



## Knowledge and Participation: which Democracy?

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### Abstract

A new impetus for recollecting information seems regaining appeal, maybe heir of the “social indicators movement”. The movement was an heir to the supporters of quantification in the Social Sciences, as numbers were believed to be objective and scientific per se and information was considered to be a citizen’s right.

The study of society in its various dimensions has stimulated the search for and construction of statistical indicators and indices. The search for a better way of studying the progress of societies has often led to inappropriate uses of indicators and measures. GNP, for example, has been commonly considered to be an indicator of well-being. The lack of a conceptual frame for studying well-being is not the only problem, nor even the greatest. Of similar importance – or even greater – are the meager statistical skills of journalists, policy-makers and – in general – the public. All together, these elements facilitate limiting the use of data in public debate.

In this paper, I will consider the shift from political arithmetick to modern social reports (par. 1); the success of quantification in the administration of the State (par. 2); the misuses of quantification (par. 3); the current non-use of quantification and the search for contextual conditions that interfere with the transformation of information into knowledge (par. 4).

**Keywords:** SOCIAL INDICATORS — POLICY — DEMOCRACY — QUANTIFICATION — WELL-BEING — KNOWLEDGE

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## Conocimiento y participación: ¿qué democracia?

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### Resumen

Un nuevo ímpetu por la recolección de información parece estar ganando terreno, tal vez heredero del “movimiento de los indicadores sociales”. Este movimiento fue un legado de quienes apoyaban la cuantificación en las Ciencias Sociales, en la medida que los números se creían objetivos y científicos *per se* y la información se consideraba un derecho ciudadano.

El estudio de la sociedad en sus múltiples dimensiones ha estimulado la búsqueda y construcción de indicadores e índices estadísticos. Sin embargo, el interés por contar con mejores formas de estudiar el progreso social ha conducido, muchas veces, a un uso inadecuado de indicadores y medidas. El PBI, por ejemplo, ha sido frecuentemente tomado como un indicador de bienestar. Pero la carencia de un marco conceptual para el estudio del bienestar no es el único problema, ni siquiera el más importante. Una significación similar –o aun mayor– la tiene la escasa competencia estadística de periodistas, hacedores de políticas públicas y –en general– la ciudadanía. En conjunto, estos elementos coadyuvan a limitar el uso de los datos en el debate público.

En este artículo abordo el cambio desde la aritmética política hacia los modernos reportes sociales (par. 1); el éxito de la cuantificación en la administración del Estado (par. 2); los usos inadecuados de la cuantificación (par. 3); la actual no utilización de la cuantificación y la búsqueda de condiciones contextuales que interfieren en la transformación de la información en conocimiento (par. 4).

**Palabras clave:** INDICADORES SOCIALES — POLITICA — DEMOCRACIA — CUANTIFICACION — BIENESTAR — CONOCIMIENTO.

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## Knowledge and Participation: which Democracy?

### Introduction

Democracy, information, knowledge, numbers, numeracy. In this paper I will show the connections (or their lack) between them and trace the road from “political arithmetic” to modern social reports, illustrating the factors that contributed to introduce quantification in the public discourse. However, as will be shown in the last section, the mere possibility to know the state of the nation is not the same as to use that knowledge.

### 1. The hidden information

The activity of gathering information on social subjects has an old story. Inventories with fiscal and administrative purposes were a common practice in the ancient Egypt as in the Roman Empire. In 1086 appears in England – promoted by William the Conqueror – the Domesday Book, very similar to a modern census. In 1288 Bonvesin da la Riva published a work dedicated to the city of Milan, giving a detailed description of the topography, demography, and architecture of Milan and its environs: a very different and innovative approach from the usual one of that period. Another example is given by John Graunt, who in 1622 published *Natural and Political Observations Made upon the London Bills of Mortality*<sup>1</sup>: one of the «pioneering works in the history of statistics and demography, Graunt’s book laid the foundation for a quantitative study of society, providing numbers for the total population of London, the mortality rates for different diseases (including plague), the ratio between the sexes, and measures of longevity» (Rusnock 2005: 66-67). In 1696 Gregory King published the *Scheme of the Income and Expense of the Several Families of England Calculated for the Year 1688*, in Laslett’s words «the earliest reckoning of a gross national product, the first attempt at distributing that

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<sup>1</sup> See Hull (1896; 1899), Cullen (1975) and Piovani (2006, 17), for the debate on the authorship of the *London Bills*.



product between classes, households and individuals, in fact the point of origination of the very concept of a national income, even of the whole tendency to look at societies in their entirety, taking every single member into account» (1973: 3). Nevertheless, sovereigns did not have the possibility to rely on reliable information: depending on the sources, French population in XIV and XV century was estimated between 112 million and 120 billion people. As stated by Reynié, «le roi qui se sait roi ne sait pas de qui il est roi»<sup>2</sup> (1992, 43).

