Numbers matter! The society of indicators, scores and ratings

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To link to this article: https://doi.org/10.1080/09620214.2019.1668287
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ABSTRACT

The process of quantification is a powerful development shaping many domains of life today. In the area of education, for example, performance measurement, testing and ranking have become common tools of governance. Quantification is not a neutral way of describing society, but a process of valorisation. It has three sociologically relevant effects. Firstly, the availability of quantitative data strengthens social comparisons. Secondly, quantitative measurement of social aspects fosters expanded competition. Thirdly, there is a trend towards increased social hierarchisation because representations such as tables, graphs, lists or scores ultimately transform qualitative differences into quantitative inequalities. This paper unfolds the argument that quantitative ascriptions of status ranks change our order of inequality because things that previously could not be compared with each other are made comparable. Moreover, it asks who bears the power of nomination in the regime of numbers and which forms of contestation might be available.

1. Introduction

This article discusses the process of quantifying aspects of social life and the way in which numbers are used to establish and ascribe social worth. Quantification includes disseminating ratings and rankings, continually establishing new indicators, using screenings and scorings, constantly creating new rating platforms that we encounter in our everyday life, quantifying benchmarks, and new forms of measuring ourselves that provide data on activities and health. In particular, the educational field has experienced an enormous growth in the use of performance data through evaluation schemes, new forms of public management and international testing regimes such as the PISA-study. Educational policy today is linked to economic growth and productivity with a strong emphasis on efficiency and competition for which numbers and performance indicators play a crucial role. Numbers have become the central currency of the ‘governance by indicators’. Sociologically, these numerical representations are...
not merely a reflection of reality. Rather, they provide a way of generating difference by making things distinguishable. The rise of numbers, data and indicators of societal self-observation is often viewed as a way to objectify and rationalise these activities and behaviours, but they themselves are part of a valorisation and value ascription process. They may not create quantitative representations of the social world, but they do re-create them (Espeland & Sauder, 2007) and should therefore be understood as a reality that is *sui generis*.

At the same time, numbers are taking on a kind of social usher function by determining, showing and confirming a social order. Numbers are used to establish not only numerical differences but also systems of worth that rank people or organisations according to better or worse/more or less. Numbers transform qualitative differences into quantitative inequalities. In this article, I argue that when it comes to quantification, we are dealing with the rise of new forms of social ranking that represent an independent system of hierarchisation and classification. Although education is part and parcel of the numberization of society, my paper takes a broader perspective by claiming that society is on the road of data-driven perpetual stock taking and governance, possibly leading towards a ‘metric society’ (Mau, 2019) wherein everything and everybody is rated on the basis of quantitative data and where contestation becomes difficult.

The argument develops in several steps: First, I will characterise the economisation and digitisation processes as key drivers of quantification and then show how different phenomena of data usage can be linked together using the perspective of valuation studies. After that, I argue that numbers allow us to carry out comparisons which also lead to new forms of competition. In the final step, I ask who has the power of nomination in the number regime and how these power holders can be contested, showing how numbers are used as symbolic capital and which effects quantification has on social order.

### 2. Economisation and digitization

Quantification is driven by the growing popularity of concepts such as transparency, accountability and evidence-based evaluation. These are often discussed using the umbrella term ‘economisation’ in which ratings, rankings, indicators and quantified forms of evaluation play a key role. The goal is to expand the knowledge needed for governance by making data available in order to then more effectively steer social events (Power, 1994; Strathern, 2000). This is made possible by the ‘audit society’ (Power, 1994), which lives on reporting, objectives, performance observation and continually created indicators. In the field of education, for example, there is a pervading trend to produce and utilize numbers and statistics, be it test-scores as part of large scale international programmes, evaluation indicators of schools including measurement of outcomes for students, assessments of teacher performance and satisfaction surveys, or ranking
practices. They aim at establishing effective education practice, internal and external accountability and number-based governance notwithstanding problems of measurement validity, potential corruptibility of indicators and misrecognition of central purposes of schools (Lingard, 2013). This implies a shift away from inputs or non-measurable aspects such as teacher qualification or school philosophy. Numbers make schools and whole school systems ‘legible’ for governing (see Scott, 1998) and allow for the observation of better or worse, or improvements or deterioration, upon which policy makers and bureaucrats can base funding decisions. Schools also become ‘legible’ for parents who will make the school choice accordingly and thus force schools to strive for good numbers.

