seems to be characterised by a degree of precision, flexibility, volume, velocity, and variety that "older" forms of big data––such as the national census––did not. To remedy these two perspetives we argue, along with Mazotti (2017), that while census data practices might not typically be seen as part of the contemporary moment of big data, advances in computer power, digital visualisation, and data analytics in recent decades influence the use of census data and how governance abilities are imagined (Mazzotti, 2017). Today, census data are digitised, and the practices leveraging these kinds of data are entwined with new analytical modes, which require digital and statistical literacy (see e.g. Danish Transport, Construction and Housing Authority, 2019a). Hence, the use of census data, we argue, cannot easily be, and should not be, separated out from the current data moment. In fact, census data and the ability to make a population countable remains central to contemporary urban governance and the constitution of the state (see also Cakici et al., 2020). Studying the role of census data in current data practices provides important insights into the politics of data, and how data compose problems and is generative of new relations of power at different scales (Ruppert et al., 2017: 2).

Making space: Verticality, encompassment and data politics

In this section, we turn to Ferguson and Gupta's work on the spatialisation of states (2002). Building on prior studies of the social

construction of space, for instance studies in social geography of how urban space is shaped and experienced (Massey, 1994), Ferguson and Gupta (2002) question not only how the state constructs social and economic space but also how the "state itself is spatialised" (Ferguson and Gupta, 2002: 997). In doing so, they treat the state not as a spatial container, but as "bundles of practices" which are themselves a form of social organisation that compete with other social organisations in the spatialisation of certain areas. They are particularly interested in deconstructing the common image of the state as something stable, an entity that spatially encompasses territory and sits somehow above other smaller entities (such as communities) (Ferguson and Gupta, 2002: 981). They argue that there are two central images in both popular and academic ideas about the state's spatial properties, namely "verticality" and "encompassment" (Ferguson and Gupta, 2002: 983). Verticality, they posit, is the idea of "[…] the state as an institution somehow 'above' civil society, community, and family" (Ferguson and Gupta, 2002: 983). They argue that the state, cast in this image, becomes an entity exercising its power "top-down" rather than "bottom-up", or in other, more "organic", ways (Ferguson and Gupta, 2002: 983). The concept of encompassment, meanwhile generates an image of the state as a location within which other locations are nested. Here, localities are encompassed by larger entities such as regions, which are again encompassed by even larger entities such as states (Ferguson and Gupta, 2002: 983). Ferguson and Gupta (2002: 983) argue that these metaphors combine to perform an image of the big state which encompasses a series of 'smaller' entities within it––citizens, regions, cities, communities, and so on––in a hierarchical order. Their point is that this idea of vertical encompassment, which elicits the state an entity sitting above a series of other entities (communities, for example) is just that, an idea, a way of talking about and seeing the world rather than a strict representation of an empirical reality (Golub, 2006). As we shall demonstrate in what follows, vertical encompassment is an image as much as a concrete reality, albeit an image that becomes central to the state's making of space. At the same time, it is an image that is not restriced to the idea of the state alone, but also to other geographical qualities of areas, such as social problems.

Routine bureaucratic practices such as data registration are one means by which vertical state encompassment is performed (Ferguson and Gupta, 2002: 984). To illustrate this point briefly, let us consider the example of the Danish Centralised Person Register (which is abbreviated in Danish as CPR). In Denmark, all citizens are assigned a CPR number at birth, a unique signifying number which is used as a sort of entry point to services in Danish society. Thus, visits to the doctor will require one. The patient uses the number to prove their identity, and the doctor uses it to gain access to the citizen's information: their address, age, gender, and so on. Further, Denmark (as with the other Nordic countries) has collected extensive data on its citizens since at least the 19th century, registering births, deaths, disease, social conditions, income, ethnicity, and so on (Thygesen et al., 2011). Coupled with the use of CPR numbers, these registers allow researchers (for example epidemiologists) and the state to draw together very detailed data, and even to link different registers (Pedersen, 2011; Thygesen et al., 2011). The data produced by these registers is, we would argue, a form of census data. This bureaucratic practice produces images of both verticality and encompassment via data. It produces an image of encompassment insofar as this provides the Danish state––as well as regions and local municipalities––with continuous demographic information about their citizens: who lives where, where they move to, how many people are employed, what their income is, and so on. Thus, from these bureaucratic data practices, the Danish state, its regions (Denmark is divided into five geographical regions) and municipalities encompass each other and specific citizens. Municipality X encompasses citizens registered within it, and this municipality is in turn encompassed by region Z, which encompasses other municipalities and other citizens, and so forth. This further produces an image of a scalar hierarchy: the municipality is "above" the citizen, the region is "above" the municipality, and at the top sits the state apparatus, tracking and charting overall developments. We