The development of communication and transport systems, the diffusion of accounting techniques and the rise of mercantile capitalism, all these factors required the systematic recollection of information on population, disposable resources and commercial flows (Lazarsfeld 1961; Braudel 1972: 369; Pinkney 1986: 50-51; Bruschi 1999: 234; Kiser & Kane 2001: 202; 205). But only a bureaucratic organization – in Weberian terms – would have permitted the gathering of such information in a permanent way. As Weber pointed out, bureaucratic administration built his rational dominion on knowledge (1922a/1995, I, ch. 3). Following Weber (1922/1995, II: 48), Habermas (1962) considered *calculability* and impersonality in the administration of the State as consequences of capitalism needs. But the relation between power and knowledge has been deeply analyzed by the Frankfurt School and by Michel Foucault. The former emphasized that large accumulation of facts and links between them was a science task in order to assist industries and government (Horkheimer & Adorno 1966: 259; Horkheimer & Adorno 1956: 142). The latter saw the activity of production of information on life conditions into biopolitics, an expression by which he defined the institutional basis of the European power system, born in the mid of XVIII. In his writings, the concept of population assumes a focal position: power can be exercised on population, and not on subjects; for that reason, population needed to be studied in order to be used in the production of wealth, goods or other individuals.

«La découverte de la population est, en même temps que la découverte de l'individu et du corps dressable, l'autre grand noyau technologique autour duquel les procédés politiques de l'Occident se sont transformés. On a inventé à ce moment-là ce que j'appellerai, par opposition à l'anatomo-politique que j'ai mentionné à l'instant, la bio-politique. C'est à ce moment que nous voyons apparaître des problèmes comme ceux de l'habitat, des conditions de vie dans une ville, de l'hygiène publique, de la modification du rapport entre natalité et

<sup>2</sup> *Amplius*, see Hecth (1977, I: 34-35) and Reynié (1992: 45).



mortalité. C'est à ce moment qu'est apparu le problème de savoir comment nous pouvons amener les gens à faire plus d'enfants, ou en tout cas comment nous pouvons régler le flux de la population, comment nous pouvons régler également le taux de croissance d'une population, les migrations. Et, à partir de là, toute une série de techniques d'observation, parmi lesquelles la statistique, évidemment, mais aussi tous les grands organismes administratifs, économiques et politiques, sont chargés de cette régulation de la population. Il y a eu deux grandes révolutions dans la technologie du pouvoir: la découverte de la discipline et la découverte de la régulation, le perfectionnement d'une anatomo-politique et le perfectionnement d'une bio-politique» (Foucault, 2001: 1012-1013).

Finally, Foucault directly connected knowledge and power, going back to William Petty:

«En prêtant au mot un sens différent de celui que lui donnaient au XVII<sup>e</sup> siècle Petty et ses contemporains, on pourrait rêver d'une «anatomie» politique. Ce ne serait pas l'étude d'un État pris comme un «corps» (avec ses éléments, ses ressources et ses forces) mais ce ne serait pas non plus l'étude du corps et de ses entours pris comme un petit État. On y traiterait du «corps politique» comme ensemble des éléments matériels et des techniques qui servent d'armes, de relais, de voies de communication et de points d'appui aux relations de pouvoir et de savoir qui investissent les corps humains et les assujettissent en en faisant des objets de savoir» (Foucault 1975: 33).

Foucault's approach was then drawn on by stressing the coercive power of numbers on individuals in order to convert them into objects able to be manipulated (Cohn 1987: 224; Anderson 1991: 163; Appadurai 1996). On the other hand, such a position was offered by Petty himself:

«And finally when wee have a cleere view of all persons and things, with their powers & families, wee shall bee able to Methodize and regulate them to the best advantage of the publiq and of peticular persons» (1661/1927, I, IV, 25: 90).

And where power is not exercised with ostentation, it takes action insidiously, as census can be an instrument of social control and institutionalization of differences.<sup>3</sup>

<sup>3</sup> Many authors consider statistics as a social construction (Kitsuse and Cicourel 1963; Hacking 1990; Rose 1990; Poovey 1998), by which it is possible to create an oppressive language, institutionalizing normality and abnormality. But there is no unanimity in considering normalization and individual control as an expectable result of quantification. On the contrary, the success of numbers entails freedom for the individual: Sherman (2001) state that quantification has give back to individual his own responsibility, showing him as his poverty



The systematic activity of gathering information modified the same reality it was supposed to study (Desrosières 1989: 232 ff.). On the other hand, it favoured innovative approaches on the theory-side, by modifying the unit of analysis. Studies by Booth, Rowntree, Bowley etc., all contribute to overcome the ideological view of poverty seen as a breach, a pathology, to be attributed only to the individual. This is well demonstrated in 1848, when an outbreak of cholera focused attention on Britain's city slums; the "Economist" opposed the passage of a Public Health Bill declaring:

«Suffering and evil are Nature's admonitions; they cannot be got rid of; and the impatient attempts of benevolence to banish them from the world by legislation, before benevolence has learnt their object and their end, have always been more productive of evil than good» (in Abrams 1951: 25).

Similarly, the diffusion of expressions like "rate of criminality" (around 1830) and "unemployment rate" (in the early 1900's) underlined the collective responsibility at the expense of the unlucky or reprehensible individual person (Himmelfarb 1991: 41; Porter 1995: 37). In the same way, suicide is no more attributed to each single individual, and their regularities became properties related to society on the whole, as in the Durkheimian production.

