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# Moral and immoral in economic quantification

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**Summary:** *Could there be something immoral in economic measurements and quantification? Could there be immorality in statistics? It is often said that statistics is a lie, an untruth, a delusion. Lies are dishonoring and deeply immoral, and are incriminated by both religious and juridical norms. Where do these accusations against statistics come from? They derive from the obvious modern strive for excessive simplifications, from ignoring scientific rigor and from eluding theoretical principles by narrow pragmatic solutions. What is the critical point that shifts to economic thinking? In measurement: the formula. Who released it? Where and when was it released? By whom, where, when and how is it used? In quantification: aggregation and data systematization. We systemize and process data without asking ourselves how much of the economic and social content that we are studying remains in the shapes that we have built.*

## Introduction

In its simplest and most concise definition, ethics is the theory of moral life, comprising the doctrine of the essence of moral, as well as laying the bases for a system of norms, values, moral categories, for a moral code.

What is moral philosophy? Although this question has preoccupied humanity since the oldest times, and philosophical schools are still looking for an answer, most people associate the terms *moral* and *morality* with certain norms of the individual's conduct in society, norms of conduct deriving, of course, from convictions, attitudes, skills, feelings. Every norm provides a pattern of behaviour, but it also entails the temptation to break the norm, to elude it. I have wondered whether the norm concerns only the individual's behaviour in society towards his fellow human beings, or any individual attitude and action regarding or not, involving or not, „touching” or not, the other individual.

Today, the interest in ethics, morals, has shifted to the world of ideas, sciences, arts, spirituality, politics, fields where questions are frequently asked like: „What is moral in art?”, „What is moral or immoral in research?”, „What is immoral in chemistry?”, „What about in IT?”, „What about in medicine?”, „What about in statistics?”. Was the world of sciences dominated by these questions several centuries ago? No, or at least not as frequently as it is today. A succinct answer, which covers the whole universe of sciences, was formulated simply, disarmingly simply, by a famous painter: „What is immoral in art is to make art without being talented”. Immorality appears and develops where there is no talent, no vocation, no calling, no resonance, no sufficient knowledge (scientific or practical). What is immoral in medicine is to practice medicine without a vocation and knowledge, what is immoral in economic quantification is to use scientific methods without a proper and complete knowledge of these. In both cases, ***it is immoral not to use scientific knowledge wisely. It has to be brought close to the real world, to the social and economic actuality.***

In this context I have wondered whether there can be anything immoral in economic measurements and quantifications. Can there be immorality in statistics? It is often said that statistics is a lie (an untruth, a delusion). A lie is a dishonoring and deeply immoral act, and it is incriminated by both juridical and religious norms. And still, the disease of the statistical untruth haunts the economic and social space without the possibility of a juridical solution. Moreover, justice expands its activity, it bases its existence on the statistical and economic untruth, on the social untruth and its derivatives (calumny, conflicts, etc...). It is no news that inter-human relations are replete with immorality, and if this is no news, it is no longer important, no longer taken into consideration, it isn't of any interest, it doesn't demand radical solutions, only local „anesthesia”.

## 1. The statistics within the economic decision

I am going to look at the statistical theory and practice, as a main source of information for the decisional act. In his book „The Reign of Quantity and the Signs of the Times“ (written and published around 1940) Rene Guenon (10) warns against an illusion, a deception by statistics, because „a rather obvious characteristic of the modern mentality is that of **excessive simplification**“. Simplification of what? Of reality through measurements and quantification. Why? Due to the high speed with which economic and social processes and phenomena take place at present. At the same time, another characteristic of the modern mentality is the tendency to excessively ignore the scientific rigors in the concrete economic and social analyses, especially as regards statistics as it has been developed over time, eluding theoretical principles by narrow pragmatic solutions which serve particular interests or cases.

Within the context of the entropic law that governs the economic activity, work and information are being considered anti entropic economic factors. Within the subtle unfolding of competition and the present managerial activity, their entropic potentiality decreases step by step towards disorder within the economic area. Where does disorder come from? From lack of work or being misinformed or badly informed.

Is these a speculation of the mind to consider that such a reality entailed within the world of ideas theoretic systems such as “the theory of the chaos” (during the 60s), the theory of dissipative structures or that of catastrophes (70s)? Even of these theories stem up within the context of exact sciences, we cannot deny the fact that they were inspired by the specific of the economic and social life of that time.