do not mean to suggest that the state encompasses practically all aspects of its citizens' lives through the CPR system, but that the CPR system is part of how images of encompassment and verticality are performed, and this has implications for how governance becomes ordered. Crucially, these images of the state have effects, as they are part of what legitimates state authority and power.

Following this, governing space through data becomes a matter of sorting out which data are significant or insignificant. This means that governing through data (like all governance) is vested with different interests and is a political matter (Dean, 2010; Aradau and Blanke, 2017). Indeed, as Ruppert et al. (2017: 2) argue, data are entangled with power and politics, both in terms of their collection (who does the counting? what is counted? how is it counted?) and how they are put to use and made to matter. As we shall see in the following sections, power and politics in Denmark clearly play out in the case of ghettos and marginalised urban areas. Instead of considering census data as representing which citizens live where, we follow the performative perspective of STS (e.g. Law, 2009a, 2009b), by claiming that census data perform types of citizens, types of areas, and their various problems. Rather than assuming that these data show the world as it really is, the usage of data to picture the world involves choices that perform certain ideas about space, as we will now go on to explore.

A note on methodology

In light of the above, the approach we are taking in this article is to analyse how these data practices perform images of verticality and encompassment. Empirically, our analysis is based on documents and newspaper articles collected by the first author during his PhD thesis; a multi-sited field study of social work in marginalised housing areas in Denmark undertaken between 2014 and 2017 (Birk, 2017b). The documents and articles pertain to the governance of these areas, and include, for example, the yearly instantiations of the ghetto[2] list and the laws that regulate them. We supplement this material with more recent documents, such as newspaper articles that have explored controversies over the quality of the data used in the governance of these areas. The analysis is also partly based on a series of documents published between 2018 and 2019 by the Danish government that concern the most recent instantiation of the ghetto list. All quotations from policies and similar documents have been translated into English by the authors.

In analysing these documents, we looked for examples of how census data were used for spatialising certain areas and making them knowable and governable. Inspired by the tradition within STS of considering controversies and breakdowns as revealing situations (Latour, 2005), we examined the role of data practices in spatialising certain areas. We present three examples, each of which demonstrates how data practices were constitutive in spatialising residential areas as "ghettos". In our first example, we show how census data are leveraged for making the ghetto list. Our second example illustrates how data practices become crucial in continuing this line of governance as tools for monitoring and governing urban areas at a municipal level. Finally, we show how data practices are contested and how their partiality and politics are revealed.

Example 1: The ghetto list – making and problematising space with data

Our first case is the making of the Danish "ghetto" list. Every year, since 2010, the Danish state has developed and published a list of non-profit housing areas that they classify as "ghettos".

The "ghetto list", as it is called, is thus a list of different geographical

[2] We are aware of the many controversies surrounding the very word "ghetto". In this article, we use the term primarily because this word has become an institutionalized element of Danish politics.

areas in Denmark that qualify as ghettos based on a number of metrics. It works as a tool for regulating and surveilling these supposedly problematic areas, and hence it acts as a spatialising authority. Internationally there is a good deal of sociological discussion on what ghettos actually are (see e.g. Wacquant, 1997, 2016). But in Denmark, the "ghetto"––as the sociologist Schultz Larsen has argued––is a bureaucratic reality upheld by comprehensive and detailed statistics (Schultz Larsen, 2011). The list is the result of years of polarised debates over immigration and moral panic about not-for-profit housing areas supposedly being ghettos, predominantly inhabited by refugees and immigrants (see also Diken, 1998). In 2010, the Danish parliament legislated that the ministry responsible for housing must draw up an annual list of the number of ghettos in the country.