## **2. The State and its mirror**

The expression Political Arithmetick, coined by William Petty, made explicit the conjunction between two spheres until then thought as separated: on the one hand, reason of State, the privilege of aristocratic elite; on the other hand, arithmetic, a "vulgar" discipline cause her ties with trade. Petty thought that the use of numbers would allow

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is the result of aspects that he may control. Porter (1995; 2005) and Hess (2000; 2005) draw the attention to the introduction of the thermometer in order to take directly our own temperature, without having to contact an intermediary (the doctor and his opinion. «No doubt the quantification of body temperature is only one example of a new social technology. But the standardizations that prepared the way for quantification in the hospital and in daily life did not simply serve to document, measure, control and regulate the individual. They also somehow allowed the individual to regulate and control this social technology» (Hess 2005: 122).



the impact of personal and subjective opinion in State strengths determination to be neutralized:

«The Method I take to do this, is not yet very usual; for instead of using only comparative and superlative Words, and intellectual Arguments, I have taken the course (as a Specimen of the Political Arithmetick I have long aimed at) to express myself in terms of *Number, Weight, or Measure*; to use only Arguments of Sense, and to consider only such Causes, as have visible Foundations in Nature; leaving those that depend upon the mutable Minds, Opinions, Appetites and Passions of particular Men, to the Consideration of others» (Petty 1690: vi-vii; italic in the original).

Torgerson pointed that the dream of «putting an end to the strife and confusion of human society in favor of an orderly administration of things based upon objective knowledge» was «prevalent in the Enlightenment of the 18<sup>th</sup> century and was reasserted with the advent of positivism in the 19th century» (1986: 34). And in particular, quantification of social phenomena should have guarantee an objective knowledge; statistics is then seen an indispensable science for a liberal state. As stated in the 1860 statute of the Statistical Society of Paris —statistics is “nothing else than the knowledge of the science of facts [...] It ought to provide the basis upon which society is governed” (in Porter 1995: 80).

The search for objectivity was explicitly stated in the program of the Statistical Society:

«The Statistical Society will consider it to be the first and most essential rule of its conduct to exclude all opinions from its transactions and publications –to confine its attention rigorously to facts– and as far as may be found possible, to facts which can be stated numerically and arranged in tables» (British Association for the Advancement of Science 1833: 492).

Thus objectivity —supposed to be an intrinsic property of numbers— would have allowed politics to decide in a rational way on economic and social topics; so rational that if “facts” would be known, disagreement would cease. This statement, clearly an heritage of the true genuine positivism, will be – as we will see in the following paragraphs —a point of view common also with the later “social indicator movement” of the Sixties.

It should be evident that all those initiatives were led by economic, fiscal and political reasons; thus it was quite obvious that all those statistics had to be kept secret. As we can read in the Discours historique à Monseigneur le Dauphin sur le Gouvernement



intérieur du Royaume (1736), “Le secret qui est l’âme des grandes affaires, est surtout nécessaire dans les finances. Plus les forces de l’Etat sont ignorées, plus elles sont respectables” (in Brian 1994: 155). In the words of Bonvesin da la Riva:

«Don’t do it! How many troubles follow good intentions! This pamphlet will arrive to some stranger tyrant; and he, listening to the wonders of Milan, will be infatuated with the city that he will find a way, with a trick or by deception, to subdue it» (da la Riva 1288: 55; my translation).

Numbers were not always to be kept secret. In the Ancient Rome, numbers were public, used as symbolic tools to highlight the Empire strength.

«A Rome, au seuil de l’ère chrétienne, l’empereur donnait à connaître aux citoyens authentiques l’étendue de l’Empire. L’ostentation du nombre des hommes, manifestation supposée de la puissance collective, trouvait son sens dans le jeu d’une structure sociale précise. Le mandataire rendait compte à ses commettants de leur puissance commune. Il consacrait par ce geste à la fois son autorité sur eux et leur domination sur les autres sujets» (Brian 1994: 154).

In a different way, the French Bureau de Statistique «aimed to gather and publish information to promote an informed citizenry» (Porter 1995: 79). The successive Restoration government did not have quantitative research amongst his priorities, but a new vision of statistics was born, a vision that was spread also abroad. For example, Italian Melchiorre Gioja defined statistics as “quella somma di cognizioni relative ad un paese, che nel corso giornaliero degli affari possono essere utili a ciascuno o alla maggior parte de’ suoi membri, od al governo, che ne è l’agente, il procuratore o il rappresentante” (1826/1837, 4). The work of offices which produced official statistics was no more considered for the sole use of governments, but in the service of society.

As Cohen remind us, Erastus Root, writing in 1796 an introduction to arithmetic spelled out explicitly the interconnections between common arithmetic, decimal money, and republican government:

«It is expected that before many years, nay, many months, shall elapse, this mode of reckoning [decimal money] will become general throughout the United States... Then let us, I beg of you, Fellow-Citizens, no longer meanly follow the British intricate mode of reckoning. —Let them have their own way—and us, ours.—Their mode is suited to the genius of their government, for it seems to be the policy of tyrants, to keep their accounts in as intricate, and perplexing a



method as possible; that the smaller number of their subjects may be able to estimate their enormous impositions and exactions. But Republican money ought to be simple, and adapted to the meanest capacity» (Root 1796; in Cohen 2003: 11).

So, Cohen synthesizes, «bad governments prefer complicated money and innumerate citizens who cannot figure out how a tyrant can be fleecing them, while republican governments should make it possible for people of “the meanest capacity” to be able to decode the country’s budget and tax policy» (Cohen 2003: 11).