In order to consider disorder an element of the order or to reduce the error to a partial and deformed look of any truth, we must rise up through knowledge above the generations whose domain this disorder is linked to.

But as the error itself has its reason to exist, as error and disorder must find their places among the elements of the universal order, sometimes we wonder, it is true that late sometimes, how much we are allowed to make mistakes not to amplify disorder and we also wonder how much we had been wrong. We make mistakes in the managerial process quite often due to the bad information that comes from economic and social information systems.

Within the decisional process, the information is the bleed which leads to action. A good decision mainly depends on the quality and opportunity of the information used. With the information boom registered by humanity, man is first of all “homo informationalist” and “homo algorithmicus” creating patterns and algorithms (8).

The information explosion coerces the quickness of decisions that strengthens the role of information and their working out. The relationship information – decision is being described by Andre Deville (1) using the “oval amonte” methodology of proceedings regarding the complex substantiatiny of decisions. By taking over and developing the idea of the author, information must not represent a purpose as such but a basis for decisions substantiation as the information activities proceed, condition and follow the decisional ones.

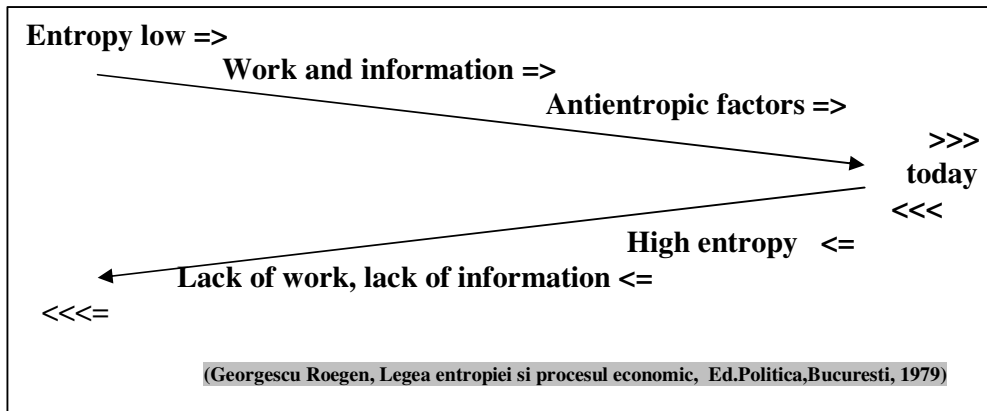
Therefore, information must have the following qualities ():

- be necessary
- be pertinent
- be exact and complete
- be recent and transmitted in due time
- be efficient from an economic point of view,

that is occasional amassed expenses, those of transmission, processing and storing be compensated by the advantages obtained by their being used within decisional process.

The necessity, relevancy of information are qualities linked to the volume of the data collected. As for as computerization gives the possibility of processing and storing a large volume of data (of which only some are being used within the decisional process), the enforcement of the principle of exception that recommends the exclusion of redundant data is being asked and in this way the volume of the information collected is limited. But this must be understood in the sense of rationalizing and simplifying without missing the exactedness of the information.

The exactedness and relevancy of the information can be affected by the imperfection of the language in which it is being shaped or the imperfection of the message.



Such situations lead to non-communication, to the degradation of the decisional act. Finally the economic information, whether accounting like, or financial, or statistical or any other, can reach a human executor and the level of professional and psychosocial value can influence the decisions too.

There is another characteristic of modern mentality, namely that of excessive ignoring of science – statistics mainly, as it has been developed along the centuries.

How do we ignore or simplify the statistic information? We find ourselves facing some of the following situations:

- we are users of statistical information having or not a computer available.
- we are providers of statistical information having or not a network of computers available.

We can be users and suppliers of statistical information at the same time as far as we are both a system and subsystem according to the theory of systems.

On such positions we can create the feeling of lies, falsity because statistics does not lie but the data are being used in order to lie.

In what respect the lying sensation is being created?

Where, when, how ... are we wrong?			
Information PROVIDER	Measurement, quantification Data systematization Using the analysis method Graphic representation Result interpretation	Knowing the statistical instrument, the formula Knowing the statistical method Ergodicity. The Bayes principle The need for information	Information USER

## 2. How to ignore or to simplify the information by measurement

What does it mean to measure? We determine the value of an indicator, directly, as a ratio of the indicator we measure to its measurement unit. Production by its specific unit of measurement, meters, kgs, etc, or by number of items, transactions by the value volume multiplied by the prices practiced. But to measure also means to determine the value of an indicator indirectly, by using a formula which uses values obtained by direct measurement. Company profitability, work productivity in an economy, unemployment rate, inflation rate, etc.

