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Comprendre pour changer
*les équations sociétales,
leurs construction et
utilisations*



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BRUXELLES

What is a number? Sociology and history of “numerical practices”

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What is a number?

A historical sociological perspective

- Analysing the practice and uses of numbers, measurements and quantifications.
A sociological and historical approach to numerical practices and quantifications.
≠ Distinct from an ontological, epistemological, mathematical or philosophical point of view
- Draw on historical, sociological and anthropological studies :
 - Building social, economic and demographic statistics
 - Measuring time
 - Weights and measures; the International System of Units (metric system)
 - Metrological practices, scientific and laboratory practices
 - Contemporary scores and numerical evaluations
 - Evaluative and classificatory practices, ratings of goods and services
 - Quantified self
 - ...
 - ... in a nutshell: scores, ratings, measurements, statistics, indicators, rankings, evaluations...
- Try to identify the similarities between all these types of "numbers"

What is a number? Some answers

Contents

- 1) A brief history of quantification
- 2) Why do we quantify? Why are numbers produced and used?
- 3) What is a measurement / number / quantification?
- 4) Is our world quantitative?

(1)

Some features of the history of quantification

(1) Some features of the history of quantification

- Counting, measuring, quantifying: very long-standing practices
 - We didn't wait for the scientific revolutions, or the technical and industrial revolutions of the 19th and 20th centuries, to quantify/measure
 - At least as old as organised societies (Mesopotamian city-states)
- Immense diversity and heterogeneity of practices:
 - Variability of practices over time and space, depending on the protagonists, the aims, the products, etc.
 - Multitude of practices and tools (apparent "metrological chaos")
 - Diversity and dependence of instruments that provide different and not "compatible" numbers

(1) Some features of the history of quantification

- "Meaningful units", i.e. units that carry a meaning specific to the purpose of the measurement, its context, the protagonists involved in the measurement, the nature of the products measured and the *raison d'être* of the measurement.
- The practice of "quantifying" is essentially one of appreciation, comparison, sharing and the search for balance (using "units"): "quantification" is not the objective.
 - Example of clepsydra to control speaking time
 - Example of Roman time: "second hour" \neq "2 hours".
 - Example of land surveying (man of law \neq geometer-man of science)
- It would be anachronistic to see this as quantification in the current sense of the term.

(1) Some features of the history of quantification

- Gradual convergence of practices ("synthesis")
 - Example of time :
 - Because of the need for coordination with multiple partners
 - Long-distance coordination needs (role of communications: transport, telephone, radio, TV, internet, markets, etc.)
 - Convergence of all forms of measurement (common, scientific)
 - Gradual introduction of regulations and controls to ensure confidence
- Little by little, quantities became independent of instruments.
- Little by little, the terms used were simplified and standardised.
- De-"meaning", abstraction and universalisation of quantifications
 - We end up with abstract conventions/notions, universal, "natural" because they are naturalized

(2)

Why do we quantify?

Why are numbers produced and used?

(2) **The reasons for "quantification "**

- Need for coordination, articulation, exchange
- Need for decision-making, choice, comparison
- The need for justice and trust
- ... and then the need for 'scholarly/scientific' knowledge, the construction of empirically-based scientific knowledge

(2) The reasons for "quantification "

- Scholarly/scientific' reasons (knowledge of reality; empirical objectivity) did not take hold until late in the eighteenth century, and especially in the nineteenth and twentieth centuries.
 - "To know, you have to measure"; "There is no science except what can be measured", "What cannot be measured cannot be known", "One measurement is worth a thousand expert opinions"...
- Quantification was not born with science and is not synonymous with science. We must not be blinded by our contemporary culture.
- Perhaps we need to add a new, very contemporary logic/motive: the 'rhetorical' need, the need to be 'scientific' and to appear 'objective'.

(3)

What is a measurement / number / quantification?

(3) The three ingredients of any quantification

(a) Technics, practices, technical skills

- Presence of instruments and techniques (both tangible and intangible)
- The quantitative revolution (late eighteenth and nineteenth-twentieth centuries) coincided with revolutions in technology, industry, organisation, communication, etc.

(b) Conventions, agreements

- No quantification without conventions, even if they are highly variable
- Technical necessity (to make measurement possible) + Social necessity (to establish the relationship between protagonists)
- Uniformisation, internationalisation, standardisation of conventions (which gives them this apparent property of naturalness)

(c) Power, authority

- Define the units, principles of measurement, measuring instruments and tools
- Define the quantity to be measured
- Carry out the measurement
- Certify measurements and measuring instruments
- *Dialectical relationship*: power enables measurement; measuring gives power

(3)

What is a number?

From the point of view of social practices, it is the result of quantification, which involves :

- agreeing on a quantity,
- conceiving a technical system for quantification,
- and being able to implement or even impose it.

(4)

Is our world quantitative?

(4) A new look at the "quantitative" nature of our world

- Are numbers part of the nature of the world?

Is the world quantitative?

Do numbers have an ontological reality?

....

- These are not questions for a sociologist or historian.

(4) A new look at the "quantitative" nature of our world

On the other hand, the sociologist/historian can see that we have built a “quantitative world”:

- Our choices and decisions are indexed to numbers (e.g. school, hotel and restaurant league tables, public policies, economic choices, etc.).
- We set ourselves numerical targets and set up “numerical competitions”: Numbers can no longer simply be used to describe...
- We define and use categories that can be quantified (e.g. wealth, unemployment, etc.)
- We operationalise concepts and quantities by quantifying them (e.g. intelligence, inflation) – Numbers become the thing (performative effect)
- We produce self-fulfilling facts, self-fulfilling prophecies (e.g. rating agencies)
- Vast areas (social, industrial, political, scientific) are organised around quantitative indicators (e.g. psychoatric scale) - which makes them all the more essential and reified.

(4) A new look at the "quantitative" nature of our world

Our “world is quantitative,
not because of its naturally quantitative nature,
but because we have made it quantitative”.

“So it's not surprising that numbers are seen
as good descriptors of societies”.

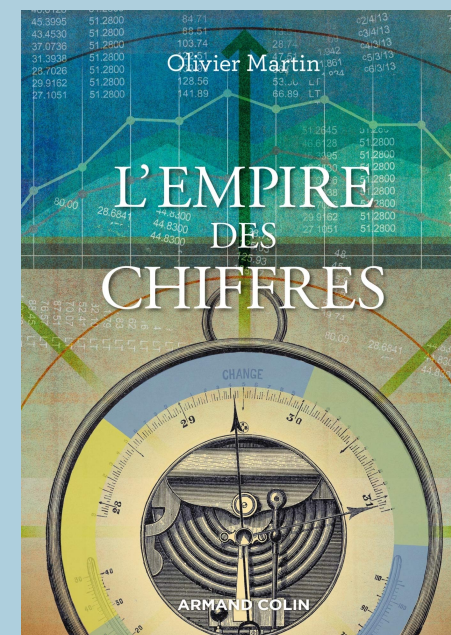
Chiffre, p. 75-82

Thanks!



Chiffre

Anamosa, 2023



L'empire des chiffres.

Une sociologie de la quantification

Armand Colin, 2020

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