The initiatives for the betterment of conditions of poorest people backed by trade unions, nonprofit organizations and religious groups in the late 1800’s and at the beginnings of 1900’s gave a strong impulse to the use of numbers in the study of society, especially in the United States<sup>4</sup> (Cohen 1982; Cobb & Rixford 1998; Tobin 1995: 538). Only in the winter of 1929, the activity of gathering information on social topics was institutionalized. Herbert Hoover – who commissioned the report *Recent Economic Changes in the United States* when in charge as Secretary of Commerce, aiming at ameliorating national statistics on commerce – as President of the United States set up the Research Committee on Social Trends to investigate the overall condition of the nation, in particular the social conditions of life in the American society: healthcare, housing, welfare services (Hoover 1952: 312). Although the report issued in 1933 was received by contrasting views, it was «the first official document devoted to social measurement, covering numerous social conditions such as demographics, health, and education» (Cobb & Rixford 1998: 8). But this impetus in the social accounting did not succeed in surviving the incipient economic and financial crisis, all the efforts being concentrated in ameliorating the econometric tools. Shackle (1967) described the years from 1936 to 1939 as the roaring years for economics: in those years we can cite seminal works by Keynes (1936), Leontief (1936), Kuznets (1937) and Tinbergen (1939).

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<sup>4</sup> «Around 1910, the Russell Sage Foundation initiated the development of what are now called “community indicators” using processes that are remarkably like the ones that have been re-established in the 1990s. Sage provided a grant to the Charity Organization Society (of New York) to survey industrial conditions in Pittsburgh (Smith 1991: 40-41). After the study was released in 1914, the Russell Sage Foundation was besieged with requests to fund similar studies in other cities. Since it did not have the funds to do that, the foundation provided technical advice instead. Partly as a result of this initiative, over two thousand local surveys were taken on education, recreation, public health, crime, and general social conditions» (Cobb 1998: 6-7).



It was only in the mid-1960's that the economists' influence on the US public administration started to see its first troubles. The traditional way of reporting the welfare of the nation were harshly criticized because based only upon economic parameters, traditionally, GDP and GNP. As in the famous words by Robert Kennedy:

«Too much and for too long, we seemed to have surrendered personal excellence and community values in the mere accumulation of material things. Our Gross National Product, now, is over \$800 billion dollars a year, but that Gross National Product – if we judge the United States of America by that – that Gross National Product counts air pollution and cigarette advertising, and ambulances to clear our highways of carnage. It counts special locks for our doors and the jails for the people who break them. It counts the destruction of the redwood and the loss of our natural wonder in chaotic sprawl. It counts napalm and counts nuclear warheads and armored cars for the police to fight the riots in our cities. It counts Whitman's rifle and Speck's knife, and the television programs which glorify violence in order to sell toys to our children. Yet the gross national product does not allow for the health of our children, the quality of their education or the joy of their play. It does not include the beauty of our poetry or the strength of our marriages, the intelligence of our public debate or the integrity of our public officials. It measures neither our wit nor our courage, neither our wisdom nor our learning, neither our compassion nor our devotion to our country, it measures everything in short, except that which makes life worthwhile. And it can tell us everything about America except why we are proud that we are Americans» (1968).

Those words echoed the earlier ones written by Bliss:

«The land is the endowment of the Creator and its increase in valued does not represent an increase of wealth – on the contrary, with forest and mines and the fertility of the soil to a large extent exhausted, there is a decrease instead of an increase of wealth of this character. Could the few be enabled to pre-empt the air as they have the land and compel us to pay for the privilege of breathing it, we should have an increase of property values» (1897: 99).

Notwithstanding all the critics, the work conducted by the economic counselor of the government and research institutes as Brookings became a model for all who wanted to apply social science to government action and searched for analogous criteria for projecting social policies (Carley 1981: 17; Land 1983: 3). In this way, the American Academy of Arts and Sciences started to study —funded by Nasa— the indirect consequences of spatial programs on US society; the main difficulty, said Bauer, Biderman and Gross, was in the lack of data. The report was seen by Gross as «a symptom of a



widespread rebellion against what has been called the “economic philistinism” of the US government’s present statistical establishment» (1966: ix).

A new impetus made available a large number of national social reports<sup>5</sup>, not to say the large amount of information now at our disposition thanks to organizations as Undp, Ocse, etc. And this abundance of information is more and more important (even if sometimes we should talk of information overload) if we agree that «the citizens of democratic governments [...] need good information, to assess their leaders’ political decisions and judge them on election day. [...] it is increasingly the case that candidacies in the modern era can be won or lost based on the unemployment rate, the crime rate, or the Dow Jones index. Our multitudes of numerical indicators summarize the complex economic, political, and social health of the country, and citizens need to be able to decode and decipher this modern-day “political arithmetic”» (Cohen 2003: 7).

So, it is a legitimate position pretending to «move beyond the naive enthusiasm for “political arithmetic” characteristic of the early nineteenth century, which valued numbers for their seemingly objective, neutral, and therefore authoritative status» (Cohen 2003: 8), and to deal with two important issues:

- 1) the symbolic and constructed uses of political numbers that can both convey and hide important information, and
- 2) the absence of adequate and equally distributed information among citizens.