The Danish ghetto legislation has a series of specific criteria that define which areas qualify for this label. First and foremost, this legislation specifies that only areas of public, not-for-profit housing ("alment boligbyggeri") can be considered a ghetto (Ny ghettoliste - Transportministeriet, 2018). Thus, areas of predominantly private housing cannot be labelled ghettos under this law. The remaining criteria, as we show below, pertain to statistics about the amount of residents who have criminal records, or who are for example unemployed.

In 2018, the Danish parliament approved a new instantiation of the law, which distinguishes between the "toughest" ghettos ("hårdt ghettområde"), the ghettos ("ghettområde"), and marginalised housing areas ("udsat boligområde"). A not-for-profit housing area now qualifies as marginalised if it fulfils at least two of the following four criteria, based on two-year averages:

1) More than 40% of residents (age 18-64) are outside the labour market and not in education.
2) More than 3 times the national average of residents have been sentenced for violating Danish crime, weapon or drug laws.
3) More than 60% of residents (age 30-59) have had no education other than obligatory Danish schooling.
4) Excluding unemployed residents, the average income of residents (age 15-64) is less than 55% of the regional average.

For an area to qualify as a ghetto, it needs to fulfil two of the above criteria (thus classifying it as marginalised) and have more than 50% of its residents classifiable as immigrants or descendants of immigrants from "non-Western countries." "Western" here, is a category that only includes people from the USA and Canada, Europe, New Zealand, Australia, and Japan. For an area to be classified as a "tough" ghetto, it must now have featured on the ghetto list for four years in a row. This legislation and, especially, the notion of ghettos, has received a considerable amount of critical attention in Denmark, some from academics, but mainly from local residents and politicians who frequently object to the stigma of having their local area named in such a way. Multiple critiques (e.g. Fallov, 2010; Schultz Larsen, 2011; Wacquant, 2016) have shown that the list makes social problems (such as unemployment) a problem of ethnic minorities. In this sense, it builds upon a nativist and xenophobic element of Danish political discourse, something which is made exceedingly clear by the criterion of being non-Western.

In addition to these critiques, Birk (2017a) has argued that the list provides a common metric that enables comparison between different geographical areas by way of numerical properties, hence making them commensurable and comparable. The list makes the ghetto a decontextualised space; the differences between the local areas disappear, as do their individual histories, their populations, their local politics. Additionally, we stress that statistics and data registers are crucial data practices for making "ghetto spaces" and carving out the geographical boundaries of these areas. This is because numerical criteria (e.g., of unemployment, or criminal records) are only established through data practices. Different ways of measuring or defining criminal records for example, would result in a different count (note that it is not the amount of crime in the areas that is measured, but rather the amount of people who have criminal records––this says nothing, therefore about the actual "criminality" of any given area at a current moment).

The ghetto list itself is an example of how images of encompassment become produced, stabilised, and circulated. This happens via the list's utilisation of registry data which link the lives of citizens, social problems, and marginalised areas. These are then disseminated widely in the press each year when the list is published. This image of encompassment is simultaneously deeply normative; its ranking is based on ostensibly objective data, yet it is used politically so as to focus on particular characteristics (such as one's national background as Western or non-Western).

Furthermore, the ghetto list performs an image of these areas as fully encompassing problematic modes of living, which contrasts of course with the actual and practical lives of those who live in them. People, obviously, rarely spend all of their time in just one place, but the list performs an idea of these problems as encompassed within the ghetto, rather than seeing it in a wider and societal context. This lack of contextualisation comes back to the data the list is based upon. As a data point, the CPR number links people to certain addresses. It does not track where they work, where they go, or how much time they spend in different places; hence, it produces a static idea of what an area is. These data thus produce momentary snapshots of people's lives within very specific parameters. This also has a temporal dimension to it. The list is always based on statistics that, at the time of publication, refer to the previous year. For example, the list that came out in December 2018 was based on data from 2017––thus introducing a temporal lag between the statistics and the classification of the area (Danish Transport, Construction and Housing Authority, 2019b). Similarly, as Schultz Larsen (2018) has argued, these data focus on people (e.g., their employment status) rather than the wider structural context such as the availability of jobs.

Summing up this example, the ghetto list is based on the ongoing automated practice of citizen data registration where data about ethnicity, place of birth, employment, income and residence is registered. Combining these registrations with politically produced criteria for what constitute a problematic area results in the composition of certain areas as spaces with problems in need of political interventions (see also Dikeç, 2007).

