

The Numbers We Live By

by Béatrice Touchelay

Numerical indicators, gauges, kilometre limits, bed occupancy rates... Our public authorities like to take cover behind a barricade of numbers – but is its only purpose to pull the wool over our eyes?

Reviewed: Olivier Martin, *L'empire des chiffres*, Armand Colin, 2020, 298 p., €25.

The pandemic introduced measurement into the very heart of our daily lives: it restricted our right to go further than x kilometres from our homes, imposed limits on visitor or audience numbers for certain venues, and made the lifting of restrictions conditional on a quantified indicator (that of intensive care bed occupancy). Finding himself without a compass in the face of a situation that had never occurred before under the 5th Republic, did the Prince set up a barrage of numbers in order to give the impression that he was in control of the situation? Either way, numerical indicators and arbitrary thresholds served as political arguments, and did away with words, discussion, and consensus. Did the health crisis mark the defeat of the Republic of Words – the substance of democracy? Olivier Martin invites us to consider these questions, with the aim precisely of giving us the means of grappling with the numbers that govern us in order to fire up our critical abilities.

In less than 300 pages, Olivier Martin attempts to “consider all these numbers together, to identify their common root and the structuring role they play” (p. 8). He undertakes to identify the points they have in common, and to interpret their ability to measure everything (distances, durations, weights, speeds etc.). This manual, which is really more of an essay, intends to define the way in which individuals make use of numbers and to show how, in turn, these same individuals are transformed by these same numbers (p. 9). The narrative is well-informed without being indigestible, since

it relies on an impressive bibliography drawing on a wide range of sources of knowledge.

Desacralising Numerical Expertise

The introduction clearly presents the purpose, objectives and limitations of the author's approach. What constitutes a number is given quite a broad definition: they "express a quantity or a quantitative estimate" (p. 7). Studying them implies examining the process of quantification, defined as "an action and a practice", by recording "all numbers" and "all practices of quantification" (p. 8). Olivier Martin only introduces one limit to his "numerical bulimia"¹. In order to ensure that his book does not exceed a "reasonable" length, he leaves out "accounting and financial numbers" – an editorial decision that we might regret, but which the author absolutely stands by. The project he has started thus remains incomplete.

The book retraces the success story of numbers, and with it the formation of an empire which, like any empire, is riven by certain fragilities. Even when they are omnipotent, numbers are criticised – they are at once powerful and fragile, and therein lies their paradox. As "acting objects", they can be deformed and manipulated. They arouse passions and controversies, and "real" numbers are opposed to "fake" numbers, without the criteria for their "truth" being made clear.

Olivier Martin points out that, even if they are often conflated with each other, statistics only make up one part of the numbers that govern our lives. They have focussed a lot of attention since the development of the sociohistory of quantification in the 1970s-1990s, and the success of Alain Desrosières' arguments² in France or those of Ted Porter³ in the United States, the "prestige" of which prevents us from understanding numbers in their diversity. This book aims to rectify this oversight. In spite of their diversity, it connects several ways of putting things into numbers that are ignored by the sociohistory of quantification. Olivier Martin thus brings several forms of quantification into dialogue with one another: those of physical or natural measures, those of chemistry, of physics, of sociology, etc.

¹ The expressions between "... " are by the author of this essay.

² <https://laviedesidees.fr/Quantifier-pour-transformer.html>

³ Theodore M. Porter, *Trust in numbers: the pursuit of Objectivity in Science and Public Life*, Princeton N.J. Princeton University Press, 1994.

The author views numbers as social facts in the sense defined by Durkheim, that is to say as produced by society and necessary for collective life. We can only agree with him when he points out that numbers are everywhere. They are necessary to collective life and answer our needs to have at our disposal a common language with which to communicate. By offering to help us understand how these numbers have infiltrated all of our spaces of exchange, Olivier Martin invites us to share in the power they confer. He does not call for us to replace them with a new language, since he considers that excluding oneself from measurement (of time for example) would mean excluding oneself from social life, but he encourages us to “desacralise” the expertise of numbers. The historical perspective he encourages us to take provides us with precious tools to sharpen our critical faculties.

The book is made up of two parts of unequal lengths. The first explores various quantification practices. The second part outlines what they have in common.

A History of Quantification

The variety of uses of numbers can be observed over a long time frame. It arises out of the development of the system of weights and measures, in parallel to the establishment of language (p.27), which leads us to “mediate” relationships “through numbers” and through words. Time, for example, is perceived as “a social experience with collective roots” that responds to the “need to coordinate and give structure to social life” (p. 57).

Establishing the stronghold of measurement requires the strengthening of precision, of abstraction and of universalisation, from “the *hommée*” (the parcel that a winegrower can work in a day) to the definition of the international system for the main units of measurement that was introduced in 2019 and is detached from any cultural value or political control (p. 48-49).