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<sup>5</sup> But the use of quantification of social phenomena for purposes of social engineering was not shared by all. In 1968, Russell Sage Foundation published *Indicators of Social Change*, edited by Wilbert Moore and Eleanor Bernert Sheldon: in this oeuvre, the authors contrasted not only using social indicators in the decision-making process, but even the publication of an annual social report. The priority had to be given to the research and the betterment of the process of gathering information (Sheldon *et al.* 1983: 79). Accordingly, problems and theoretic foundations were clearer in the “social” domain than in the economic one (Sheldon & Freeman 1970). «It is important that it be recognized, particularly by the policymaker, that the social indicator movement, neither in conceptualization nor in state of the art, is ready to deal effectively with the problems [...] that surround policy development and implementation» (Sheldon and Freeman 1970: 110). If it can be recognized that sociology failed – not only in the 1970’s – to converge in a unique one paradigmatic view of social phenomena, the preference accorded to economics may be the result of a process of idealization, and simultaneously of underestimation of the complexity of economic issues.



### 3. The misuses of quantification

As many of his predecessors, Ogburn thought that *social reports* should be based on “facts”, not opinions, and that data and trends had to be presented without any interpretation. In Ogburn’s view, the social world can be known only by “facts”, from enumeration and measurement of social phenomena. And if the study of society and social trends is based on facts registration, then statistics is the only reliable discipline; for that reason, he said, «all sociologists will be statisticians» (Ogburn 1930: 4-6). His approach dominated the work on the following social indicators research.

*Recent Social Trends* —inspired by Ogburn— was well reviewed, except by Sorokin, who criticized the fact that «Anything that cannot be “measured” is to be banned or, at best, barely tolerated somewhere at the outskirts of the “objective and scientific” study [...] they have given us an irrelevant set of figures» (Sorokin 1933: 196; 197). And aiming at better grounding his critic, Sorokin reported some extracts from the report, above them the following one:

«One month after issue, 180,000 copies of a government pamphlet on furniture, its selection and use, were distributed (1931) [...] Six hundred thousand objects are lent annually by the St. Louis Educational Museum alone [...] The sale of Navajo blankets is reported as above \$1,500,000 in 1930 [...] The town of Ottawa, Kansas, with a high school population of 431 has an orchestra of 90 that has four times won the state contest» (cit. in Sorokin 1933, 197).

His conclusion, drastic and at the same time caustic: «Was there any need of this painstaking elaboration of the obvious?» (Sorokin 1933: 200). Sorokin’s critics may be valid for a lot of today’s works: infatuation for numbers obscured the importance of conceptual refinement, pushing into the background semantic analysis, i.e. intensional characteristics of concepts. This is a broaden problem, that goes beyond this single report. The quest for precision is often incongruent: incongruent compared to the level affordable for the techniques used in data production and to the nature of the properties studied. Presenting decimals at all costs often is used to hide the lack of substance of our tables, gaining an easy credibility (Marradi 1993: 53; Horn 1993, 18). This is a common practice, to such a degree that has several names: *fallacy of the misplaced precision*, *fallacy of misplaced concreteness* (Horn 1993: 18), *specious accuracy* (Morgenstern 1950: § 3).



«Changes in consumers total spending power are reported, and taken seriously, down to the last billion (i.e., about one-half percent!), price indexes for wholesale prices are shown to second decimals, when there have been so many computing steps that the rounding off errors alone may obliterate such a degree of precision. Unemployment figures of several millions are given down to the last 1,000's (i.e., one-tenth of one percent accuracy!), when even the 100,000's or the millions are in doubt» (Morgenstern 1950, 6).

«The study of politics, like the study of economics, is usually a one-digit science at best; in fact, we do well to get the sign right more than half the time. How then can anyone be asked to take the third, fourth, and fifth significant digits seriously? Why do professional journals publish that computational debris?» (Tufte 1977: 312).

In the same way Eberstadt commented FAO's statistics:

«The FAO reports, for example, that Chad's per capita food supply rose exactly six calories per day (that is, 0.3 percent) between 1977 and 1980, and that per capita food supplies in Afghanistan and Chad differed by exactly seven calories per day (or 0.4 percent) in 1980. For the periods in question, however, it is thought that upward of 90 percent of the populace of both countries was probably rural and illiterate, and as much as half of the production of goods and services in both countries may have occurred in the non-monetized economy. (Even these estimates are only speculation, since a comprehensive economic survey has never been attempted in either nation; at the time of these FAO estimates, in fact, neither country had ever published a census of its population)» (1995: 171).

So, the words by Thomas and Thomas seem to have been written today: in searching the reasons of the distrust of statistics, they found «the unwise manipulations of data that are often made, [...] the expression in terms of great precision of results obtained when complicated formulae are applied to very inexact data, and [...] the totally erroneous assumption on the part of many statisticians that the statistical results tell all that can be told about the subject» (1928: 570-1). As distrust of statistics is an old issue, there are plenty of other citations which we may cite, but one of the most famous is surely the one from Durkheim:

«On sait, malheureusement, que les constatations officielles sont trop souvent défectueuses, alors même qu'elles portent sur des faits matériels et ostensibles que tout observateur consciencieux peut saisir et qui ne laissent aucune place à l'appréciation» (1897/1990, 144).



#### 4. Knowledge as a democratic issue

The second issue (the absence of adequate and equally distributed information among citizens) can be synthesised by only one question: *When information is well constructed, and it is at our disposition, who cares?* As pointed out by Curtin (2007: 1), it is an international custom being surprised that some survey finds that a high proportion of people could not name their representative in the legislature (Delli Carpini & Keeter 1996), nor did they have accurate knowledge about common medical conditions (Lucas 1987), correctly know about planetary orbits (Lucas 1988), the current rate of inflation or unemployment (Blendon et al. 1997; Blinder & Krueger 2004; Curtin 2007), or the Consumer Price Index (CPI) and the rate of growth in the Gross Domestic Product (Curtin 2007; Giovannini 2008a)<sup>6</sup>.

