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Empfohlene Zitierung / Suggested Citation:
Thévenot, L. (2019). Measure for Measure: Politics of Quantifying Individuals to Govern Them. *Historical Social Research*, *44*(2), 44-76. https://doi.org/10.12759/hsr.44.2019.2.44-76

Measure for Measure: Politics of Quantifying Individuals to Govern Them

Laurent Thévenot *

Abstract: »*Maß für Maß: Die Politik, Individuen zu quantifizieren, um sie zu regieren*«. This article compares a variety of modes of quantifying individuals to govern them. The analytical grid issues from a former research program on the Politics of Statistics that focused on one of these modes of governing by numbers, the statistical nation state, which is here included in an array of more recently developed governing numbers based on benchmarking, digital tracking, or self-quantifying. Three main operations differentiate modes of governing by numbers: measuring individuals for quantification, taking political measures accordingly to guide their behaviors, and an intermediate operation that is often less visible although situated between the two previous ones and needed to link them: evaluating the situation through a measured judgment that justifies the monitoring based on numbers. This analysis breaks down data into the sequential steps of the transformations chain of information formats needed to pass from an individual person to a governing figure. The plurality of modes of evaluation, and its reduction by quantification, is given high significance, as well as the way each mode of governing affects individuals, their identity and their possibility to critically reflect and question.

Keywords: Convention theory, quantification studies, politics of statistics, pragmatic sociology, governing by numbers, quantified self.

1. Introduction

This article deals with the use of numbers that quantify individuals to govern them. Modes of governing by numbers are differentiated by three main operations to perform: measuring individuals for quantification, taking political

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Some of the research presented here benefited from the support of the *Laboratoire de Sociologie Quantitative* in CREST (Center for Research in Economics and Statistics), Paris. A first short version in French of this article was presented at the conference for the 70th anniversary of INSEE, "Histoire aujourd'hui, statistiques demain: regards croisés sur la production et l'usage des statistiques," June 29, 2016, Paris. I am also grateful for comments at the Martin-Luther-Universität Halle-Wittenberg workshop on "Governing by numbers: Key indicators and the politics of expectations," Halle, October 5-7, 2017, to an anonymous referee, and to Rainer Diaz-Bone and Romuald Normand.

measures accordingly to guide their behaviors, and an intermediate operation that is often less visible although situated between the two previous ones and needed to link them: evaluation of the situation through a measured judgment that justifies the monitoring based on numbers. The scope of our concern extends the program on the Politics of Statistics (Thévenot 1990a, 2011a, 2016) which contributed to a research tradition in the history and sociology of statistics and quantification originating at the French institute of statistics and economic studies [INSEE] (Desrosières 1998), before spreading and meeting international research programs on quantification studies.[1] Because of the development of new kinds of governing numbers that vary according to their governed entity and governing quantity, we have to situate the statistical nation state government with regard to non-state governing numbers issued from tracking individuals' behaviors, including modes of self-governing the "quantified self."

In continuity with the previous program, we first pay close attention to the chain of transformations required to: format the world through investing in forms that produce information and facilitate the coordination of action; collect information in diverse formats; process the information with various methods. The "objectivity" of quantification (Porter 1995; Daston 2007) leads to a short-circuit between numbers and the actions they guide, and overshadows the modes of evaluation that inspire policies and only appear in criticisms and controversies. The second main feature of our approach is to bring to light this plurality of values, which more or less explicitly justify the guidance of behaviors. It makes possible to appreciate how quantification reduces the wide plurality of underlying and conflicting evaluation modes. We also track evaluation modes in explanatory *background theories* of social, economic, and political sciences that are used to interpret numbers, and thus to govern with them (Thévenot 2011a). The analytical framework of Convention Theory that I here rely on, in particular the contribution from the Economies of worth and its extension with valued regimes of engagement, allows to identify through testing moments a wide variety of modes of evaluation, their practical implementation and material equipment, and to grasp the critical tensions aroused by their plurality. We keep in mind that classical arts of governing – either the personality or the community – emphasized the need to cope with such a plurality. For this purpose, they elaborated the key notions of "prudence" in moral philoso-

[1] It thus contrasts with the UK "governmentality" approach, which was developed independently later on and found inspiration in Michel Foucault (Mennicken and Miller 2012; Miller 1992, 2001; Miller and Power 2013; Miller and Rose 1990; Rose 1991). For combinations of both approaches and reflection on their relationships, see: Hansen 2016.
On quantification studies, see: Diaz-Bone and Didier 2016a, and the whole special issue introduced by their article (2016b). On the links between French Convention Theory and statistics, see: Desrosières 2011, and between Socio-Professional Classifications and both Bourdieu's and Convention Theory or Pragmatic Sociology, see: Amossé 2017. On Convention Theory in German, see: Diaz-Bone 2011, 2015, 2018.

phy, or “proportionality” in law, which conceptualize compromise, or balance, between conflicting evaluation claims. Interestingly, the term “measure” meant originally – and still in French or in the English “measured judgment” – this sense of moderation. Measure can actually cover the three main notions involved in governing: $measure_1$ as quantification, $measure_2$ as balance between a plurality of evaluations justifying this policy and $measure_3$ as governing policy.

By definition, governing numbers have influence on policies and therefore on the measured individuals’ actions. Yet, their influence can be more or less direct and strong. In statistical nation state government for instance, their executive power or enforceability is often weak when numbers come from academic publications, possibly stronger when they are the output of expert reports, and high in the case of manpower statistics that oriented the educational system through the French planning agency in the 1970s-80s. Table 1 offers a synthetic view on our comparative analysis. It is based on the analytical categories introduced above and will be gradually filled when comparing the various modes of governing by numbers.

A first part of the article is dedicated to the plurality of evaluation modes that stay at the background of governing numbers, their combinations, and the reductions that quantification entails. A second part goes to the heart of the comparison.

Table 1: Comparing Various Modes of Quantifying People to Govern Them

government by numbers	statistical nation state	international benchmarking in education (see also: Normand 2016)	state-private social credit system (see also: Lam 2018)	managerial capture on the workplace (see also: Agre 1994)	organizations digitally tracking individuals	quantified self (see also: Vormbusch 2018)	genomic self (see also: Romijn 2018)
governed entity	nation	from infra- to supranational entities	nation	company workforce	customers	living body	genomic personality
governing quantity	state statistics	quantified benchmarks	Big Data	quantified capture of performed elementary tasks	Big Data	quantified self	probabilistic predisposition
Measuring [$measure_1$] individuals	statistical taxonomies: 1. social origin 2. occupational qualification 3. human capital 4. 'cultural' / 'ethnic' origin	OECD PISA (among others) surveys on skills in: reading, mathematics, science	credit history, contractual reliability, behavior preferences, personal social network	individual execution of tasks on the workplace	individual behaviors collected by connected infrastructure	„taxonomies of the self": visualizing, writing the "calculated living body"	analyzing epithelial cells to look for genes
Valuing [$measured_2$ judgment]	1. equality, solidarity 2. technical efficiency 3. competition in the labor market 4. struggling against discriminations	equity, performance, entrepreneurial valuations	sincerity „strengthen sincerity in government affairs, commercial sincerity, social sincerity, and judicial credibility construction"	productivity	marketing	health hygiene performance capacities enhancement	health, cognitive abilities, longevity, sports performance, ancestry, geographical, and ethnic origins