Economisation plays a crucial role in this audit society by putting aside non-economic aspects and strengthening organisational forms, structures and orientations that are derived from perspectives of profitability (Bowerman, Raby, & Humphrey, 2000; Crouch, 2016; Schimank & Volkmann, 2008). The new public management, that is, using private sector management techniques in public administration, therefore leads more or less automatically to an expansion of monitoring and reporting requirements. Public institutions and private companies are also continually expanding the data they collect on citizens, clients or employees to exercise control, address target groups more precisely or meet expectations of transparency. This now also includes areas such as the healthcare system, cultural life or the educational system that have up until the present followed a different logic. The focus on performance, cost-benefit-relations and outcome leads to both a ‘reductionism of criteria’ (Schimank, 2011, p. 11) and a preference for those parameters that can be expressed in numerical form (Crouch, 2016).

The quantification cult is also closely linked to the digitisation process, which appears in very different areas of life and changes them radically. In this process, data have become the most important raw material for the information and knowledge economy, and as ever more elements of society are captured by data, new business fields are arising that can use this information to find clients, determine individuals’ commercial use or direct their decisions. Certainly, it is still possible to remain an outsider or at least stay on the fringes of the digital world and avoid leaving data traces, but this comes at the cost of self-exclusion from relevant communication contexts and networks. The expansive growth of saved data is overwhelming: Estimates suggest that between 2005 and 2020, the digital universe grows by a factor of 300 (Gantz & Reinsel, 2012). Studies assume that at that point in time, the average person will interact with devices that are networked in some way around 5000 times each day, leaving digital traces. It is believed that humankind today generates as much data within two days as in its entire history before 2003 (Leberecht, 2015, p. 14). Everything is becoming smart: cars, homes, fitness centres, friendship networks, and of course
workplaces. People even voluntarily generate personal data on issues like health, mobility and sports activities and make them public (Lupton, 2016). Algorithms, data-mining and data analysis that attempt to make ‘sense’ of the saved information are improving together with data growth. The goal is always to make distinctions – with drastic effects for classification and status ascription processes. Digital status data are becoming ‘distinguishing marks’ (Bourdieu, 1985, p. 21) par excellence.

3. Quantification as valorisation

Masquerading as a process of rationalisation, the cult of numbers has far-reaching consequences and also changes the way in which we construct and understand what is valuable or desirable. Indicators and metric forms of measurement each stand for specific concepts of social value both with regard to what is viewed as relevant and with regard to what society deems or should deem to be valuable and worthy of achieving. In the quantification regime, this kind of data receives great recognition. One only needs to think of the comparative data in the PISA-study, the role of rating scores on commercial evaluation platforms or citation indices in academics. The symbolic power can be seen in the fact that many criteria upon which the rankings or ratings are based are simply accepted and no longer questioned. If they are experienced as appropriate, evident and a matter of course, then important steps toward a naturalisation of social inequality have been taken.

With this background, there have recently been important attempts to look more intensively at how value is created and how grammars of classification are produced (Espeland & Sauder, 2016; Espeland & Stevens, 1998, 2008; Fourcade & Healy, 2013; Heintz, 2010; Lamont, 2012; Mau, 2019; Peetz, Aljets, Meier, & Waibel, 2016; Timmermans & Epstein, 2010). These approaches operate under the label ‘valuation studies’. More narrowly defined, valuation means setting or determining value, but here the term is also understood as a socio-cultural practice of valorisation, that is, filling something with value or ascribing value. From this perspective, there is no prior, neutral value independent of the observer that only needs to be ‘discovered’ or measured. Instead, we are dealing with processes of value ascription and value manifestation. In a programmatic contribution, Doganova et al. (2014) write that valuation ‘denotes (...) any social practice where the value or values of something are established, assessed, negotiated, provoked, maintained, constructed and/or contested’ (p. 87). If value is viewed as something that is socially produced and not something inherent, then the basic premise of analysing such social processes will always be: It could have been different!