Curtin indicate that only «one-third of all [US] respondents reported that they knew the most recently published official rate of unemployment, one-in-five reported knowledge of the most recently published rate of change in the Consumer Price Index, and about one-in-six knew the most recently announced official rate of growth in the Gross National Product. What was an even more dismal assessment of the public's knowledge of these official statistics was that one-fifth of all respondents reported that they had never heard of the official rate of unemployment published by the Bureau of Labor Statistics, one-third reported that they had never heard of the official change in the Consumer Price Index, and four-in-ten reported that they had never heard of the Gross Domestic Product reported by the Bureau of Economic Analysis» (2007: 7)<sup>7</sup>.

Similar results have been found in Europe; the survey on citizens' knowledge of economic indicators conducted in the spring of 2007 by Eurobarometer<sup>8</sup> showed that

<sup>6</sup> Further examples in Lusardi and Mitchell (2009); Lusardi, Mitchell and Curto (2009 and 2010); see also the reports published by The PEW Research Center ([www.peoplepress.org](http://www.peoplepress.org)).

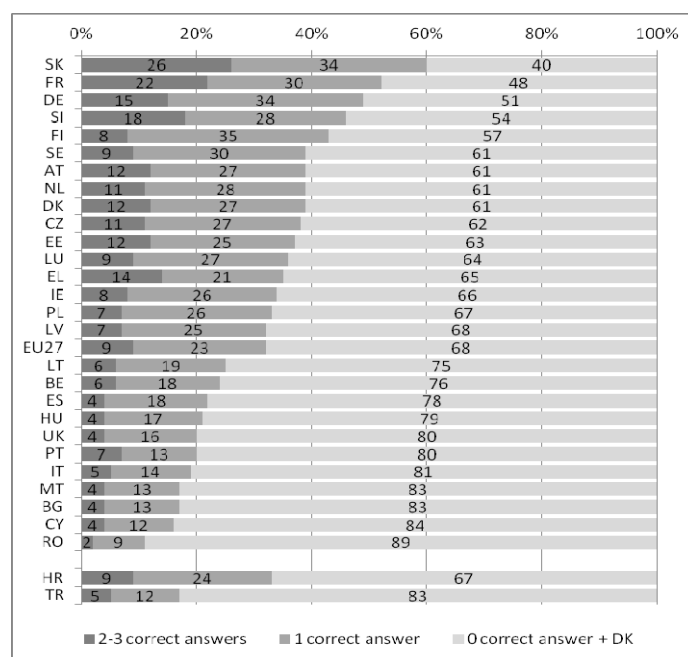
<sup>7</sup> «To be sure, even fewer people reported that they knew the official rates when the opt-out option was given to the respondent. About half as many respondents provided a "rate" answer when the opt-out option was given for the unemployment rate (26% versus 43%), the Consumer Price Index (13% versus 27%) and for the Gross Domestic Product (9% versus 23%). The data clearly indicate that people were quick to take advantage of the question skipping option» (Curtin 2007: 7).

<sup>8</sup> Between April 10th and May 15th, as part of the Eurobarometer wave 67.2. It covers 30 countries and territories: The 27 EU Member States, its two candidate states Croatia and Turkey as well as the Turkish Cypriot Community (Eurobarometer 2008: 4).



large proportions of citizens throughout Europe claim not to know their country's growth rate, inflation rate or unemployment rate<sup>9</sup>. Even in those countries where people were generally most inclined to give estimations for these figures (i.e. Denmark, the Netherlands, Slovakia and Germany), more than a third of respondents replied "don't know" (Eurobarometer 2008: 42). Figure 1 shows the main results of Eurobarometer's survey, reporting the percentages for 2-3 correct answers, 1 correct answer and 0 correct answer (this last percentage including the 'don't know' option).

Fig. 1. Knowledge of the national growth rate, inflation rate and unemployment rate.  
Percentage of answers not differing more than +/- 20% from official  
growth, inflation and unemployment rates



Source: Eurobarometer (2008: 27).

<sup>9</sup> In the EU as a whole 53% of citizens admitted not to know their country's economic growth rate (Eurobarometer 2008: 13) and their country's inflation rate (*ivi*: 18); 48% say they do not know the unemployment rate in their country (*ivi*: 23).



Furthermore, the proportion of citizens who trust official statistics (46%) is similar to the proportion claiming that they do not trust official statistics (Eurobarometer 2008: 37). Trust in official statistics reaches its highest levels in the Netherlands (77%), Denmark (73%) and Finland (69%) while the least trust is found in France (with 60% who tend not to trust), the United Kingdom (58%) and Hungary (55%).

On the other side of the ocean again, we can mention the AmericasBarometer surveys by the Latin American Public Opinion Project (LAPOP), in which 40,990 respondents from Latin America and the Caribbean received questions – among others – as «What is the name of the current president of the US?», «How many [provinces/departments/ states] does [country] have?», and «How long is the [Presidential/Prime Ministerial] term of office in [country]?»<sup>10</sup>. Incorrect and “does not know” responses were coded as 0, and correct responses were coded as 1, and an additive index from 0 to 3 was created<sup>11</sup> (Fig. 2). Even if the operacionalization of ‘political knowledge’ is quite simplest<sup>12</sup>, two specific variables stood out as the most informative: «education and access to media at home had the strongest effects on political knowledge» (Batista Pereira 2011: 5, 6).