Governing [measure$_3$] actions	public policies: 1. reducing inequalities / fostering equal opportunities 2. planning educational needs 3. fluidifying the labor market 4. integrating / fighting against discriminations	standards and good practices	„Implement warning, intra-sectoral reporting, and criticism, open condemnation and other such punitive measures against those breaking trust in violation of regulations, according to the gravity of the circumstances, both for corporate members and individuals members."	individualized management	incitation and covert constraint on individual behaviors	explicit feedback on individuals to orient their choices	nutrition (coffee, alcohol) sport practice genetic profile of his/her ideal partner
Background theory	1. sociology of social reproduction / open societies 2. labor economics 3. neoclassical economics 4. theories of culture / stigmatization	economics of human capital, „knowledge society", psychometrics	market economics - „The modern market economy is a credit economy, establishing and completing an social credit system is an important step in rectifying and standardizing the market economy order, reducing transaction costs and preventing economic risk".	business model	marketing	physiology, medicine, psychology, hygiene, self development	genomic heredity
information collection	questionnaire based survey / administrative files	tests in: reading, mathematical and scientific literacy, questionnaires on: student background, school organisation and structure	connected objects and digitalized behavioural units	„minimum replicable unit" (Agre) computerized capture on the workplace	unknown, connected objects, trading of web files	deliberate capture by sensors and connected objects	saliva test
information format	codified variable based on conventional/ institutional classifications: socio-occupational status, diploma, training length, ethnic or	indicators	digitalized tracks of individual behavior, geo-tracking, profiling	elements of the task coded via the computerized equipment	digitalized tracks of individual behavior, geo-tracking,	indicators of biological functions (heart rate variability), intermediate market-	genome information + probabilities prognostic categories

	cultural origin			used in work	profiling	ing-scientific categories („coherent state"), every-day notions(stress)	
information processing	sampling, mobility tables, principal component analysis, econometric	inequity in terms of correlations between student achievement and: gender, socio-economic and cultural variables, ethnicity, social and cultural capital	big data bases, algorithms	internal corporate statistics	big data bases, algorithms	big data bases, algorithms	genome sequencing, big data bases & algorithms
executive power	weak for academic paper; possibly stronger for experts reports; high for manpower statistics orienting the educational system (in the past)	European and national educational policies based on PISA	incentives and sanctions	incentives and sanctions	incentives and guidance	biofeedback neuro-feedback or other feedback depending on the governing self	risk assessment in individual conduct
critical assessment	critical debates on variables and figures, mostly around the state statistical institute and academic community / National Council on Statistical Information	passionate debates within experts working groups, some public controversies, with few consequences	„Perfect social public opinion supervision mechanisms, strengthen disclosure and exposure of trust-breaking acts, give rein to the role of the masses in appraisal, discussion, criticism and reports, shape social deterrence through social moral condemnation, and censure trust-breaking acts of members of society."	feedback during professional interview / unions criticisms	invisibility for a voiceless public without valued conventions to discuss	self critical openness of the choosing individual / the web community of quantified selves	few public liberal criticisms of the lack of free access to genome information / personal irony in front of the "public" web

2. Plural Valuations and Uniform Quantification: Which Reduction?

Although quantification does not prevent the construction of multidimensional spaces, or other topologies, it often results in a scalar reduction. The consequence is all the more severe as quantification measures the multifaceted value of human beings. The meaning of “value” as a numerical amount came after the medieval sense of what is worthy in human beings – initially their courage and bravery – and its later extension to things through price, or more widely what makes an object suitable for a certain use (*aveir valor*). The model of *Economies of Worth* [EW] (Boltanski and Thévenot 1987, 1991, 2006, 2007) was designed to deal with values given to human beings – and things, as well – in criticisms and justifications that aim at legitimacy, inspired by Max Weber’s analysis of legitimate orders of domination. EW relates worth to the investment in conventional forms coordinating actions in ways that pretend to benefit the common good. The instrumental use of these forms can thus generate domination and critical suspicion towards their coordinating power. Quantification is more favorable to some of the orders of worth. *Market* and *industrial* orders of worth are ready for quantification because they are based respectively on the conventional form of monetary equivalence, for one, and measurable technical efficiency for the other. The worth of *fame* is also quantifiable to the extent that notoriety is measured by opinion pools or directly by the digital traces collected on the Internet. Since the plurality of orders of worth brings to light the reduction that quantification operates, we need first to consider an initial ambiguity of EW on this pluralism, and criticisms it aroused.

2.1 From a Single Worth “World” to a Differing Pluralist Community

Since each order of worth claims legitimacy through a conception of the common good, it fosters the “*denunciation*” of rival conceptions in highly critical relationships with them. EW model emphasizes the evils resulting from the plurality of orders of worth since each “world” based on a single order of worth and its proper “reality test” is corrupted by the interference of another order of worth. Although it conceives “*compromises*” between two orders of worth, they are shown to be more fragile: they risk breaking apart if the reality test is pushed in the direction of one or the other of the two orders of worth. The bias in favor of a world only governed by a unique order of worth has often been criticized by commentators. In the opposite direction, however, EW states that human beings have to develop “arts of living in different worlds” that coexist in the “universe” where they live (Boltanski and Thévenot 2006, 148). Pluralism is also emphasized in judgments incorporating several orders of worth and called "equitable" because they take recourse to mitigating circumstances (ibid., 150). The tradition arising from the Aristotelian conception of "prudence" [*phronesis*] has promoted a practical wisdom that departs from a mode of arguing in general to adjust to the situation in particular.

The positive valuation of pluralism appeared more clearly with research conducted later in arenas dedicated to confronting several orders of worth, such as *public hearings* organized to assess infrastructure projects that affect a community (Moody and Thévenot 2000), or organizations and associations conceived as grounded in *compromises* between plural orders of worth (Thévenot 2002). The common good then taken into account concerns a specified composite community and not the whole common humanity. A new research agenda focused on the various modes of composing a differing commonality, conceptualized in terms of "grammars of commonality in the plural" (Thévenot 2014a). The "grammar of plural orders of worth" is the one that channels differences in the "composition of commonality" through a plurality of conceptions of the common good, placing value on their plurality.

In his commentary on EW, Paul Ricœur pointed to this issue. He stated that every political community is built on *compromises* between orders of worth (Ricœur 1991). He noted that "building compromises in the life of a company is precisely the art of combining different reference planes, without confusing one with the other," as the compromise between a "strategy geared towards production" and "citizens' rights, as the right to unionize" (ibid., 2, my translation). He gave an example of the sharp distinction between *compromis* and *compromission*:

> 'Work well, we are a big family,' says a paternalistic boss to his employees. Here the company slyly captures the family value of submission of child to father that is so characteristic of the patriarchal family. (ibid., 1)

Such an employer steals a family value in an attempt to make his business run better. It is "a *compromission*, a vicious mixture of planes and principles of references" (ibid.). More than a decade later, Ricœur returned to the discussion of the EW model and its notion of compromise in his *Course of Recognition* (Ricœur 2005). Compromise, he commented, can

> awaken the actors of one world to the values of another world through such criticism [denunciation from one world to another], *even if it means shifting from one to the other* [*quitte à changer de monde*]. A new dimension of personhood is thereby revealed, that of understanding a world other than one's own, a capacity we can compare to that of learning a foreign language to the point of being able to appreciate one's own language as one among many (ibid., 209; in italics, my change of the original translation that is: "short of their changing worlds").