Example 2: Using data for top-down interventions

In this section we move closer to some of the practical initiatives that result from the ghetto list. Our central point here is that while the ghetto list, at a basic level, produces an image of encompassment; the local, small-scale monitoring initiatives that result from it produce images of both encompassment and verticality. As we shall see, these initiatives perform images of hierarchy and power and of those who have the right to monitor and intervene. The vertical image is entwined with an image of the kinds of areas that are contained within local municipalities.

*T*he ghetto list poses a problem for Danish municipalities that have a vested interest in not having their housing areas classified as ghettos. Thus, various local initiatives attempt to intervene in these areas, often via the use of different forms of social work (Birk, 2017a, 2018; Fallov and Larsen, 2017). However, because the list is only produced annually, many municipalities and local housing associations have explored more frequent ways of monitoring which of their areas are not just on the list, but "at risk" of being on it. Thus, the Danish National Association of Municipalities ("Kommunernes Landsforening") have over the last five years or so started to promote a monitoring system for marginalised housing areas. This system is called "boligsocial monitorering," a term that roughly translates to "Social Housing Monitoring;" it has been described by the association as a "tool" meant to aid "strategic work" with marginalised areas and to "monitor" the development in these areas (Kommunernes Landsforening, 2015: 3).

The purpose of this tool is to draw together even more census data than the ghetto list and to link them with geographic locations, to monitor continuously areas on the ghetto list and areas considered marginalised or otherwise defined as being at risk.

This tool is intended to use the detailed census data that the Danish municipalities have access to, for example, citizen data (based on

CPR data), employee data, educational data (including data from primary schools, pre-schools, and nurseries), data on disabled and elderly citizens, data on children at risk, and data on municipal finances (Kommunernes Landsforening, n.d.). By combining these with the coding of geographic locations, frequent statistical overviews of marginalised housing areas can be created. The National Association of Municipalities, in their initial report on this topic, noted that more frequent data on marginalised areas can enhance ongoing interventions, improve decisions made by politicians, or monitor political strategies (Kommunernes Landsforening, 2015). At a basic level, as the ghetto list is only published once a year, the tool is described by some municipalities as being able to "ensure more frequent and more updated knowledge compared to the government's annual ghetto list" (Kolding Kommune, 2019b, not paginated).

One municipality describes the purpose of using this form of data-driven monitoring as follows:

> Social Housing Monitoring can thus serve as the basis for a data-based knowledge about Kolding Municipality's residential areas. It can thus be used actively in strategic work with marginalised residential areas. At the same time, up-to-date knowledge about the residents in the different areas can be used to focus specific interventions. (Kolding Kommune, 2019a, not paginated)

What this quotation shows is that monitoring is firstly a continuous performance of an image of encompassment, because the residential areas are named as belonging to this particular municipality. Secondly, and crucially, it also performs verticality, in the sense that this municipality is established as an authority that can use the data for top-down interventions (Ferguson and Gupta, 2002). Monitoring citizens thus becomes a way to construct images of the vertical encompassment of the local.

In these initial considerations of "boligsocial monitorering," we see not just a concern about what types of areas are encompassed in a given municipality, but also about how data are used to establish strategies and practices for interventions. Here, vertical encompassment is both the entanglement of hierarchisation (i.e., who governs whom, and how) and the ascription of (so-called) social problems to particular geographical locations.

This is also evident in one of the key properties of the monitoring system, namely its ability to visualise vulnerable residential areas, as the following figure exemplifies (from Jørgensen, n.d.):

The yellow colour represents areas at risk; the orange represents areas with difficulties and needs; and the red represents areas with specific challenges and needs. In a very obvious manner, this bird's eye view performs an image of vertical encompassment exactly by producing a view from above. The view is not neutral; rather, it performs a hierarchy. Note the many different areas; the image is not meant for the people living in any of the places it shows, nor even for the social workers on the ground. Instead, it is quite literally a top-down view, designed for purposes of comparison and contrast. These data points are in the hands of officials "higher up" the bureaucracy who get access to an overarching vision of the local, to aid in their governance (Ferguson and Gupta, 2002: 988).