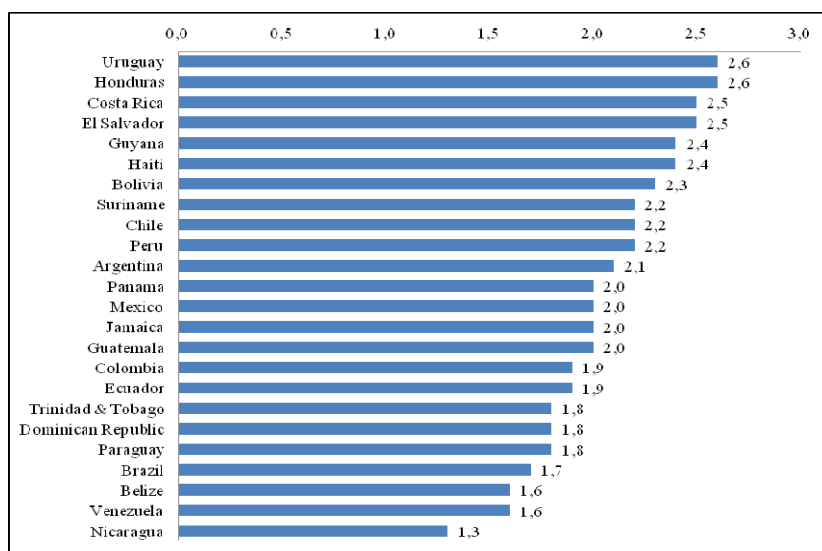
<sup>10</sup> The LAPOP data can be accessed at [www.lapopsurveys.org](http://www.lapopsurveys.org)

<sup>11</sup> The rate of “Does not know” responses in these 24 countries was respectively 19.5%, 25.2% and 8.9%, although the LAPOP question wording did not offer explicit “Does not know” options (Diaz Dominguez 2011: 1).

<sup>12</sup> Converse’s answer to the conventional complaint about measures of political information based on knowledge of minor facts is well known: although Converse took as example the question on the length of terms of US senators, he wrote that «this is a tiresome canard. Information measures must be carefully constructed and multi-item, but it does not take much imagination to realize that differences in knowledge of several such “minor” facts are diagnostic of more profound differences in the amount and accuracy of contextual information voters bring to their judgments for extended proofs» (2000: 333). Anyway, maybe a more exhaustive battery would have been better. The same Converse recommended that «information measures must be carefully constructed and multi-item» (*ibidem*), as stated by the old lazarsfeldian lesson on concepts and indicators.



Fig. 2. Political knowledge in Latin America and the Caribbean, 2010.  
Mean number of correct answers (min=0, max=3)



Source: 2010 AmericasBarometer by LAPOP, cit. in Díaz-Domínguez (2011: 1).

In a similar way<sup>13</sup>, Boidi concludes, talking about Mexico, that «those who already have other resources (education, wealth) are those with the higher levels of political knowledge. Political knowledge is an additional resource that those who have received more benefits from the system can put to work in order to be more favored, and that those who need more the system to work for them lack» (2007: 29). We can say with Delli Carpini and Keeter that «individual, systemic, and contextual factors have a reciprocal relation: they feed one another, and this mutual influence, by promoting a spiral of knowledge, is one reason there are great disparities in knowledge levels between individuals» (1996: 19). It's not a surprise to see that for US citizens they found «significant, often dramatic group differences in levels of political knowledge, with groups

<sup>13</sup> The 2004 Mexico LAPOP survey asked four questions with the aim to tap political sophistication. The questions were designed to inquire on factual political knowledge. Interviewers were asked whether they knew the name of the US president, how many states there are in Mexico, the length of the presidential term in Mexico and the name of the Brazilian president. On this survey, see Boidi (2007).



that are most disadvantaged in the social and economic spheres (women, blacks, low-income citizens, and younger citizens) also the least informed, and thus least equipped to use the political system to redress their grievances» (*ibidem*, 18; see also Ch. 4).

Those research findings are important for understanding the function of national statistics in implementing democratic accountability. Voters «can vote responsibly only if they have reasonably accurate information about national economic performance. This information, of course, is often made accessible when it is summarized as statistical trends. [...] Here, then, is a contribution of public statistics to the workings of democracy» (Prewitt 1986: 115). Again in the words by Prewitt, a «democratic society is preserved when the public has reliable ways of knowing whether policies are having the announced or promised effect [...] Numbers, a part of this publicly available political intelligence, consequently contribute to the accountability required of a democracy» (1986: 119). Steen warns that «an innumerate citizen today is as vulnerable as the illiterate peasant of Gutenberg's time» (1997: xv).

But how to conceal those theoretical findings with crude reality, where it becomes difficult to do rather simple arithmetic operations (OECD 2006)? For example, the Adult Literacy and Life Skills Survey results confirm the IALS findings that many adults have difficulties coping with literacy<sup>14</sup> and numeracy<sup>15</sup> related demands that are common in

<sup>14</sup> Literacy is referred to «the ability to understand and employ printed information in daily activities, at home, at work and in the community – to achieve one's goals, and to develop one's knowledge and potential»; there are three domains of literacy skills: «a) prose literacy – the knowledge and skills needed to understand and use information from texts including editorials, news stories, brochures and instruction manuals; b) Document literacy – the knowledge and skills required to locate and use information contained in various formats, including job applications, payroll forms, transportation schedules, maps, tables and charts; c) Quantitative literacy – the knowledge and skills required to apply arithmetic operations, either alone or sequentially, to numbers embedded in printed materials, such as balancing a chequebook, figuring out a tip, completing an order form or determining the amount of interest on a loan from an advertisement» (Oecd 1995: 14).