Using the example of Great Britain, the author calls into question the strength of the “dynamics of quantification” which connects “counting, describing and comparing” to the exercise of power from the 18th century. British reticence in the face of censuses and official registers, which supposedly impinged on individual freedoms, in fact led to calculation (“political arithmetic”) being favoured over taking a census in order to “measure” the population. Everywhere, however, “the spirit of calculation”

was triumphant (p. 80). “National models” appeared during the 18th century: descriptive statistics, nomenclatures, and data comparisons in the German monographic approach; censuses and descriptions for administrative and accounting purposes in the French approach; and the mathematical analysis of quantitative data in the English approach.

Olivier Martin reminds us that it was not until after the 18th century that precision replaced “more or less”, thus echoing the arguments of Alexandre Koyré, whose work (*L’exactitude se substitue au monde de l’à peu près* – “Precision replaces the world of more-or-less”, published in 1971) is cited twice (pp. 113 and 117). The “quantitative revolution” brought together expert communities around the rhetoric of observation, measurement, and experimentation. The convergence of expert and lay practices then led to the construction of a “measured world” (p. 122) and to thinking of the universe “as a whole”. The author describes the spreading of expert mathematics into the commercial arena and scientific field, noting that this spreading benefited from the rise of printing (14th century) and then from the rise of the industry of machines linking the sciences and technologies (19th century) (pp. 124-125).

The Century of Scales

The sections devoted to the 20th century, the century of “scales” allowing us to aggregate and think of “all measures as scalable” (p. 137), seem to me to present the newest ideas. With these scales, measurement no longer serves to “identify the numerical values inscribed in the nature of things”, but rather it allows us to “represent certain empirical properties through numbers” (p. 134). Olivier Martin analyses the example of the measurement of psychic traits based on the first intelligence tests carried out by the French psychologist Alfred Binet at the end of the 19th century (p. 140). The method met with great success in the United States where, unlike in France, the tests would be used to measure intelligence. The American test, which included more elements than the French test, was interpreted in an automatic and binary manner (success or failure, 1 or 0 points). From 1916, its final result was supposed to indicate a person’s level of intelligence (p. 142) better known as their IQ (the famous Intellectual Quotient). The author notes that “the one-dimensional and quantitative concept of intelligence adopted by the North-Americans” condemns “Binet’s resistance” towards “any measurement of the level of intelligence” and of “any hierarchisation of individuals”. The normalisation of these tests in the United

States during the 1920s foreshadowed the development of psychometric scales in psychology, leading to the measurement of depression (p. 144) or of addictive practices (p. 145). For the author, “the generalisation of scales in medicine contributed, together with public statistical data and specific studies, to introducing quantitative approaches into the humanities and social sciences” (p. 146).

The author also condemns the harmful effects of the generalisation of indicators used for performance-oriented ends (p. 149). Olivier Martin explains the success of these indicators through the transformations undergone by the state, which has appeared as a “problem” and sought “rational management principles in order to account for its activities, compare it with those of other European countries and curb the public deficit” since the 1960s and, even more so, the 1970s. We might regret the fact that he does not mention the rationalisation of budgetary decisions, the mechanisms of which also use measurement, although he describes the “doctrinal puzzle” of New Public Management (p. 151), which “fragments the administration into autonomous units, introduces tools for results-based management and measures performance according to the model of a corporation” (p. 152), and generalises “numerical competition” (p. 162).

A Transversal Approach

The second part of the book draws conclusions from the lessons taught us by the surveys that it has presented beforehand. It shows how quantification is a social fact. Nothing new there – but the book provides a good summary from which we might draw a few major lessons: measurement practices are not natural, even if “the need to quantify is probably universal”, the “way of responding is very variable” (p. 180); measuring and quantifying pertain to the same action (“putting into numbers what words were already qualifying”), combining conventions and powers, recording, conservation and communication practices and technologies⁴ (p. 184); technical changes are no more than responses to organisational problems, quantification takes root at a local scale and is then generalised (p. 189). It acquires a specific form of authority and becomes inscribed “in the real”, even though it is no more than a construct.

⁴ “The Paper Revolution” analysed by Delphine Gardey, *Écrire, calculer, classer. Comment une révolution de papier a transformé les sociétés contemporaines (1800-1940)*, Paris, La Découverte, 2008.

Olivier Martin makes special mention of algorithms, “which actively participate in the avalanche of numbers”, but “without the way they function always being well-known or discussed within representative political arenas”. He thus invites us to reflect on the power inherent to any act of quantification (p. 194), referring back to numerous struggles to impose systems of measurement (p. 195), starting with the one concerning the calendar of the French Revolution (p. 197). He also invites us to reflect on “the apparent neutrality of measurement”, which allows it to elude any calling into question outside of the circle of its creators.