This mode of mapping and visualising via colour codes provides a spatialising image that legitimises the authority of the municipality to intervene in those areas, and it evokes an image of vertical encompassment. It not only reasserts which local areas are encompassed within the city of Aarhus; it also produces a view from above of which areas are at risk, and where certain interventions may be needed. Its verticality implies power and hierarchy, and signifies who gets to compare, monitor, and intervene. In this way the tool, via visualisations, becomes a representation of the prioritisation of resources and interventions in certain areas. Paraphrasing Latour (1986), Dean (2010: 41) notes that such visualisations allow politicians and governance practitioners to "think with eyes and hands." Their data practice becomes a way of performing an image of vertical encompassment, whereby certain areas are demarcated, problematised, and contained within the municipality. They further assert their authority by deciding on the need for certain actions. In sum, the authorities have a tool to monitor, compare, strategise, and intervene. Interestingly, these official documents are vague when it comes to this last point. The idea of intervention saturates the documents, but still remains vague. For example, the National Association for Municipalities suggests that Social Housing Monitoring can be used to "prevent" new areas on the ghettolist, or to "initiate" new projects (Nyt projekt om boligsocial monitorering, 2020).

Social Housing Monitoring is a direct continuation of Denmark's "ghetto politics" and is preoccupied with accounting for lives in marginalised areas that are perceived to be, a priori, problematic. But at the same time, this monitoring has a paradoxical relationship with the ghetto list; while the purpose of the monitoring tool seems to be, at least implicitly, to avoid having more areas classified as ghettos, the system has been created because of the ghetto list and employs the same logic and many of the same types of data (but at different scales and temporalities). At the same time, it is also a type of protest, as it is part of an attempt to avoid (and even escape) the stigma of the list.

To put it another way, the municipalities try to represent what is happening (e.g., in terms of education, occupation, crime, and so on) in a certain area and how it is impacting life within this area. This illustrates a "jumping" in "scales" (Ferguson and Gupta, 2002: 996)), where the state is not the only authority. Instead, the local municipalities perform an image of vertical encompassment of the different areas through advancing data practices which integrate visualisations with traditional census data.

Example 3: Contesting space with data

As we have seen, detailed CPR data––which we consider a form of census data––have spatialising properties and are crucial to the making of the ghetto list and the continuing practices whereby municipalities monitor and intervene in marginalised areas. As many interventions aim to make local residents and communities responsible for their areas (Birk, 2018), these data points contribute to making citizens accountable for the areas they live in. Yet the state and municipal claims to defining these areas can be contested (Ferguson and Gupta, 2002: 988). In the case we describe here, such authority was contested via data––about the educational backgrounds of local residents––which was not part of Danish registers.

In 2017, Fagbladet Boligen, a Danish housing magazine, published an article about the ghetto list. It focused on the educational level of residents in the areas that were featured (Nielsen, 2017). The educational criteria for inclusion on the ghetto list is based on the percentage of residents (at the time, more than 50%) that do not have further education beyond the state's obligatory schooling––or its equivalent. However, exactly because many immigrants live in these areas––by definition people who have not been part of Danish data registration practices for large parts of their lives––their educations had not been registered. There were, at the time, 177,000 immigrants whose education had not been registered (e.g., because they had completed their degrees in other countries), and so their educational achievements had not been recorded in Denmark's data registers. Statistics Denmark––the central, national statistics authority, and the agency providing the data

for most of these calculations––had attempted to track the educational achievements of this group. They collected data from 65,000 people and used them to estimate the education level of the entire group. With the updated figures, the educational level in areas on the ghetto list were significantly higher. This is the crucial aspect of this example: if the list had been updated to reflect this new data (under the criteria of the ghetto list at the time), then the number of areas on the ghetto list would have been halved (Nielsen, 2017).

This new data was politically contested, as several municipalities saw an opportunity to have their areas struck from the list (see for example Nielsen and Hansen, 2017; Overgaard, 2018; Højstrøm, 2018). However, in response, the minister of housing acknowledged the updated data, but stated that using them would "mean a significant reduction in the number of ghettos and because reality has not changed, this would give the wrong impression of development in these areas" (Nielsen and Hansen, 2017, our emphasis, not paginated). The data practices suddenly translated into a controversy about the "realities" of the areas. The minister argued that:

> "[…] we can't just use data uncritically. 63% of the updated data are based on an estimate on the basis of information that are primarily based on self-reporting and are without documentation and less useful for data sets such as the ghetto list" (Sørensen, 2018, not paginated).