Viewed in this way, the language of numbers changes our everyday ideas of value because numbers are in no way neutral. Therefore, quantification should
also be seen as a strategy of re-configuring and re-formatting the world and describing it in a numerical form (Porter, 1994). When using numbers, prior decisions have already been made as to what is to be considered relevant, valuable or authoritative (Espeland & Stevens, 1998; Verran, 2013). Data suggest how things should be seen, thereby systematically excluding other viewpoints – they represent a selective construction of reality. Quantification therefore institutionalises certain ‘orders or worth’ that give us evaluation standards and justifications for how things are to be viewed and assessed. They not only make certain aspects visible (and others invisible), they tell us which activities, achievements or characteristics have a high ‘value’ and which do not, emphasising certain socially dominant normative principles (Boltanski & Chiapello, 2005; Boltanski & Thévenot, 2006). Classification processes such as determining, evaluating and categorising are thus implemented using quantifications.

Developing metric value orders can be termed valorisation, a process in which the objects or people whose value we previously could not or only vaguely quantify can be given a numerical expression. ‘Statistics,’ according to Bettina Heintz (2010), ‘claim to show a reality that is external to the numbers and made visible by them. In fact, however, they are not second versions of an assumed reality but selective constructions that in part create this reality in the first place. The objectivity of numbers is thus not a fact but an ascription’ (p. 170, translation by author). In the status world, numbers not only show value, they also ascribe it. With this perspective, one can view very different phenomena such as university rankings, performance measurements in the professional world, assigning points for hotel personnel’s friendliness, measuring daily steps or publishing mortality rates in hospitals as part of a comprehensive and inter-related syndrome.

4. Comparison, competition, hierarchies

Based on the previous background, I argue that quantifying the social not only represents a specific form of social ascription but also shows effects in three sociologically relevant ways that have previously been given little consideration to. There are three steps, which build upon one another and lead from the fixation with numbers to the creation of new inequalities:

First, by quantifying the social, a new social comparison disposition is created and strengthened based on the ‘magical power’ of numbers. From a social viewpoint, comparisons are always particularly effective and convincing if they leave the level of subjective perceptions and interpretations and are based on objective criteria (or at least criteria that are considered objective). The power of numbers arises primarily because people are more prone to trust what they believe to be hard facts than intuition or hearsay when it comes to social comparisons (Festinger, 1954). Comparisons always assume comparability, and this can and must first be created, in
part socially. It is not a priori or inherent but instead is embedded in social processes of understanding about which comparative operations are appropriate and plausible. Applying numbers is an act done to create commensurability and make large scale comparisons possible (Espeland & Stevens, 2008). As social aspects are quantified, ‘numerical differences’ (Heintz, 2010) gain importance as an unparalleled amount of data is created and collected, allowing for the creation of new comparative relationships. Indicators, measurement tools and standardised systems of observation give these comparisons the appearance of objectivity and fairness. As social aspects are increasingly turned into data, this provides raw material for making social comparisons actually or seemingly objective. Putting qualitative data into numbers can also quickly expand the radius of comparison and even make it global as long as the respective information is available on comparison objects.

Second, the quantifying measurement of social aspects encourages an expansion if not even a universalisation of competition. By transforming qualitative differences into quantitative inequalities and subjecting what was previously disparate and not comparable into a single evaluation scheme to make it comparable, competition is also encouraged. In many areas, it is the practices of quantification that enable competition to be staged – a competition that is carried out with the help of numbers. Because numerical comparisons emphasise difference instead of commonalities and hierarchy instead of equality, they are the key social foundation for pushing through the logic of competition. With data, we can now use more-or-less or better-or-worse comparisons with others in many areas of our social existence that were previously not explicitly accessible to such processes. Expanding competitive systems are dependent on the implementation and subjective adaptation of indicators.

Third, there is a trend towards more social hierarchisation because illustrations like tables, graphics, lists or marks transform qualitative differences into quantitative inequalities. Almost no attention has been paid to the impact this has on the structuring and legitimacy of social inequality. According to the central thesis of this paper, quantifying ascriptions of status ranks change our inequality structure because what was previously incomparable is made comparable and placed in a hierarchical relationship. Numbers describe, create and reproduce status.