Here we find the sensitive point: the formula. Regarding which we ask the questions: Who, where, and when launched (designed) it? Who uses it, when, where, and how? Let's not forget that in the theory and practice of statistics, one finds oneself permanently and almost simultaneously in the position of information user and information provider.

There are theoretical areas and of economic analysis which take the formula out of its statistical context, and use it as one would use an instrument taken out of a kit, without remembering to put it back in its place every now and then, in the matrix where it was designed, tested, used and eventually redesigned. In other words, forgetting to re-place the formula within the category it belongs to, to recall again the principles of this category in order to use it correctly. I am thinking here about

cost and value analyses at a microeconomic level, but also about inflation and stock exchange analyses at a macroeconomic level. We use indices, create derivatives based on them, and ignore or maybe forget the „mother” category with all that is specific to it. Thus automatism, mimetism, economic and social stereotypes set in, together with all their derivatives.

Ex 1: The Dow Jones index is, at its origin, an average index belonging to the average category. When the stock exchange activity diversified and quotation divisions were introduced, the index was taken out of its matrix (statistical mathematics) and adapted to the economic area where it was used. The effect of share divisions is corrected by the calculation of a divider, which is periodically updated. The indicator is no longer an average value, an instrument that can be generalized for any domain, it was „ripped” out of its matrix, particularized and „stuck” in the subject matter of Wall Street transactions. In 1997 the Bucharest Stock Exchange launches the BET index, starting from a basic statistical instrument, the Laspeyeres average index. In order to compensate for the artificial effects of divisions, company mergers, or other changes in the share capital on transaction prices, the index value is adjusted by a correction factor „f” on the day when the change affects the quotation.

The artifice of the correction factor reduces the strength and relevance of the indicator, relativizes it and makes it more sensitive in time and space. Whether we find ourselves in the position of the provider or of the user of statistical information, knowing the artifice added to the basic construction helps our understanding and reasoning.

Ex2: Let's also think about dynamics analyses which use change rates and dynamics indicators incompletely known, and therefore incompletely used. Moreover, the variety of economic areas of analysis has led and is still leading to the appearance of a large number of variants, or surrogate indicators. For example, for one and the same economic phenomenon followed in its evolution, we find that *the change rate after 12 months is 2.6%, the annualized change is 6.4%, the annual change is 2.7%, the change in the current year is 4.8%, and the change at the end of the year is -2.1%*. All the expressions above refer to forms of the same indicator: the dynamics index. Are these supportive of a correct economic decision? Yes, if ***we know the formula, the category it belongs to and the specificity conferred to it by the field of analysis.***

### **3. How do we ignore or how do we simplify the information by quantification?**

What happens through quantification? We establish the concrete, discontinuous values an indicator may have, we impose conditions on an indicator such that its values vary in waves, discontinuously. We go from quantics, from the atomicity of the economic and social space to the macroscopic world of companies, of institutions, of societies, of the structures which make up the economic and social architecture of this world. An important loss takes place at this stage: we synthesize the results, as they occur in every atom, simply by making them discrete and then adding them up. Then we create their corresponding statistical design, systemize them on the interval scale, obtain statistical distributions, distribution tables, contingency tables, association tables, without asking ourselves how much of the economic and social space we are studying stays in the „shapes” we have created statistically. Some economists say: this is not important because according to the law of large numbers differences compensate each other. If the positive and negative differences mathematically compensate each other, do they remain the same in their economic content? Can they stand compensation?

Ex3: By analysing the turnover, the net profit, the market value of shares, and other indicators for 100 companies, and by using primary data, we find that the percentage of companies having a profit of up to 50 mil in the total registered profit is of 11.4%. By using systemized data we find that this percentage is of 18%. What is the effect of this considerable difference on further economic analyses in which the indicator above, a structure indicator, is used as primary data?