This quotation shows that, at first, the minister attempted to question the validity of this new data. But he soon seemed to abandon this strategy in favour of simply bypassing the data. In the ghetto list published later in 2017, a footnote remarked that the law meant that the new data could not be used, and that the ministry would resolve this issue in the list due to be published in December 2018 (Ghettolisten 2017 - Transportministeriet, 2017; Transport,- Bygnings- og Boligministeriet, 2017). This was a rather dubious explanation, as the law at the time did not say anything about what type of data could be used. Indeed, rather than directly challenging the validity of the new education data, the ministry simply changed the criteria for the 2018 list. They were altered so that only education undertaken or otherwise validated in Denmark would count (Danish Transport, Construction and Housing Authority, 2019a). To make up for this tightening, the 50% criteria was adjusted upwards to 60%. This meant that despite fewer educations being recognized, an area now needed more people without education other than obligatory schooling than before, to qualify for the list.

This political contestation raises concerns about the representations of data (i.e., are they accurate enough? Do they accurately reflect the so-called reality of these marginalised areas?). Crucially, the dispute also revealed the relations of accountability that data practices open up. Because the ghetto list is ostensibly meant to be an "objective" tool reflecting reality––as the earlier quotation indicates––it also becomes open to contestation via the very numbers that lent it a veneer of neutrality.

Thus, this controversy can be read as an attempt by the local municipalities and housing associations to use new data to hold the state accountable for the veracity of its lists. In response, the government closed off the controversy by simply adjusting the data practice and tightening the criteria for what types of data would count. It thus became clear that what would not count were people's self-reports of education. The politics inherent in the earlier data practices, which had favorized educations of Western societies, are here formalized in the new metrics. In this manner, the government cemented its position as a spatializing authority: the final arbiter of which data would be allowed to count and which would not in the judgement of what constitutes a ghetto area.

In one sense, the government's explicit rejection of particular data could be interpreted as a move away from data-based politics. However, it is this very rejection that renders such data political, as it makes visible very particular political relations between data and accountability. On the one hand, the government's invocation of a particular law was a technique to delegitimize these new data and evade accountability.

But they were held accountable, nonetheless, even if only partially so. This partiality resided in the fact that they ended up changing the criteria of the ghetto-list, allowing them to close the controversy with relative ease. While this is a slightly complex example, the point is more simple: While data do indeed signal a numerical objectivity and neutrality, they are mobilized for accomplishing certain (political) ends as well. In other words: one may be accountable to data, but such accountability is not given, nor necessary.

Discussion

In the preceding analysis, we have sought to illustrate how census data in conjunction with statistics do not simply account for certain urban areas but partake in making them. This argument has a twofold outcome. Firstly, our analysis contributes to an understanding of how data practices are entwined with the state––who relies on them to make top-down interventions––and secondly, it contributes to an understanding of data politics.

We have seen how both the state and municipalities become an authority, as they define, categorise, and intervene in urban areas (and social problems within them). This scalar operation performs the state as composed of, and concerned with, the lives of residents in certain areas. It also involves the state as, to paraphrase Ferguson and Gupta (2002), "acting from above" concerned with "larger issues." As such, the state performs an image of vertical encompassment––it sits at "the top" whilst simultaneously encompassing all its bureaucratic entities (regions, municipalities) and citizens (Ferguson & Gupta, 2002: 985). The ongoing performance of this image participates in the legitimisation of the state and the establishment of its authority. From this image of vertical encompassment, the state acts as a spatialising authority, which performs spaces in certain ways with certain needs (Ferguson and Gupta, 2002). As our case shows, data practices are a critical part in performing this image of vertical spatiality; they are what is used and relied upon when making decisions about interventions. Census data and statistics become part of (political) data practices that reshape urban space, while simultaneously partaking in assembling the state as an encompassing and accountable actor, acting from above. This argument resonates with, but at the same time moves on from, Ferguson and Gupta (2002, p. 995) who suggest that "states themselves produce spatial and scalar hierarchies", and that these hierarchies are central to the functioning of government on both a local and national scale.