5. Power of nomination and the number regime

If quantification changes the mode of social ranking as described, the question must be asked: who has the power to set definitions in the new number regime? Who is the valorisation agent? Who defines the rules according to which the competition for ranks and/or points is carried out? Who has the
‘power of nomination’? By ‘power of nomination’, Bourdieu (1985) refers to the ability to influence and authorise terms and categories as well as perception and representation schemata, giving them a quasi-official character. The term is based on the idea that symbolic forms of representation are not only a reflection of reality but are in the end re-presentations, that is, forms of representation and description that filter reality, provide interpretations and suggest certain ways of reading. Those who exercise this power of nomination make use of certain ‘objectification methods’ (Bourdieu, 1985, p. 20) to push through their interests while at the same time concealing these same interests.

The ‘expansion of the calculative’ (Vormbusch, 2012) is closely linked to a stronger social orientation on efficiency, performance, competition, output and accountability. These are aspects or dimensions of evaluation that previously fell under the category of ‘economisation’, a term used by many scholars as a form of critique (Bourdieu, 2004; Schimank & Volkmann, 2008). If there are no markets that are structured by price signals, then an attempt is made to promote cost awareness and efficiency by creating quasi-markets (Le Grand, 1991; Weiß, 2001). Competition in the areas of education, healthcare, in government agencies or between individuals can only be effectively implemented if objectively measurable and predefined performance parameters are successfully set and then used to determine differences and allow for better-worse comparisons. Whenever someone wants to create or intensify competition outside of markets, comparative data must be available. The usual suspects who are typically considered the backers of economisation have the primary power of nomination here: influential think tanks, lobbying groups, business associations, multinational corporations, financial market actors and political decision-makers who prefer market-oriented solutions and push reform processes in this direction (Mau, 2019). However, they are joined by representatives of typical middle-class professions who also argue for administrative reforms, call for performance ethics or rave about corporate universities. The particular strength of indicator-based governance is that direct interventions are then not absolutely necessary, as these processes affect individuals and institutions by including certain relevance criteria in coding institutional structures and social environments. ‘Government at a distance’ (Miller & Rose, 1990, p. 9) is the motto here, and it gains social impact especially through normative pressure and imitation.

Expert regimes also play a major role in exercising the power of nomination. The ability to represent a certain quantitative standard as legitimate, objectively appropriate and generalisable often depends entirely on the credibility of those who establish or support the standard. ‘Emphatically, performance indicators leverage power via credibility; they do not create power out of thin air’ (Kelly & Simmons, 2014, p. 56). The development of indicators, classifications or assessments is often placed in the hands of experts precisely because there is a great need for credibility. The experts’ credibility is converted into an increase in
legitimacy for the indicators. Today the experts’ power of nomination is by no means restricted to national experts or a few specialists. An international, if not a global, scene has developed of those who define standards and help them gain recognition. For almost every social area, there is an ‘epistemic community’ (Haas, 1992) made up of recognised specialists who share certain (normative, methodological, epistemic) beliefs. They know each other, they are networked with each other, and they are successful in creating consensus even beyond national boundaries for definitions, problems and methods. With their reputation in a certain field and their privileged access to political decision-makers, they are active in agenda-setting and the global diffusion of standards for assessment and evaluation. ‘Epistemic authority’ (Pierson, 1994) means that those who are recognised as professional experts in a field and have a good reputation can also (co)determine which understandings, approaches and classification systems prevail. Systems of indicators are also a key component in establishing international norms or standards against which everyone must then be measured or that can no longer be avoided. This also challenges traditional understandings and puts them under pressure to be justified (Davis, Fisher, Kingsbury, & Merry, 2012; Kelly & Simmons, 2014; Weisband, 2000). International or supranational organisations such as the World Bank, the International Labour Organization, the OECD, the United Nations and the European Union are important actors in this nomination process. They use data as hard facts with soft power.