Ricœur considered that "it is the capacity for compromise that opens a privileged access to the common good" rather than a judgment in one single world (ibid.). And he concluded by referring to *Justesse et justice dans le travail* (Boltanski and Thévenot 1989) and *L'action qui convient* (Thévenot 1990b, 2006):

> nothing allows social actors to dispense with turning to practical wisdom [*sagesse phronétique*], which does not separate justice from the correctness [*la justesse*] of the search, in every situation, for a fitting action [*l'action qui convient*]. (Ricoeur 2005, 210)

2.2 The Plural Composition of Organizations and Their Reduction by Numbers

We saw that Ricœur mentioned the case of companies to anchor his argument promoting compromise. While not confusing them with political communities, he found in them a plurality of orders of worth, which arouses structural tensions between them and needs for compromises in the making and maintenance of the organization. In organizational studies, EW has often been used to highlight the plurality of coordinative conventions that claim the legitimacy of orders of worth, and the compromises that are designed to ease the tensions between them. Shortly after the first publication of EW, I carried out with André Wissler as principal investigator (Wissler 1989a, 1989b) a several years research on a major French cooperative bank. It stands out by the significance of both the *civic* convention of solidarity for more equality and the *domestic* convention valuing traditional local dependencies and reputations. In this bank there are no "customers" but "members" who are represented by elected and esteemed "administrators" who sit on governing bodies, in parity with "managers" who rather qualify for *industrial* and *market* orders of worth. This pluralism is threatened to be reduced by a main governing number, the share value figure resulting from going public, as did another of these cooperative banks, the *Crédit Agricole*. Like financial *markets*, coordination by this number is not only a matter of *market* worth convention, but also the worth of *fame*, the combination of the two being at the origin of speculative bubbles (Orléan 2009). As a director of this latter bank told me, the regulations implemented by the European Central Bank are not able to give room to this plurality of valuation modes, because the quantitative standards they rely on operate a drastic reduction of this plurality. Another survey that I directed with Lucie Bonnet as main researcher (Bonnet 2014, 2016) focused on companies in the social housing sector. In this case, the reduction of the pluralism of orders of worth came from the implementation of a unique quantified quality program also based on standards that privileged certain "quality conventions" (Eymard-Duvernay 1989) at the expense of others. When actions were formatted in services according to *market* and *industrial* worth, the reality test was better achieved than before. *Domestic* and *civic* orders of worth, which are highly significant in this social sector at the level of principles as well as that of everyday actions, were left aside by the measurable quality standards put in place. Teun Zuiderent-Jerak highlighted a comparable reduction (Zuiderent-Jerak 2009, 2015) in his research on the healthcare hospital sector, which is also strongly composite because of the plural orders of worth involved. Due to the weight of insurance, *market* worth tends to unbalance the compromises put in place in health organizations. Composite firms grounded in a plurality of orders of worth are not only found in the social, health, or agro-food sector (Ponte 2016; Thévenot 1995). Studying start-ups in New York City, David Stark (2009) highlighted the particularly wide range of orders of worth used in innovative companies, and the advantages issuing form their diverse "portfolios." Each order of worth canalizes a type of uncertainty – or "form of the probable" – framed by this worth and its reality test (Thévenot 2002). The more open the range of orders of worth taken into account in the organization, the easier is its adaptation to multiple uncertainties.

2.3 Reifying the Face Value of Conventions or Engagements when Closing One's Eye in a Natural Stance

Governing numbers can also reduce the plurality of valuations modes by the reification of valuation conventions, which limits their engagement in a reality test. Research on two major quantification devices that govern markets demonstrates such a reification.

Looking at the regulation of credit rating, Benjamin Taupin points to the "institutional maintenance work" that reveals the "rating agencies' resistance to critique" (Taupin 2012, 536-7). Five successive consultations (between 2000 and 2010) by the Securities and Exchange Commission – the independent US agency responsible for regulating the nation's stock and options exchanges – allow Taupin to identify the weight of a plurality of engaged orders of worth: *Fame* (31.6%), *Industrial* (25.3%), *Market* (23.2%), *Civic* (18.6%), *Inspiration* (0.7%), *Domestic* (0.7%). It converges with the former observation that financial "markets" are more governed by the *fame* convention of co-ordination than by *market* competition. In the "confirmation work" (ibid., 539), actors repeat and reformulate the existing regulatory arrangement. When criticisms become stronger, the compromise between the first three worlds is "immunized by a circular figure" (ibid., 547). Each of the three tests internal to the compromise are prevented from reaching their target: "the test is diverted by reference to one of the dimensions that is not under attack in the compromise arrangement" (ibid., 549).

Lisa Knoll's research (2015) also focused on influential economical figures: prices on "carbon market." She argues that the 2003 EU Emissions Trading Directive

> cannot be analyzed as a compromise, since it is said to regulates the 'outside of the market' because of the separating construct based on the distinction between 'artificial law' versus 'natural market.' (Knoll 2015, 133)

She shows that the *market-civic* compromise of state taxation, as recommended by Pigou to deal with negative externalities in environmental pollution, "is challenged when law makers seek to keep the core of the market (the price mechanism) free from regulation" while the alleged "outside of the market," on the opposite, is intensively regulated (ibid., 139). Compromise-building is jeopardized since one of the two worlds involved "is not only objectified but also naturalized" (ibid., 146).

The criticism of naturalization goes back to Marx who, in *The Poverty of Philosophy*, wrote:

> Economists have a singular method of procedure. There are only two kinds of institutions for them, artificial and natural. The institutions of feudalism are artificial institutions, those of the bourgeoisie are natural institutions. (Marx 1955 [1847], 54, chap. II, seventh observation)

In order to criticize the attribution of inequalities of school achievement to innate gifts or capacities, Pierre Bourdieu and Jean-Claude Passeron referred in *The inheritors* (1979 [1964]) to this criticism of naturalization. It became a major rule of *Le métier de sociologue* [*The sociologists' craft*] to follow "Marx's precept forbidding to eternalize in nature the product of history, or Durkheim's precept demanding that the social be explained by the social and only the social" (Bourdieu, Chamboredon and Passeron 1968). This criticism had a remarkable fecundity in animating the sociological movement of unveiling social constructions instead of looking at them blindly as natural.

Our critical approach towards "data" benefitted this movement. However, EW and its extensions contributed to a new elaboration of naturalization:

> Our approach is the inverse of the one taken by political philosophers who find the principle of the polity in nature. It differs, too, from the critical operation by means of which people can situate themselves in a different world and have their eyes opened, coming to see the world they left behind as artificial, the product of an illusion, a "naturalization." (Boltanski and Thévenot 2006, 136)

EW unfolded each of the worlds which were named "natures" in the first publication (Boltanski and Thévenot 1987). This unfolding,

> conducted from within each world, requires our reader to suspend the critical outlook […] and to plunge into each world in turn as one would do in a situation in which the sincerity of one's adherence to principles would be a condition of the justification of one's action. (Boltanski and Thévenot 2006, 136)

To make this adherence perceptible to the reader, we paradoxically designated by "nature" a world of which we identified all the conventions or "qualifications" usually taken as pure social constructs. We sought to

> create an impression of self-evidence and redundancy closely resembling the impression one gets during peak moments of adherence to a natural situation. (ibid., 158)

The peak moment is thus defined:

> A model test, or peak moment [*grand moment*], comes about in a situation that holds together and is prepared for a test whose outcome is uncertain, a test that entails a pure and particularly consistent arrangement of beings from a single world. (ibid., 147-8)

Sports offers an illustration: when "no external circumstances intervene to disturb the contest," participants are "fully caught up in the situation […] engrossed, defenseless, stripped of their critical faculties," so that "the worth of beings that matter is revealed as self-evident." Natural evidence is thus extreme in "peak moments in which each of the worlds exhibits itself in a particularly pure form, as can happen in a dizzying fashion in ceremonies" (ibid.). By the ordering that a peak moment presupposes, "the worthy are at their best; their worth is thereby confirmed."