This leads us to a second point that represents an advance from current studies of the politics of data (Aradau and Blanke, 2017; Flyverbom et al., 2017; Ruppert et al., 2017). The state's spatializing authority through data is challenged in example 3, wherein the state settles a matter of dispute by critiquing the ability of the newly available data to describe reality accurately. It later changes its methods of calculation so as to escape their likely ramifications. This is illustrative of how data practices generate new power and accountability relations . The state holds both the local municipalities and the local housing organisations responsible for intervening (locally) in areas classified as ghettos and the municipalities respond to this through local monitoring. While the data underlying the ghetto list come from Statistics Denmark––whose data are to a large extent publicly available for critical scrutiny and contestation by researchers, journalists, and community organisations alike––we see in example 3 that the data behind "boligsocial monitorering" is more opaque. The various municipalities are able to implement their own monitoring systems, drawing together different forms of data and carrying out different kinds of calculations, which may draw on internal and less publicly accessible data and, therefore, conceal certain interests. What our examples crucially illustrate is that the ghetto list and local governance outcomes are a result of the contingent data practices deployed. This is particularly evident in example 3. Data practices mark boundaries between those who are included and excluded by a certain calculation, and those who are allowed to intervene (see also Callon, 2010). These boundaries, and their associated interests, are justified on the grounds of numerical objectivity, but in example 3 a controversy emerges over

the "normative neutrality" of data practices (Hacking, 1991), as the reliability of data are challenged from two sides.

Concluding remarks

We began this article with a question about the relationship between the state and data. What we have shown is that, in the present cases, data and the state (specifically, urban governance in Denmark) are deeply entangled. The data practices we have described are a crucial part of how the state, regions, and even local municipalities construct themselves as authorities over marginalised areas. The modes of counting and calculating that the preponderance of census data allow are, in other words, not just a process of accounting for the population and the places they inhabit, but of making up the population and the places they live. The use of census data by government to produce the ghetto list and by municipalities to monitor these areas performs an image of state, or municipal, vertical encompassment. The availability of such detailed and digitised census data enable particular areas to be defined and categorised as ghettos, and intervened in on that basis. We have argued, therefore, that these data practices are central to the constitution of urban space.

The ghetto list, however, focuses on individual data and suspends the larger structural context in which any housing estate is inevitably embedded. When the state and municipalities use and rely on census data to make top-down interventions, the data are revealed not as neutral descriptions but as enablers and legitimisers of certain kinds of government action. The state and the municipalities constitute themselves as responsible agents who intervene and solve 'problems' in a manner that makes them, and the residents of these areas, accountable to each other. Yet, as became clear in example 3, data practices are not neutral; they can expose the political interests that order certain areas in certain ways. Following Latour (2005: 186), we suggest that the politicians and the practitioners leveraging the data are scaling-up and scaling-down specific problems through their use, simultaneously producing images of verticality and encompassment, moments of contestation, as well as constructing relations of accountability. It is important to mention that these data practices do not have the agency to conjure worlds into being by themselves, but they become a mediating interface between lives in the non-profit housing areas and the state, through which these areas are contained and governed by the state.

In sum, we argue that studying the role of statistics and census data in contemporary governance provides important insights into how data practices are imbued with questions of politics, oppression, exclusion and inclusion. To return to the present case, recent policies mean that areas which have been on the ghetto list for several years in a row must be converted from non-profit housing to private housing (which can only be achieved by selling properties). This means that people who have been living in these areas for decades, who have built their lives and livelihoods there(see e.g. Johansen & Jensen, 2017), are now being moved to other areas. Such governance is highly consequential for people's everyday lives and it results, in part, from the ability of data practices to invoke images of a vertically encompassing state, which can see from above. The data practices that underlie this governance may not, on the face of it, seem as consequential to our contemporary data moment as, for example, new developments in facial recognition algorithms. Yet, these data practices have certain commonalities given that both are oriented towards the transformation of actions into data points, producing governable urban zones and subjects. Moreover, as we argued earlier, exactly because the data practices explored in this article are largely enabled and developed in the context of the current data moment and indeed are consequential for people's lives, there is a need to continue to engage with such practices and their results.

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