A particularly clear example of the impact of internationalising expert regimes can be found in the PISA-study, which brought with it a fundamental shift in the power of defining what makes education good. PISA is the OECD’s Programme for International Student Assessment which tests, every three years, 15-year-old students from all over the world in reading, mathematics and science. The PISA-study supplants established and nationally highly varied educational traditions even against the vehement resistance of key representatives. Pedagogical success was defined by the experts of an international consortium, slowly pushing aside alternative criteria and focusing solely on ‘culture-free, general basic competences’ (Münch, 2009, p. 81, translation by author) that only include what is measurable and comparable. Together with the survey experts, the OECD thus became the leader of national educational policies in many countries (Leibfried & Martens, 2008). Regardless of the quality and methodological bias of these kinds of comparisons, they have had an enormous impact on today’s education policies (Martens & Niemann, 2013), they even shape and define what is considered as good education or educational success. At this point, one finds a striking alliance between the scientific drive for evidence-based policies, on the one hand, and the introduction of managerial principles such as performance measurement and accountability, on the other hand. Either through normative
constraints, institutional isomorphism or direct political intervention, the
numberization of schools through testing and measurement is advancing.
Everyday school life is nowadays deeply permeated by the principle of ‘learning for the test’ (Münch, 2009). Critics remark that the PISA machinery and attention paid to the results of such tests undermine much of the traditional purpose of schools (Meier, 2003). Moreover, the test regime may also run in conflict with teacher’s professional standards and ethos, thus undermining the professional self-determination.

While internationalized epistemic communities and science and policy networks are key players in the establishment of orders of quantification, with the digitalization and the growing importance of Big Data, algorithms have now become an important tool of the power of nomination too. Increasingly, algorithms determine who is ranked in which spot or how social constructs such as risk, health, productivity, credibility or popularity are depicted. Algorithms are in a certain sense the syntactic manifestations of the power of nomination. They may often have an aura of objectivity because they are impersonal and process data, but these calculative practices themselves are in no way neutral forms of turning social processes into data. Algorithms are inextricably linked with social forms of attributing value, and they thus produce and represent that which is to be considered relevant or valuable (Lupton, 2014). They are based on certain models, attributions and ideas of value, which allow them to exercise ‘algorithmic power’ (Beer, 2009) or ‘algorithmic authority’ (Rogers, 2013, p. 97) that is able to code our reality in a specific way (Anderson, 2011; Gillespie, 2014). On the basis of an ever-growing body of data, algorithms and high-tech tools are now ‘automating inequality’, creating forms of exclusion or assigning status (Eubanks, 2017), be it on the credit market, at the labour market, in the welfare system, for insurers, for product pricing or for targeted advertisement.

6. Contesting the power of nomination

How can a counter-power be built up in the number regime? A first option would be to simply ignore the data. For organisations dependent on the allocation of public funds and forms of accountability, however, this is very difficult. Even if the allocation of funding is not at stake, there is pressure to conform because a school with poor performance indicators will lose in the competition for talented students or patients will avoid a poorly rated hospital. By making differences visible and assigning rankings, countries, organisations or individuals are placed in competition for attention, legitimacy, prestige and recognition (Werron, 2012).

There are also other suitable counter-strategies to avoid the number regime known collectively as ‘gaming the numbers’. Gaming means
'manipulating rules and numbers in ways that are unconnected to, or even undermine, the motivation behind them' (Espeland & Sauder, 2007, p. 29). In gaming, actors expend their energy in getting good performance ratings without necessarily performing more. Instead of 'being good', the focus is on 'looking good', whereby image maintenance and self-representation are placed at centre stage (Gioia & Corley, 2002). There are no limits to creativity, and not only individuals but entire organisations have strategically aligned their efforts to certain indicators based on their importance, attempting to look good at any price based solely on these measures. But even in cases in which there is no creative juggling of the numbers, indicators may provide little information about actual behaviour. Organisational sociology is familiar with the concept of 'decoupling', which points to the gap between formal policies and actual organisational practices (Meyer & Rowan, 1977). This gap between programme and practice serves to provide organisations with external legitimacy but also helps them maintain their internal functions and adaptability.  

A third counter-strategy would be to challenge the concepts behind the numbers. Forms of measurements, tests and assessments only achieve legitimacy if they can appeal to certain ideas of appropriateness and fairness that are also factually accepted. Referring to justice or suitability, for example, is a lever that opposing voices can use to question certain principles of evaluation. If it is true that the power of nomination often acts backstage, however, then this means that it is very difficult to politicise classification practices. When economic imperatives are used, experts take decisions backed up by their aura of independence and objectivity, or algorithms use their quiet and invisible processes to determine the taxonomies and evaluation schemes we use to understand reality, then challengers and critics are faced with a difficult task.