This new light cast on the moment of naturalness, peak moment, ceremony, when worth is confirmed, is useful to apprehend governing by numbers since figures tend to reinforce such a moment when they are taken at face value. Conceptualizations of these moments were given further parallel developments by each of the co-authors of EW. I mention them here for the sake of the discussion. For his part, Luc Boltanski has extended these analyzes of EW by an approach of institutions that identifies them with "confirmation" and specifies the tautological discourse that expresses what-is-must-be (Boltanski 2011 [2009]). He names "truth test" the ceremonial peak moment, which does not open to the kind of uncertainty of worth, as does the "reality test" that require criticism and justification, but which still aims at avoiding the distraction by contingencies. Taupin refers pertinently to these moments of "confirmation" and "truth test" when analyzing actors who reject the opening of the reality test. Knoll also mentions the "regime of peace in fairness," which Boltanski defined as tacit equivalence devoid of the kind of criticism inherent to the "regime of dispute in justice" (Boltanski 2012 [1990]).

For my part, I adopted another research strategy. In order to clarify a loose notion of "logic" or "regime of action," I proposed a more precise concept of *engagement*, which characterizes valuable dependency of human agency, power, or capacity, on the environment properly grasped, and the dynamics of the making of the person (Thévenot 1990b, 2006; in German: Thévenot 2010, 2018). Various *regimes of engagement* extend beyond the public the notions of goodness, trying moment and format of the engaged reality. For our present discussion, this development has two benefits. It clarifies the structural tension that any *engagement* generates between: 1) the stance of assurance, when one "closes one's eyes" on what creates doubt, sticking confidently to the letter of the convention – or the marker of routine when engaging in *familiarity*, or the monitoring indicator when engaging in a *plan* or project; 2) the stance of opening to doubt in the movement of a situated action, when one "opens the eyes" on what calls into question the assurance conveyed by the letter of the convention – or the routine mark when engaging in *familiarity*, and the monitoring indicator when engaging in a *plan*. These two inherent stances in any engagement are hinted at by the two meaning of "conventional": formally agreed upon / doubtfully insincere. For our reflection on indicators, this analysis clarifies the limits of the kind of assurance on the action of engaging, that bring validation signs such as indicators. They operate as confirmation markers, which are relevant only to the first stance. The confirmative pragmatics of public institutional words that Boltanski judiciously pointed to (Boltanski 2011) is to be situated within this broader perspective on the confirmative pragmatics of the marks or signs that respectively index various regimes of engagement.

The second benefit of this new development is to differentiate between *regimes of engagement*, instead of dealing indistinctively with of all practices – or pragmatics – below the institutional level as "taken for granted" and devoid of any trying moment, which is the research strategy adopted by Boltanski (ibid.). Analysis is carried further to discern a range of *engagements* beyond public ones, which are unequally prepared for commonality. This extension makes it possible to approach politics, power, and domination from far beyond public spaces, opening the investigation to diverse modalities of commonality and constructions of differing communities (Thévenot 2014a). This extension also makes it possible to deal with differing personalities and their ongoing consistency, renewing the analysis of their dynamic identity (Thévenot 2014b).[2]

As benefits of this extension, we can identify two mechanisms through which governing numbers, when given the function of objective$_1$ – i.e., measurable – indicators, operate reductions of the ways actors engage with their environment. First, they limit criticism by reifying the actors' dynamics of engaging, which is frozen in the first stance: the yardstick fixing the letter or face value of convention / engagement. Second, they tend to reduce the plurality of modes of engaging in a plan that aims at a projected objective$_2$. Thus governing through objective$_1$ objectives$_2$ demand to cut actions up in limited engaged plans and still reduce these plans to measurable outputs (Thévenot 2009, 2015a).

3. From Nation State Governing Numbers to Digitally Tracking Individuals

The executive power of governing numbers varies significantly according to the relationship between the quantified measure$_1$ of individuals and the measure$_3$ orienting their behaviors. Before considering the change of this relationship when "private" personalized digital traces serve as governing numbers, I will mention some lessons learned from a completely distinct nation-state relationship between quantified measures$_1$ issued from national statistical data and the political state measures$_3$ that they inform.

[2] Three special issues of journals recently presented the benefits from international research sharing this approach and involving Western and Eastern Europe, Russia, Northern and Southern America: Breviglieri, Diaz, and Nardacchione 2017; Daucé, Rousselet, and Thévenot 2018; Luhtakallio and Thévenot 2018.

3.1 Statistical Quantification for the State

While Desrosières's seminal work on the history of statistics moved toward a typology of States (Desrosières 1985, 1998, 2008a, 2014), my program on the "Politics of Statistics" (in French: Thévenot 1987b [1983], 1990a; in English: Thévenot 2011a, 2016) relied on more elementary political and moral constructions of commonality, which structure both states and other organizations or governing bodies. It was initiated by historical research on the genealogy of a repeated national survey about social, vocational, educational and migratory mobility – called "Professional Qualification Training [*Formation Qualification Professionnelle: FQP*]," which informed public policy measures in the areas of demography, training, manpower and discrimination. The original and partly published text that opened this program (Thévenot 1987a) specified the way to approach the politics of statistics

> by the association of representativeness with representation, statistical forms and political forms being brought together because of their shared capacity for equivalence, which performs both operations of representing members of a population in social statistics and qualified citizens in a political order. (ibid., 3)

In this text I went back to the precursors of this social mobility survey, to the survey used by Francis Galton to inform eugenic policies, and to its successors, which were statistical surveys still influenced by eugenics after the Second World War, the first social mobility survey being carried out at the National Institute of Demographic Studies [*Institut National des Etudes Démographiques*] (Thévenot 1990a). In order to highlight the dependence of the "information formats" of survey variables on modes of representation that are supported by "orders of worth," I provocatively moved further back to the eighteenth century. I considered a kind of "survey" on social mobility that the Duke of Saint-Simon published in his *Memoires* on the careers and origins of the aristocratic elite under the government of King Louis XIV. In a literary narrative report, the Duke uses an information format that might be valued according to the *domestic* worth, to inform "those who govern" and "enlighten" them. Concentrating on "great men" (*les grands*), Saint-Simon's survey is intended to put their states of worth to the reality test, beginning with the King himself with the conclusion that he is only "a fairly great man" (*un assez grand roi*). The survey is intended to reveal injustices in the attribution of qualifications for worth, and to avoid "misjudgements [*méprises*]":

> Let us be knowledgeable on the value of people and the price of things: the great study is not to be mistaken in the middle of a world so carefully masked... (Saint-Simon 1950 [1750], 12, my translation)