Ex4: We work out regression functions on economic components, or on time series, and make forecasts at a micro or macroeconomic level, without revealing the error („impotence”) of the model. If we are not aware of the model's sensitivity, if we launch it with precision and use it without any reserves in decision making, if we do not know its degree of significance and don't „feel” its lack of significance, then reality will retort to our ignorance by disproving the statistical model. I am thinking now about analyses on the financial market and on the stock exchange, about budget plans and analyses, etc whose result has been promptly and harshly contradicted by the real phenomena in those fields.

The social and economic reality is not some easily modelled plasticine, it is a mixture of existence, a material and spiritual dough which theoretical systems must approach with caution. They

must approach it in **good knowledge** and **wise patience**, with **deep understanding**, with professional friendship, that is with **talent and vocation**.

#### 4. How does the user ignore or simplify information?

Going from the area of information production to that of information use, the issue of correct or wrong, moral or immoral still remains of importance. A large part of the information content used in the decisional process is given by the receiver, i.e. the information user. ***The information does not consist only of the data and the indicators obtained from the statistical analysis, but also of the the specificity given by the user's professional, economic, social, and scientific context.*** We speak of transinformation, as a factor reducing entropy (4). From a theoretical perspective, transinformation is defined as the information about the emitter contained in the receiver field, or as a correspondence between the emitted and the received message. How much of what information users know is statistical information? Using example no 2 from point 2, the question which arises is: which of the five indicators is useful in decision making and best answers the need for information?

The issue of ergodicity is being discussed today. Beyond the term's mathematical aspect, beyond its content of subjective probabilities, of statistical averages and of temporal averages, (11) as the mathematical theory of random processes describes them, we must remember that in simple terms, ergodicity refers to the manner in which information users infer various things, reach a conclusion on something based on information about something else. This is a specific aspect of the theory of selection, which searches for the whole truth by looking at the part. When is a generalization correct, and when is it not? The answer to this question is what ergodicity is about. If the generalization leads from individual particular cases, from the part, to a general ergodic whole, then it stands a chance of being correct. When is a collectivity under study (statistical, economic, social) ergodic? The answer to this question sends to Thomas Bayes' theory .

Bayes and his followers explain what is happening with subjective probabilities when you receive or get a new piece of information. For example, when we refer to the information expressed in a statement or in a numerical expression (indicator) we assign it a certain plausibility. How does this plausibility change when we receive some new information? The idea has something in common with the one launched in 1962 by Umberto Eco (7). According to this idea, an individual engaged in communication presents a „first degree“ opening as regards assimilation valencies. After receiving the first message he generates a „second degree“ opening by integrating this message into an already existing repertoire.

A subjective probability always depends on what the receiving subject, the information user knows at a given time about the phenomenon studied, or about the method of analysis. In other words, the content of information is equally determined by the provider (emitter) and by the user (receiver). If somebody knows the market evolution of a soft drink over the past years, and the methods by which its dynamics can be studied, then an evolution index, or a seasonality index, or a future estimated level can be more or less plausible, relevant or significant for the one who informs himself. More so for the situations when that someone is the decision maker in a structure.

Information users always find themselves in different areas of action and interest: economic (financial, accounting, marketing, trade, managerial, etc), social (health, justice, education, administration, etc), political, etc. In each of these domains there are specific methods, instruments and procedures of quantitative and qualitative analysis, whose common element is given by statistics and mathematics. Knowing these two theoretical areas becomes thus very important because it considerably influences transinformation.

#### 5. Conclusions

Can we speak of talent when it comes to data use in the economic decision? Talent is an outstanding, natural (inborn or acquired) ability in a given field, and vocation is talent plus something else, talent plus inclination, calling. Are these two attributes enough for professional behaviour? Thinkers, philosophers, essay writers on the problems of the contemporary world add the dimension of moral talent. To be morally talented means to have the intuition of the ethical actuality, of the social, economic reality, that is to elude, maybe to betray the letter of the law, the letter of the scientific theory in order to remain loyal to its spirit. To have moral talent also means the ability to shift attention from a scientific or ethical principle, to one solving a concrete situation according to its maybe unique face, but, as we were saying in the first part of the paper, by preserving the principle.

Any particular economic analysis (of value, of dynamics, of correlation, etc) gives specificity to the scientific instruments and methods used, fills them with meaning. ***To conduct such an analysis with professional responsibility is a commendable act. To do it with professional virtue is excellence. Professional responsibility involves effort, professional virtue involves joy.*** The philosophers of our times note with sadness that today we speak more about professional responsibility than we do about professional joy (12). And this is another abyss in which the world of science turns into darkness.

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