To be heard – whether in the media, by political opponents or from their own side – the language of numbers is often indispensable. An increasing number of protest movements are therefore arming themselves with data expertise so they can have a voice. They must break down the 'magical reality' (Bourdieu, 1985, p. 41) of institutionalised taxonomies, for example by demasking those who profit from it or questioning the neutrality and appropriateness of the forms of measurement. The portmanteau word 'statactivism' (Bruno, Didier, & Vitale, 2014) refers to the combination of activism and statistics in new forms of political mobilisation. Many groups have recognised that the decision to use certain indicators and assessment standards influences social structures and, in the long term, will determine the shape of these structures. NGOs now very actively use the 'politics of numbers' to make themselves heard by the public. An indicator’s or index’s branding is often part and parcel of successful lobbying.
the context of automated decision-making processes such as algorithms, movements have also been formed (e.g. the NGO AlgorithmWatch) that call for making these kinds of technologies more transparent and open to criticism and for those affected to have the right to object if they are classified in a certain way.\(^4\)

One strategy of those who are confronted with criticism of their measurement concepts and indicators is usually to introduce methodological improvements. Two typical ways of dealing with this can be observed: The first aims to further streamline the respective criteria by refining methods. Most initiatives to assert and increase the acceptance of rankings work on continual improvements (typically more and better measurements) to increase the data’s reliability. The increasing availability of ever more data plays into the hands of this approach. Critique does not need to be external, these kinds of further developments can also arise from internal criticism and rival methodological approaches. A second strategy of dealing with criticism is to expand the indicator set with additional dimensions to overcome a focus that is actually or supposedly too narrow. Panels of experts, hearings with affected people or evaluation studies, but also active and at times vehement intervention by activists lead to a revision of the relevant dimensions and contents of evaluation. Objections of this kind are successful if they not only critique the concept but can also show that the indicators themselves lead to a series of unintended and problematic consequences. The power of nomination, which disguises itself with the mask of ‘technical’ and ‘objective’, can often only be challenged by engaging with its numerical semantics. Because numbers have such an immense impact, counter-strategies are often only successful if they also make use of numbers.

7. Indicators and data as symbolic capital

We have now arrived at the final step of the argument which is based on the social use of numbers. From a sociological perspective, many of these data can be interpreted as status data: They show where a person, product, service or organisation stands, they lead to evaluations and comparisons. In short, they produce status and depict it. Where a school stands, for example, is not only expressed in tests and evaluation results, it is genuinely made up by scores and indicators and the regime of worth they represent. These data objectify how a school performs in comparison to others what, in turn, makes a school more or less attractive, seen as a ‘problem school’ one should avoid or one parents and pupils should chose. Thus, status data can become effective as symbolic capital and promise impressive social or material gains in reputation, which is why people or organizations continually attempt to improve their data. Symbolic capital gives actors ‘credit’ with other actors that can be used to secure
advantages and thus recognition. A person or an organization can use their reputation to achieve improved status just as a poor reputation or dubious image can lead to serious disadvantages on the housing, partnership, credit, job or other markets. Symbolic capital in the form of status data can therefore be converted into material advantages and useful contacts. ‘Displaying symbolic capital’ is what in the end ensures that ‘capital leads to capital’ (Bourdieu, 1987, p. 218). Referring to Bourdieu, Fourcade and Healy (2017) speak of ‘übercapital’ as a form of capital based on data in which information about individuals is saved and then used to classify and evaluate individuals, thereby deciding on how to allocate life chances. In the case of visible value metrics, opportunities for increasing advantages are much greater because direct comparisons of the symbolic account value can be carried out. If we understand scores (or other quantifications) as symbolic capital expressed in the language of numbers, then it becomes clear that the symbolic aspect can be communicated and processed much more comprehensively in this abstract and generalised form than the traditional ‘good reputation’ that was often limited in terms of geographic or subject area.