The aim of the memorialist is to open his eyes ("will most scrupulous people persuade us that God has given us eyes to keep them exactly closed on all the events and characters of the world?"), to unmask the small sides of the great beings, the possible usurpation of worth ("to discover the interests and the springs of those great ministers who, issued from mud, have become the only existing ones, and have overthrown everything"), and conspiracies that call into question the justice of the distribution of states of worth in the order of *domestic* worth. Like all subsequent statistical surveys, claiming to be of public interest, this survey was already said to be "useful to society" according to the author's words.[3]

In the successive FQP surveys implemented during the second half of the 20th century, we followed the continued history of the relationship between quantified measure$_1$ of the governed and governing measure$_3$, revealing the various configurations supported by distinct underlying political constructions (Monso and Thévenot 2010; Thévenot 2011a). The measure$_1$ of the person by "social origin" nurtures a critical questioning of social or educational policies, inequalities being denounced from the *civic* worth of collective solidarity. The measure$_1$ by "occupational qualification" finds place in a centralized state forecasting and planning of manpower and training "economic needs," aiming at legitimacy through the future supported by *industrial* worth. The measure$_1$ by "human capital" combines a kind of investment that qualifies for *industrial* worth, and the *market* worth of a competitive labor market in which this capital would be valued. In all of these configurations, individuals are measured and valued by categorical *qualifications* for the common good that are linked to different orders of worth. More lately emerged in France, among high controversy, a statistical measure$_1$ of individuals by their migration origin. It might refer to "ethnic" or "cultural" variables – their names being hotly debated – and be relevant to another *multicultural liberal* commonality distinct from the grammar of orders of worth and involved in the struggle against discriminations (Thévenot 2014a).

3.2 International Benchmarking in Education

Numbers do not only serve to measure but to measure up, to compare oneself with others or with oneself in other situations, for improvement. The shift towards comparison with an expected standard is at work in governing numbers used for benchmarking. This movement, originating in corporate engineering and marketing, has spread to states (Bruno 2010, 2017; Bruno and Didier 2013) and, reinforced by European policies and the Open Method of Coordina-

[3] "Those who are trusted by generals and ministers, or still more by princes, must not let them be ignorant of people's morals, conducts, or actions, and are obliged to make them know who they are, to guarantee them of traps, surprises and, above all, bad choices. This is a charity due to those who govern, and which regards very principally the public, which must always be preferred to the particular. The public, or its portion that is governed by them, has a great obligation to the enlightened advisers [...] who must not neglect to enlighten them, and thus to make themselves *useful to society* as are friends and family" (Saint-Simon 1950, 12).

tion (Lange and Nafsika 2007; Salais 2006), gained a global dimension, even reaching the global scale of the geopolitical land governance issue (Silva-Castañeda 2016). These governing benchmarking numbers are commonly recognized at the heart of neo-liberalism but not limited to a type of "neo-liberal State" (Desrosières 2008b) since they challenge the boundaries of nations as governing entities, and lead to internationally aligned policies. Because this article focuses on quantifying individuals to govern them, it will stick to benchmarking numbers governing education, and more precisely to the core OECD PISA governing numbers. These governing numbers have been thoroughly examined by Normand with an analytical grid close to the one used here (Normand 2011, 2016a, 2016b, 2018; Normand and Derouet 2017). They contribute to the kind of quantified individual self-evaluation, responsibility and voluntary engagement that we shall meet again below. It is part a wider mode of "governing by standards" (*gouvernement par les normes*: Thévenot 1997, 2009) and "objective$_1$ objectives$_2$" (Thévenot 2009, 2015a). Standards have grown in significance (Busch 2011; Ponte, Gibbon, Peter and Vestergaard 2011), particularly in the domain of education (Landri 2016). The measure$_1$ of individuals is based on standardized tests in reading, mathematical and scientific literacy, correlated with standardized variables on the students' background and school organisation. The governing measure$_3$ rests on standardized actions known as "good practices." This shift towards "regulated objectivity" relies on "interlocking convention-based forms" (Cambrosio et al. 2006, 197, 2009). Normand showed that changing "epistemic governance" of European Politics of Education also involves the additional "policy of evidence": Evidence-Based Medicine and Randomized Controlled Trials issued from statistical techniques (Normand 2016a).

Highly informed by economics of human capital, this government came to depend on the work of a community of quantitative researchers who are "closely aligned with the growing needs of governing education systems, especially their performance, financing, and assessment" while being connected by their work in research centers, publications in journals, contracts to projects and participation to international conferences (Lawn 2013, 118). Despite some passionate debates and the knowledge that PISA indicators do not capture the complexity of the equity issue (Gorur 2014), OECD continues to support this benchmark: "The more enmeshed a measure is in multiple networks, the greater the investment in that form, and the harder it is to change it" (ibid., 68).

3.3 From the Measuring and Surveying State to a General Credit Agency Rating All Citizens with the Help of Private Big Data

A new mode of governing by numbers at a very large scale, combining nation state and private companies, has recently emerged, which offers a transition between state statistics governing numbers and digital tracking that we will discuss later. Considered as an "important component part of the Socialist market economy system and the social governance system," an ambitious new nation state politics of numbers was issued in 2014 by the Chinese Government and published in the document entitled "Planning Outline for the Construction of a Social Credit System (2014-2020). The State Council of the People's Republic of China" (2014). It aims to set up in 2020

> a credit investigation system covering the entire society with credit information and resource sharing at the basis, basically having completed credit supervision and management systems, having a relatively perfect credit service market system, and giving complete rein to mechanisms to encourage keeping trust and punish breaking trust.

Values justifying this new mode of governing by numbers are made quite explicit in the document. The imperative of "sincerity" is put forward and extended to all areas by the "construction of social sincerity" and the building of "mechanisms to incentivize trust-keeping and punish trust-breaking." The national system of assessment of citizens produces measures$_1$ that are valued in a measured$_2$ judgment embracing financial credit – as in any other credit rating systems – but also economic and social reputation. This mode of governing is not only equipped with the usual array of regulations and standards shared by contemporary policies. It also rests on the credit records of citizens. Algorithmic calculations based on digital traces of their behaviors come into play. Tong Lam compared the role of social and statistical surveys in the constitution of nation-states citizens, in contrast to the relation of the empire with its subjects (Lam 2011). He commented on this Social Credit System, which combines earlier methods of control with new ones (Lam forthcoming). He observes that the growth of the non-public sector made the former Chinese "Personal file system" insufficient to accompany workers – who had no access to these files themselves – in their successive jobs. "Talent Exchange Offices" had been created locally but, in the new stage, the personal file on the individual "talent" is enriched by data mining techniques via the Internet. Pilot projects within the framework of this state plan are already developed with two of the biggest firms established in China and using the Internet, Alibaba for online sales and the Tencent holding, which covers social networks, web portals, online games, and mobile services. The digital traces they collect and process, including those from social networks, are taken into account in the new system of national evaluation of citizens, which measures$_1$ their reputation ("credit"). The Alibaba personal credit rating system named Sesame Credit tracks the personal identity, credit history, contractual reliability, behavior preferences, and personal social network of each user who is assigned a social credit score made visible to other users.[4] On the model of loyalty programs, a high credit score is rewarded with preferential treatment: faster loan approvals, expedited visa applications, and even faster check-in at some airports (Lam forthcoming). By "subjugating the everyday to the neoliberal logics and normalizing its citizens through self-regulation," comments Lam, post-socialist China is moving away from the older socialist "system of surveillance" and he concludes:

> If the proposed Chinese social credit system looks dystopian and yet strangely familiar, it is only because we have already seen and experienced fragmentary versions of it. (ibid.)