The author also investigates why quantification has been so successful, despite its being “neither a proof of scientificity, nor even necessary knowledge”, but rather becoming established during the 19th century (p. 208) when “performance indicators replaced judgement” (p. 209-210). Quantification then asserted its authority in the political and economic arenas independently of transformations in the sciences, driving a transition from government by law to government by numbers (pp. 213-215) and subordinating individuals to programmes that are not put up for debate (p. 217). For Olivier Martin, this transition is embodied by New Project Management (p. 217). The belief in the capacity of calculation to form the foundation for the entirety of our mode of organisation then allows us to “consider societies by purging them of debate” and to subject them “to quantified laws that elude contradiction, the sacred principle of law” (p. 218). We might note that the generalisation of quantification was also desired by French reformers of the interwar period who, following with Auguste Detoeuf or Maurice Allais, believed that the development of quantified information would be enough to eliminate class struggle⁵... These “visionaries” of the 1930s had seen that “quantifying allows us to establish trust, to depersonalise tensions” (p. 227). Yet the book still encourages us to “call into doubt the pertinence of the system” since it forbids us from “discussing the indicators”. It stresses the paradoxes of this “putting into numbers, which allows us to manipulate individuals just like we program algorithms” (p. 219), but which, in return, provides “voters with the means of forging their decisions in the voting booth” (p. 234) and “puts power under surveillance” (p. 235), then becoming a weapon of the poor.

Olivier Martin shows that quantification proceeds from a choice (p. 251) that is itself not neutral. He points out that “operations of quantification are among the softest forms of power”, holding for example that “GDP remains indispensable due to its capacity to draw connections and reduce phenomena” (p. 259), a view we might well

⁵ Olivier Dard, *Le rendez-vous manqué des relèves des années 30*, Paris, Puf, 2002.

disagree with. These “automatic technical responses” (p. 260) equate each difficulty with purely technical questions and allow us “to govern without giving the impression that we are governing because reality imposes itself upon us” (p. 261). In this sense, quantification is at the heart of public policy, and shapes our way of understanding the world (p. 263). It is a convincing demonstration.

In conclusion, the author reminds us that, paradoxically, while “quantifying” is a “social, intentional and collective act”, “the idea that numbers are neutral, rational and objective tools” (p. 266) has gained the upper hand. He invites us to “take hold of these numbers again” in order to “be less subjected to their authority”, to “better know” the choices that they “silently embody” and to “develop our critical vigilance in order to reclaim their construction” and emancipate ourselves from their grasp. This appeal seems all the more vital given how numbers are ceaselessly extending their dominion.

Critical Notes

Let us finish with a few critical notes. The author’s choice of writing what is first and foremost to be viewed as a manual does not seem to me to be completely thought-through, since the book lacks an index that would have been extremely useful for locating the numerous figures that populate its chapters. The bibliography, of course, has a few “holes”, and is particularly weak on historical references. Thus, at several points, numerical indicators are associated with selective and comparative ideologies (p. 162) that were supported by the architects of eugenics, including Francis Galton, or by a Nazi ideology that promoted ideas of social selection, competition between individuals, and a constant striving for performance. One cannot be an expert in everything, but these claims would have benefited from being backed up by specific historical references, and in particular by the works of Adam Tooze⁶.

The reader is left with a few regrets too. The editorial decision to not examine accounting numbers, which are in fact touched on a little, the absence of research into the counter-powers to this dominance of numbers – for there surely must be some – and the absence of references to the failures of quantification, or to aborted

⁶ Adam Tooze, *Statistics and the German State, 1900-1945: The Making of Modern Economic Knowledge*, Cambridge University Press, 2001; *The Making And Breaking Of The Nazi Economy. The Wages of Destruction*, London Allen Lane, 2006.

experiments, such as the proposals for Accounting Plans that were never and never will be used. While the stages in the construction of “the empire” are clearly described, are we not left alone with the task of analysing the characteristics of the empire preceding that of numbers, when commerce or power did not require a common yardstick? Was it “the empire of words” which, just like numbers, constituted a common language?

The example of French economists who rejected the mathematical economy of Léon Walras in the 19th century and opposed a reasoning through words to a reasoning through numbers goes against the development of the dominance of numbers as described by Olivier Martin⁷. The analysis of these tensions between a France of words and a France of numbers and the study of forms of resistance to the imperialism of numbers must still be carried out⁸. The same goes for the analysis of sceptics, who refuse to respond to questionnaires in official surveys, or to fill out demographic census forms, and who quietly resist the domination of numbers. And yet, even these “resistants” are under the influence, since they use an alarm clock, take their temperature, buy yards of cloth and have their fruit weighed at the market. What is their opposition worth?

Conclusion

On top of a profusion of examples taken from a vast sample of texts, the main contributions made by *L'empire des chiffres* are of two types. By reconstructing the stages of the formation of this empire over a long period of time, Olivier Martin first shows that numbers respond to the needs of collective life, are put at the service of science, and then assert their authority by imposing themselves at the heart of the evaluation of public policies. Secondly, these analyses show that, even if the utility of numbers is undeniable, the legitimacy conferred on them by their apparent scientificity and their proximity to political power must be up for debate.

⁷ Lucette Le Van-Lemesle, *Le Juste ou le Riche. L'enseignement de l'économie politique, 1815-1950*, Paris, CHEFF, 2004.

⁸ An expression coined by the first managing director of the INSEE, Francis-Louis Closon, in “La porte étroite” (“The Narrow Door”), 1956, 6 p. Text provided by its author.

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