The question that organisations or status-oriented people must then ask is: How can I become ‘reputation rich’? (Fertik & Thompson, 2015, p. 6) The fact that the assessment game of data is not just something that must be accepted as a given but can be influenced essentially includes the call to do just that. Self-optimisation means not only self-expression but in the contexts being discussed here refers primarily to improvements and competition so that it becomes more and more important for individuals to improve their (measurable) achievements and, at the same time, make them visible. In turn, making achievements visible in the age of numbers means that we must aim especially for ‘easy-to-quantify accomplishments’ (Fertik & Thompson, 2015, p. 63) because it is clear that frequently used algorithms can read and process especially information that is available in quantified form. Reputation scores can then easily become important for an individual just as business indicators are important for companies: People are called on to make sure that the performance values are good – a form of individual accounting (see Fourcade, 2016, p.189). They must become intensively active and use their resources and skills strategically so they yield numerical success. And they need to become entrepreneurial, that is, risk-conscious, anticipatory, market-observing, flexible and self-responsible. These three things: individual value accounting, investment behaviour and entrepreneurial orientation regarding their own numbers make people into ‘capitalists of the self’ (for this argument see Fourcade, 2016). Just as double-entry bookkeeping represented a key basis for developing the capitalist economic system, the quantification of social aspects could drive forward a more rationalised way of daily life that is oriented on numbers. The ‘entrepreneurial self’ (Bröckling, 2007), which is subject to the dictate of continual self-optimisation, is then someone who must ensure that the numbers ‘check out’. Also education is
partly becoming a number-driven project of the self, replacing traditional notions of education as self-improvement.

The rule of numbers leads to a gradual change of the social order which, to put it in slightly exaggerated terms, can be described as further fostering of competitive forms. Instead of cooperation or a direct conflict of interests, competition focuses on questions of progressing and outdoing. Competitors can be individuals but also schools, universities, hospitals, professions or states depending on which unit is being looked at. Cooperation is about working together while conflict is a direct confrontation between the affected parties. In contrast, competition is about competing in regard to specific performance goals (Werron, 2010). Quantifying social aspects opens new doors for continuing to spread the mode of competition. Ranking tables, health scores, fitness points, performance indicators or evaluation marks strengthen the comparative disposition, which leads directly to competition. All competitions depend on the ability to identify differences in performance, and rankings, scores or ratings generate the necessary ‘spirit of competitiveness’, turning actors into rivals driven by the same, overarching criteria. The more visible these criteria are, the more the actors can be relied on to conform to them. In the competitive society, one fights for places, recognition or performance advantages and no longer collectively for power or distributive justice. Forms of action that are directed at common goals and cooperation are weakened because individuals view each other as competitors and not as people who are working toward something together.

Quantifications always go hand in hand with the promise to link value systems more closely with actual performance and therefore make them more just. Indeed, adequate performance measures, for example, can provide opportunities to make achievements visible which were hitherto ignored. The avoidance of judgements made on the basis of cognitive bias, hearsay or prejudice can be seen as inherently emancipatory and this also makes the cult of numbers appealing. However, the promise of a just and rationalised status system is likely to overemphasise the positive functions and largely ignores the purpose for which such comparisons are often used as well as potential concentration effects. When status or performance data are part of the visible social hierarchy, there are often serious cumulative and build-up effects. In sociology, hoarding chances and the successive enlargement of what were originally small differences are often viewed as pawns in the theory of cumulative advantages (DiPrete & Eirich, 2006). They assume that previous successes make future successes more likely or, vice-versa, that disadvantaged positions tend to continue. ‘Success breeds success’ is the American saying for this. An analogy often used in this context is that capital that is invested once grows exponentially due to compound interest effects. Or expressed in a different way: The results of
our own status work depend heavily on the position in which we start the race. Those who are successful and reap symbolic capital can more easily open up other resources or use existing resources with a higher chance of getting returns. Sociologist Merton (1968) coined the term ‘Matthew effect’ for this using the example of science: Those who have are given more. Merton was able to show that scientists who were already well-known were cited particularly often, which can be traced back to the role of reputation. The symbolic capital that someone gained, e.g. with previous publications, produces an advantage for all future publications. Decoupling performance and success with these forms of concentrated attention is not limited to the field of science (Frank & Cook, 1995). In school and university rankings, it also holds true that good performers have better chances of continuing to improve than ‘under-performers’. Cash flows, reputation, attractiveness for students – all of this depends on rankings (Sauder & Espeland, 2009).