3.4 Making Human Beings "Trackable" to Digitally Govern Them

The Chinese social credit system combines two contrasted modes of governing that the information technology theorist Philip Agre distinguished in terms of "the surveillance model" and "the capture model" (Agre 1994), in a pioneering work that anticipated the politics of Big Data and its criticisms. "Whereas the surveillance model originates in the classically political sphere of state action," he wrote, "the capture model has deep roots in the practical application of computer systems" and the "tracking schemes" did not bring the capture model into existence but rather made explicit "something that has long been implicit in applied computer work" (ibid., 107). In an international monthly seminar (1994-1996), we could bring together scholars working on information representation, information technologies within social relations, and the politics of information.[5] We could compare French research on the conventional formatting involved in state statistical categorization of populations – and workforce – to Agre's research on US corporate data collection on individual activities in the workplace. In these two modes of governing by numbers, data collection, and the organizations it informs strongly differ. Nation state centralized statistics measure$_1$, such as those produced by INSEE to advise the state government on policy measure$_3$, or by international bodies providing expertise based on standardized classifications (Bowker and Star 1997, 1999), contrast with the decentralized collection of local information "capturing" individual activities within private organizations, this information being processed in real time for management. Unlike socio-professional classifications, decentralized "capture"

[4] Data From Alibaba's E-Commerce Sites Is Now Powering A Credit-Scoring Service, <http://techcrunch.com/2015/01/27/data-from-alibabas-e-commerce-sites-is-now-powering-a-credit-scoring-service/>.

[5] The seminar, supported by the *Institut International de Paris - La Défense* and the *Centre d'études de l'emploi*, led to the publication *Cognition & Information en Société* (Conein and Thévenot 1997), which brought contributions by Geoffey Bowker and Susan Leigh Star, Karin Knorr Cetina, Christian Heath and Jon Hindmarsh, Philip Agre, together with French ones by: Françoise Acker, Nicolas Auray, Marc Breviglieri, Bernard Conein, Alain Desrosières, Jean-Pierre Faguer and Michel Gollac, Laurent Thévenot.

involves the formatting of a more elementary unit of activity, like a task. Thanks to his experience in artificial intelligence, Agre related the framing of the activity to the information system used. He described in terms of a "grammar of action" the elementary behavioral units that are suitable for replication and computer input: standard actions recognized by accounting systems, telemarketing scripts, standard input-output movements of a network motorway, computer interface, or network communication protocol, tasks that break down the workers' actions into "*minimum replicable unit*" (Quin 1992, 103-9) for micro-management purposes (McDonald's, Federal Express, Pizza Hut, etc.). Agre emphasized that capture is less a collection of information, than a *de facto* standardization. He already underlined the important feedback effect of the measure on behavior: workers rearrange their activity in order not to be hindered by data collection, or to control the output of this capture.

The currently extending mode of government based on digital traces of behavior relies on connected infrastructures that are much more wide-ranging and diverse than the computer equipment that allowed capture on the workplace. Beyond individualized management of work, its aim is to anticipate individual customers' behaviors and take measure to act on them. The new mode of governing by numbers pretends to get rid of all models, but still stays de facto dependent on a marketing models to be made "smarter." Instead of explicit policies, or explicit management, the measures$_3$ that are taken in this new mode of government remain hidden and buried in furtive incentives and guidance on the targeted individuals' behavior. As an emerging ideology based on the algorithm processing of data mining, "Dataism" claims to be free from any underlying theory and categorization, and predict behaviors on correlations, without even having to produce causal statements. The real life of people would be the only basis to predict their behavior and serve a good government, stripped of all social and political theories, which would become superfluous.

Our analytical framework is useful to avoid any confusion between the real person and this new statistical measure$_1$, and to outline the kind of measure$_3$ (action taken) and government that this quantitative measure$_1$ supports. The absence of any explicit conventional form of equivalence for the measurement of the person may be mistaken for a lack of equivalence (Rouvroy and Berns 2013). Yet, like any statistics, this technique cannot operate without some formatting for equivalence. The coding format is strongly dependent on the infrastructure used to track individuals, and on algorithms, remaining concealed in the technical equipment producing digital traces.

3.5 Measuring Oneself Up in the "Quantified Self"

A government differs from the previous one while sharing with it some technologies and methods. Instead of being tracked unknowingly by one's digital traces, for the purposes of some organization, individuals are supposed to be the governing agency, deciding on the measure$_1$ of their living body or way of collecting information, and the measure$_3$ they take accordingly to modify their behavior and self. In the quantified self, the indicator to be used as a benchmark for oneself is far from obvious. The information collected by a battery of body sensors and connected objects gives form to states of the living body that were not previously formatted in institutional or public conventions and categories, nor even in personal cues resulting from familiar engagement. Uwe Vormbusch names "corporeal accounting" the "visualizing" and "writing" of the "calculated living body" in new emerging "taxonomies of the self" (Vormbusch forthcoming). However, the chain of transformations between personal bodily feelings and commonly valued notions regarding sleep, mood, sexuality, fitness, or work, is longer and more complex than the last segment of writing or visualizing, and also includes the intermediate information format driven by devices and information processing. Regarding the notion of stress, which self-quantifiers often take into account, the measure$_1$ of the living body is "Heart Rate Variability," a medical category related to emotional strain and anxiety. Information is collected by a wearable ear sensor. The interface between information processing and individuals rests on another format: the "coherent state" / "stress state" opposing categories, which relate the marketed product to data obtained through their use in what is advertised as "HeartMath research."[6] This last opaque categorization is the one that leads to visibility through a green light in case of "coherent state" and a red one in case of "stress state." Self-quantifiers collapse the distinction between the various formats of the transformation chain and only speak of "stress." "What I really need is a stress alert system" says one of those interviewed by Vormbusch, "I need something to tell me when I'm feeling stressed [and] learn how my body felt when that light was red" and this statement clearly demonstrates the performative effect (ibid.) of this measure$_1$.[7]

Vormbusch identified three main modes of valuing this governing of the self: "performance," "health," and "emotions." Through performance, it is strongly oriented towards *industrial* worth because of its equipment and representation of the living body, and not only towards the *connectionist*

[6] <https://store.heartmath.com/item/6010-e/emwave-ear-sensor>.

[7] In a one-day seminar bringing together at LSE Andrea Mennicken, Peter Miller, Uwe Vorbusch, and the author, Miller made two comments about Vormbuch's presentation regarding the extension of this notion of "stress." Although it goes deep in the intimacy of bodily states – which were even previously unnoticed – it can also be taken very seriously at high institutional levels, as when the bad results about stress in a survey on the working conditions in an academic institution lead to take measures. He also noted that there is a US tradition of stress as being a good thing. The author observed that the regime of engagement in exploration, which Nicolas Auray identified (Auray and Vetel 2014), precisely involves both excitement and fear, the combined emotion being linked to the sought-after benefit of this regime (April 25, 2017, London).

worth (Boltanski and Chiapello 2006) expected because of the global network of self-trackers, self-quantifiers, entrepreneurs, developers, and users of mobile and internet-based technologies of self-inspection who share information (Vormbusch, personal communication). Anne-Sylvie Pharabod, Vera Nikolski and Fabien Granjon (2013) identify two directions that overlap with the previous ones, "performance" and "surveillance" (which in this case mainly involves health), as well as a third that differs from them, "routinization." Performance can be made legitimate through the *industrial* order of worth, health through the *civic* one to relate it to a common good. "Routinization" and "emotions" point to less public modes of engaging valuably one's body: through the regime of *familiarity* for the first, and the regime of *exploration* for the second.