<sup>15</sup> As stated by O'Donoghue (2002: 47), «the research literature contains no universally accepted definition of numeracy». Cockcroft (1982) identifies the source of the concept and the term numeracy as the Crowther Report (1959), which defined numeracy 'as the mirror image of literacy' (par. 398) «We would wish 'numerate' to imply the possession of two attributes. The first of these is an 'at-homeness' with numbers and an ability to make use of mathematical skills which enable an individual to cope with the practical mathematical demands of his everyday life. The second is ability to have some appreciation and understanding of information which is presented in mathematical terms, for instance in graphs, charts or



modern life and work. Furthermore, depending on the country, between one-third and over two-thirds of adult populations do not attain the level considered by experts as a suitable minimum level for coping with the increasing demands of the emerging knowledge society and information economy (Statistics Canada & OECD 2005: 31).

So, yes, numbers may contribute to the accountability required for a democracy, but we have to discover how. Social sciences can help in that task searching for the best way of statistics communication. The main question is, as pointed out in the Eurobarometer's report, «How can data regarding social and economic progress [...] be more widely disseminated among the general public? Even more importantly, how can such information be transformed into knowledge among citizens? (Eurobarometer, 2). The point is still the one stated by Henriot:

«The task of rationalizing decision-making requires not only discrete bits of information but also the organization of that information into coherent patterns. It seems certain that more and more data will be gathered at all levels of government; what is less certain – and yet more significant – is that the data will be effectively coordinated» (1970: 237).

There is also another point: «policy decisions in Europe are increasingly taken in the supranational and intergovernmental arenas», while «the nation-state has remained the primary focus for collective identities, and public debates and citizens' participation in the policy process still seem mainly situated at the nation-state level and directed at national authorities», thus at the origin of Europe's "democratic deficit" (Koopmans & Erbe 2004: 97).

«Although citizens are bombarded by information on a constant basis, this bombardment does not necessarily bring about knowledge» (Giovannini 2008a: 178). If «what people know must not be confused with the amount of information they receive every day and absorb from the most disparate sources» (Giovannini 2008b: 5), then we have to argue that there is not an automatic equivalence between knowledge and exposition to information. As Somin reminds us, we have witnessed «little or no change in political knowledge levels over the last 50 years, despite greatly increased education levels and a parallel increase in the availability of information through electronic and other media» (2006: 270). As stated by a report by the National Research Council, given «the

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tables or by reference to percentage increase or decrease» (Cockcroft 1982: 11; cit. in O'Donoghue 2002: 47).



relatively low level of numerical and statistical literacy in the population at large, it becomes especially important to provide users with interfaces that give them useful, meaningful information. [...] The goal is to provide not merely a data set but also tools that allow making sense of the data». (NRC 2000, 20).

Giovannini (2007) identifies those tools in the ability «to harness the energy of collaborative data-sharing through the likes of Web 2.0, and with the growing influence of blogging and the many tools that facilitate the rapid transfer of information». But this cannot be confused with a simplistic enthusiastic support for information and communication technology, given that it reduced the cost of producing statistics and «nowadays a huge number of organisations is able to produce statistical figures and indices, frequently picked up by media [...] and this contributes to create a sense of “confusion” [...]. This “noise” does not help at all citizens to make the best possible choices, including the electoral ones, and this is not a good thing for the functioning of economic markets and the democracy» (Giovannini 2008a: 178). Unfortunately, fewer attention has been dedicated to statistics communication, while it should be seen as an integral part of their production and dissemination (Maggino & Trapani 2009: 2). Better levels of communicating and disseminating results are surely welcomed, but this will sort no effects without adequate numeracy and literacy levels – both on public and policy-makers side.

## **Concluding remarks**

Statistics quality is a long time studied subject, but a lot has to be written on indicator construction (and the question is “why using such an indicator?”) or on indices formulation (and the question is “how many information are we accepting to loose in the synthesis process?”). Quality of information visualization is a key subject for the future, strictly interrelated to dissemination process and to the citizen’s numeracy: how many times have we listen to an affirmation like “hmmm statistics? Numbers are not for me, thanks!”? Better presentations and reinforcement of dissemination alone are not sufficient: a citizen need to be able to read, write, calculate and read numbers.

We have seen that social phenomena quantification was not an easy task, and that several concomitant factors introduced numbers into the public discourse. From a phase when basic information such as population was unknown, to the one in which numbers



were known but had to be kept secret, we have arrived till today, with a large amount of data available, but with little support to citizen's knowledge. Our is surely an information society, but is it a 'knowledge society'?

Let me close quoting Mills' words:

«Freedom is not merely the chance to do as one pleases; neither is it merely the opportunity to choose between set alternatives. Freedom is, first of all, the chance to formulate the available choices, to argue over them – and then, the opportunity to choose. That is why freedom cannot exist without an enlarged role of human reason in human affairs» (Mills 1959: 174).

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