When looking at the use of data from this perspective, it becomes clear that the idea of a status hierarchy that is increasingly performance-focused due to quantification points us in a false direction, at least when looking at the breadth of developments. Measuring social aspects and universalising competition are thus no guarantee for a rationalisation of status attribution processes. Numerical reputation advantages can bring with them immense bonuses just as a lack of good numbers can lead to systematic disadvantages and a downward spiral. An activist culture of performance orientation and improvement may be implemented with the institutionalisation of status competition in an increasing number of areas of life, but this is linked to an inequality regime that tends to decouple performance differences and returns on success in many areas (Neckel, 2001). By claiming to be based on objective data, this system ensures that it maintains the image of fairness, which is what counts in a society that believes itself to be a meritocracy. Quantitative data, simplified assessment measures and standardised procedures are legitimising guiderails in the competition for better numbers that also cover up the ideological principles upon which they are based and what normative ideas they realise.

8. Conclusion

This kind of society may seem like an exaggeration of individual trends today, but there are good reasons to assume that demands for measurability and quantification, which act as drivers, will not remain surface-level phenomena. As we have seen, not only the tools and technologies for measuring social information have made quantum leaps. The demand for data for the purpose of social governance is also steadily increasing. This happens in the area of education, work, social media, in relation to mobility, in social insurances or the platform economy.
where datafication leads to new forms of valuation and evaluation, and also shifts power relations. This is not only about indicators for the central control rooms for societal decisions but about many different contexts in which data now play a role. Behind the semantics of status data, which are increasingly prevailing, are changing forms of relationships that are based on more-or-less comparisons. Infrastructures of evaluation that are steeped in numbers do not remain external to the institutions or individuals but are practiced and consolidated by socialisation, social expectations and efforts to achieve legitimacy. They provide reasons, create incentives, and set criteria for relevance, that is, they determine what counts.

In this world, positive gains are collected primarily by those who shine with their good numbers. Self-esteem is also affected by quantification: If we assume that normal concern about self-esteem includes the desire for attention (Franck, 1998, p. 79), then we can assume that people make an effort to obtain as good a position as possible in the value order. For organisations such as schools or universities, performance data have a conditioning effect. Because the participants make an effort to obtain the best results possible, indicators, ratings and rankings always have effects on internal culture and working methods. They therefore do not remain remote and irrelevant bodies of numbers but start to encroach deep into the internal organisational practices and self-images: They can re-calibrate decision-making processes and priorities, bring about changes in strategic goals, influence personnel decisions and lead to an intensive examination of the organisations’ own image. From case studies, for example, we know that rankings can also influence the ‘collective psyche’ of university members (Locke, 2011). By asserting that an institution has a certain rank, they convey an idea of ‘value’ that in turn affects the self-esteem of the people or even of a whole organization.

Rankings, ratings or scores communicate signals about social value. In areas in which we do not know anything about the actual value of our performance, numbers can be a crutch for self-reassurance. If we orient ourselves on these in order to evaluate and place others in a hierarchy, then we will tend to believe that others also use these signals to evaluate us. Classification data thus become relevant to everyone and successively contribute to us all becoming part of a large social game of mutual assessment, observation and comparison. To push the argument even further: The quantification of social life therefore has the potential to call forth a new regime of inequality in which we are continually assessed and compared with others, and in which we must continually try to stand out with good numbers.
Notes

1. The article builds on my book ‘The Metric Society’ (Mau, 2019) and extents its argument.
2. In philosophy, there is an enlightening debate on the topic of commensurability (Chang, 1997), which assumes that different elements or objects can be measured against one another or compared if at least one ordinal characteristic for comparison exists or if a hierarchy can be created.
3. Indicators without an institutional calibration, that is, without a precise orientation on organisations’ operational contexts, always include the risk of this kind of habitualised decoupling. This does not always have to be problematic because the slavish implementation of target goals can be highly dysfunctional.
4. One prominent example is the discussion of an alternative measure for welfare beyond the gross domestic product (GDP). One disadvantage to previous suggestions that take into consideration questions of resource use or inequality – e.g. the suggestions from the Stiglitz-Sen-Fitoussi Commission in France (Stiglitz, Sen, & Fitoussi, 2010) – is that up until now it has not been possible to present a convincing indicator that could replace the gross domestic product as an all-encompassing measure of welfare and progress.

Disclosure statement

I acknowledge support by the Open Access Publication Fund of Humboldt-Universität zu Berlin.

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