3.6 Discovering Probabilities of One's Destiny through Genomic Direct-to-Consumer Tests: A New Challenge for Self-Governing with Numbers

Distinct from the quantified-self government in that it does not rely on the capture of behavior, nor on fluctuating bodily states, another new mode of governing oneself by numbers plunges further in search for biological determinants of these states. In his PhD thesis on health concern in the age of digital and connected objects, François Romijn investigated the personal use of genomic direct-to-consumer tests in the United States. Information is collected by a saliva test sent to a company that analyses epithelial cells in search of genes – the measure_1 of their person. On the Internet, customers access the output of their genome sequencing, which was processed with big data bases. Hundreds of thousands of customers put on the web the video of the crucial moment when they find out the report, not without concern when data are correlated with risks of serious diseases, "exposing oneself in inquietude" (Romijn 2018). The received information is constituted of a long list of mutations of the individual's genome and a range of predispositions associated to probabilities or other statistical indexes. What are these predispositions and what kind of self-governing do they allow?

Some of the statistical predispositions lead to the kind of self-monitoring of one's health that quantified-self governing already focuses on. For instance, on the basis of a specific genetic mutation, a DNA report advises to take measure_3: "avoid alcohol and loud noise." As well as in the quantified self, individuals strive to make sense of a kind of internal biological information they had previously no access to, before measure_1 of it is available, and which still remains abstract to them. For this purpose, they create connecting links between this biological information format on their living body, and signs or markers which they currently refer to when engaging in *familiarity* with their body. The former customer thus comments: "I specifically noticed when I was up to drink, I don't really know what it is, liquor, wine, or tequila, but I noticed I had that really sharp pain in my jaw up to my ear. And it really hurts." And she adds: "I just knew I was sensitive to certain things but I didn't know that it was this!" (Romijn 2018, 233) Because of the newly established connection between formerly confused sensations and her genome, she finds this discovery "mind-blowing." She also relates her genetic heritage to her mother's extreme sensitivity to noises and the fact that some of her great-uncles were virtually deaf but also heavy drinkers (ibid.). Another customer relates, ironically:

> The thing that I found when I was looking through my report was that I had a genotype at a certain single-nucleotide polymorphism that is associated with a higher IQ if you are breastfed, but of course, I wasn't breastfed. So, one of the first things I did was that I called my mom angry: Hey mom, you didn't breastfed me, and I am not smart because of that. (ibid., 212-3)

These two types of linkages of data with former familiar feelings or family stories shed light on the specific features of this government by comparison to the previous one. Using new connected tools to measure$_1$, the quantified self manages to integrate biological components of one's own body (organs, blood pressure, etc.) with which the person has already established some significant and perceptual access via bodily sensations, and on which she expects measures$_3$ to be taken by herself or professionals. A plurality of evaluations (about health and various performances) are integrated in a balanced measured$_2$ judgment about the right policy. Genomic self, by contrast, relies on the measure$_1$ of other biological components – genes – that the person did not relate to earlier. The chain of their transformation into probabilistic dispositions paves the way to various valuations, to be combined in a measured$_2$ judgment. Health, longevity, sport performances or cognitive abilities are ordered in valuation scales. A customer thus rejoices: "According to longevity research, I was lucky enough to inherit two working copies of the 'heterogeneous GE'. The chances for me to see 100 years is quite large, it is huge." Measures$_3$ to be taken are less frequently concrete plans of action than the management of an enlarged self-identification. Beyond current psychological selves, and the mode of *engaging in exploration*, this genomic personality manages a portfolio of heteroclite valued predispositions. In addition to those mentioned before, the genetic heritage also connects with distant ancestors and their geographical or ethnic origins. With this last aspect, the private and intimate genomic auto-investigation joins the long series of above-mentioned statistical surveys on "eugenic," "social," or "ethnic" origins.

As the quantified self, the genomic self has strong presence on the web space. It allows engaging in public justification and critique. Genomic tests are claimed to empower individuals and collectively contributes to the progress of genomic science. Criticisms aim at the too limited access to this individual information. Romijn observes, in conformity with Anders Nordgren and Eric Juengst's own observation (2009), that the subjects' autonomy might be reduced rather than empowered because they build their bio-social identity on categories used in the test and taken without critical distance (Romijn 2018). The web allows a wider range of modes of engaging and offers a spectacular array of expressions including most intimate. Romijn notes that the web virtual audience seems to be favorable to the complex integration of the composite personality fabricated with these heteroclite quantified predispositions. It demonstrates a remarkable art of composition and the central role of irony to cope with tensions met in this composition (ibid., 255-7).

4. Conclusion

My concluding comments will focus on the individuals governed by numbers: how are their identities transformed by each government; how can they critically reflect on, or question, their identification and the mode of governing they are subjected to?

4.1 Individuals' Identity Transformed by Each Government

What are the consequences of the various modes of governing individuals on their identity? In the case of state statistics, the answer varies according to the four main configurations that we identified. The "social origin" configuration measures the individual by a socio-occupational taxonomy that partly relies on institutionalized categorizations issued from collective agreements, as well as the "occupational qualification" configuration. But the "social origin" also aims at grasping social milieu or social class differences, which are reinforced by the wide use of these state social statistics. By contrast, the cultural / ethnic origin configuration raised fierce debates precisely because of its interference with the individuals' identity: should the state reinforce multicultural or multiethnic identification through the use of such statistical measure_1 in governing? The international PISA benchmarking in education does not only shape the identity of a productive worker but enforces "the standards of the human kind who knows the future" (Popkewitz 2012, 452) and thus fits lifelong learning European policies (Normand 2011). The Chinese State social credit system affects the individuals' identity since it relies on a core value in Chinese culture, trust. Rather than to a social categorization, it leads to an individual ranking that has consequences for individuals' self-image, and their recognition by others in interactions based on the quantification of their "social credit." Managerial capture on the workplace is too fragmental to rely on previous social or self-identification. But measure_1 has implications for the relationships with the other actors who are aware of it. Digitally tracking individuals does not lead to any explicit categorization, or ranking, of individuals. Yet, guidance and incentives echoing individuals' former or similar behaviors reinforce their habits without their being mindful of it. By contrast, in the last two modes of governing oneself, self-identification is a pivotal issue. In the quantified self, it encompasses health, performance and emotions. In the genomic self, an additional feature strengthens the recognition of the individuals' identity. When they engage in the public display of the information they build their identity upon, the excitement of being exposed (Harcourt 2015; Romijn 2018) contributes to this identity.

As we move through the table (Table 1) from left to right, it is clear that the state is losing weight in the mode of government and in the formation of individuals' identity. Within the government of state statistics, the variation in the weight of the state is already significant from one configuration to another. Measurement$_1$ of individuals by their professional qualification was used in the forecasts of national medium-term manpower needs and training needs that the state planning agency produced for measure$_3$ of orientation of the educational system. Industrial worth was at the heart of the "engineering state," in Desrosières's typology (2008b). Quite different is the configuration of the measure$_1$ of individuals by human capital that leads to measure$_3$ in favor of a competitive labor market. Market worth is central in the both "liberal state" and "neo-liberal state" types (Desrosières 2008b). But the state is only one of many organizations that contribute to a government based on the measure$_1$ of human capital, which flourishes in the globalized neo-liberal educational policies of lifelong training (Normand 2011), gives a major place to individual responsibility in this government and reduces it to choices made between "a range of options provided by the instrumental devices and functionalities of accountability and evidence-based research" (Normand 2016a, 222). In addition to manpower and educational policies, unemployment policies brought pressures to bear on individuals' responsibility in keeping with the "active society" that OECD designed. Studying the "ongoing sedimentation of repertoires of evaluations" that inform contemporary reforms on unemployment in France and Denmark, Magnus Paulsen Hansen contrasted repertoires of "Paternal" (to discipline irresponsible behavior), "Incentives" (to work), "Investment" (in human capital), and "Mobility" (adaptability to the labor market) – the last three repertoires being related to Market worth – that all contribute to the emancipation of the "active" self, with the repertoires of "Redistribution" (solidarity for more equality) and "Insurance" (collectivize a social risk) – both related to Civic worth – that are criticized as leading to a passive society (Hansen 2017, 12). Composed of the repertoires of the "active" self – Paternal, Incentives, Investment, and Mobility – a variety of tests bring about a "permanent trying of the unemployed," ask "what kind of subject the unemployed is *and* hereby qualifies the precise aim and content of being 'active,'" yardsticks and "forms of legitimate coercion" being used "to ensure that the unemployed make the right choices in order to emancipate themselves" (200-1).

A final comment on individuals' identity brings us back to a major claim of government by numbers: its predictive or projective capacity. Responding to this expectation, governing numbers rest on variables that are extended notions of capital. Some of them, used in state statistics or PISA education benchmarks, are explicitly conceptualized in terms of capital: "social capital," "cultural capital," "human capital." Individuals are supposed to possess an asset from which they can expect a future return. This transformation of a capacity into a personal property or ownership overlooks the needed conventional mode of co-ordination that is required for this so-called capital asset to be valorized (Thévenot 2015b). In the computerized capture of information on the workplace, such a capital variable would be a kind of competence raising productivity. Digital traces are also supposed to allow the prediction of the individuals' future behaviors although these future deeds are not viewed as the return of an asset. The basic assumption of conformism that algorithms rely on, when counting on a past behavior, is grasped by profiling. Quantified genomic self, in which the genome is grasped as the ultimate information, brings us back to a biological kind of capital variable that was already central in the eugenic predecessors of social mobility statistical survey.

4.2 Individuals *Critically Reflecting* on and *Questioning* Each Government

Relevant governing numbers measuring individuals can be public, intimate, or even hidden to them. Information collection behind numbers is unequally explicit or obtained with the individuals' informed consent. Invisible tracking escapes such an agreement. The measure$_1$ of individuals is formatted according to conventions that are unequally made public and therefore debatable. A critical discussion would need to dig out the measured$_2$ judgments that stay at the background of each government. To what extent can critics bring to light different underlying conceptions of the good of the community and the personality, in such a way as to open a critical debate on the measures$_3$ taken by government?

In the case of state statistics, the compulsory nature of data collection can be challenged (see the debates on censuses in Germany or Canada). Valuations that underlie the choice of statistical variables may also be the subject of public debates. Yet, these debates most often remain concentrated around the statistical national agency and the scientific community. In France a gradual opening was achieved through the National Council of Statistical Information [CNIS] of which trade unions are members. For key numbers such as the Consumer Prices Index or Unemployment, the debate regularly expanded beyond these limits.

Given the central place of engaging in an (individual) plan within more recent modes of governing responsible "active" selves, Hansen observes that the voice of individuals is then limited to "a *source* of knowledge and *sign* of engagement in the plan" and

> a dependent variable in an experiment where a number of independent variables are tested; something which resembles the present obsession with 'evidence-based' policymaking. (Triantafillou 2015) (Hansen 2017, 202)

In two main public affairs he examined, Hansen sees individuals engaging in public criticisms, and observe that their voice is "almost immediately ricocheted back to [… individual] institutionalized tests" and absorbed by the dynamics of the "active society," the only difference being that it takes place in public as "intimate spectacles." Looking on the side of the new "welfare clients", Mathias Herup Nielsen observed their obligation of "quantifying the intimate to fit into the regime of planned action," which threatens their familiar engagement with their surroundings (Nielsen 2015, 761). To react against injustice and engage in a public criticism, individuals do not work at "pointing outwards towards the general and formalised rules, but by pointing inwards towards the devastated intimate relationships of trust": the individual makes a spectacle of her or himself, placing the most intimate elements of life in the most public "spotlight" (ibid., 766). As we have seen, such an "intimate spectacle" is also critical in the quantified or genomic selves governed by numbers.

Government by digital traces is most opaque and the public is left voiceless without explicit conventions to debate, as Rainer Diaz-Bone emphasized.[8] Government by means of digital tracking is an obstacle to the kind of critical debate that addresses the formatting conventions of data. When contested, this government often claims a liberating and emancipatory legitimacy based on a kind of self-government that relies solely on observed behavior of individuals and takes their most singular differences into account, by contrast with other governments. Many traces are based on a choice that is technically equipped by clicking among explicit options, a choice that can be valued in the *liberal* grammar of interested individuals differing in public. Thus, the click should not be reduced to an implicit trace as suggested by Dominique Cardon who opposes it to an explicit signal (Cardon 2015). The click may be contractual and *engage in* the individual's willed *plan* after a free informed consent. Yet many clicks while surfing the Internet do not have this value for the actor who performs them. They would rather be part of the excitement in discovery, which is the good *engaging in exploration* aims at. Other traces are linked to localizations and digitized by crossings invisible borders. A more in-depth analysis should therefore be carried out on the relationship between the technical indicator used to track and digitally code the traced activity and the actor's *engagement*. It should take into consideration the *familiar engagement* that algorithms presume because of the weight they give to past actions, as well as the *grammar of personal affinities to common-places* that these algorithms also involve since

8 In his contribution to the workshop "Comparing, measuring, evaluating. The transformation chain in the production and use of data" (Malakoff, November 24-25, 2015) and in his contribution to this volume, Diaz-Bone 2019.

clicked options also express personal attachment to such commonplaces (Thévenot 2014a).

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Why does this article borrow its title from William Shakespeare's *Measure for Measure*? In this motto, measure is the judicial term for the measuring out of justice, and the play offers a complex dramatization of various modes of judgments. The process of judgment is at the core of governing since it involves to decide on an action to be taken (by measure$_3$) on the ground of the evaluation (by a measured$_2$ judgment) of the situation taken into account (by measure$_1$). The title echoes the Mosaic retaliation law of perfect equivalency – an eye for an eye, a tooth for a tooth – between the measure$_1$ of the situation and the measure$_3$ to be taken for justice. But it also alludes to the Sermon on the Mount – judge not, that you be not judged – and the kind of measured$_2$ judgment tempered by mercy that governs the decision taken by the Duke at the end of the play. Irony in the title and content (Siegel 1953) opens up the possibility to critically reflect and discuss the motto by playing with a variety of combinations between two polar orientations of judgment: calculated justice on the basis of equivalence; suspicion towards the reduction of ethical evaluations that calculating entails, and care to temper the decision by mercy. When judging by numbers, and making quantifiable the calculated judgment and government, how could this critical and ironical play be upheld?

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All articles published in HSR Special Issue 44 (2019) 2: Governing by Numbers.