

History and Economic Theory

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As a distinguished member of Scottish Enlightenment, Adam Smith elaborated his Political Economy in order to explain how the progress¹ of the humanity is performed. His intention was to establish a new science about the operative principles that explain the improvement of the human conditions measured in the most material and quantitative sense. What is the reason for which some countries had been able to increase their wealth and other not? What are the institutional conditions for the increasing standards of life across nations? The title of his famous work: "An Inquiry Into the Nature and Causes of the Wealth of Nations"² announces the great lines of the project, and leaves it very clear the objective and method of the Smith's investigation.

In some sense, we can say that the new science of Political Economy is a consequence of the Smith's new approach to understanding History. The most important topic of History would be to explain how the process of civilisations across the times and different nations take place: a concept of civilisation understood here in its more objective and external sense. That it is to say, the result of technical know-how

¹ About the concept of progress: Nisbet (1980).

² Smith (1937).

accumulation, larger availability of tools, machines and other artifacts, the increase of monetary funds, and the extension of commerce and industry.

The study of the internal dynamics of the enrichment process of political societies became the most important argument of this new way to understand History's development. From this point of view, the main protagonist of History is neither a single person, nor a group of extraordinary people, but an impersonal or anonymous process that emerges from the collective actions of societies. Throughout this process, without any personal intention, without any personal design, history is conducted by something similar to the so called "invisible hand". The new science of Political Economy would have to study conditions that make more effective the external aspects of the human collective actions.

This methodological approach is in principle acceptable. It is not always necessary to approach human action and History from a transcendental point of view. However, one must be cautious, because it is not easy to establish a complete separation between the external aspect of human action and his internal motivation. We can say that Smith, like Hume, did look for a secular version of History, centered in the ordinary facts of economic life, without any reference to religion. In this sense they proposed the following reductive thesis: there is an internal goal in History, which allows it to be explained from inside its own self.

For most of the Enlightened men reason must be considered autonomous, and, as a consequence, human nature is corrupt. In this sense, the social structure of civilised people is not something natural, but an artificial effect of human design. Before any social artifact is implemented, the natural situation of human being would be corrupt - in that situation life would be short and very harsh. From such a

perspective it is not strange that the Enlightened people understood History as the transitional process from disorder to order, a kind of progressive triumph of reason over the underlying chaotic aspects of human nature. Of course, let's suppose that the process is objective and external. Necessarily it is limited and reaches a final situation of maximum order. In this way the internal goal of History is like the final situation of social order.

From the anthropological point of view men of Enlightenment considered human nature as something intrinsically disordered. Without the presence of some kind of external law or restriction, human life, in the "natural state", would be cruel, violent and short. Therefore, it is necessary to implement some design of the reason, some kind of artifact, which would enable an ordered way of life. Only reason could design such an artifact as the social order, in which every man, apart from his own intrinsic disorder, could exploit his natural rights and follow his natural impulses in a harmonised way. It would be a new method to understand History that presupposes inevitable opposition between nature and reason, between liberty and order.

In that hypothetically natural or no-social situation, every individual would be free, but inefficient, because disordered environment would provoke a lot of difficulties. Each person would have to strive in order to survive. Liberty is understood as no restrictions to natural tendencies and desires. No restrictions to tendencies understood as natural rights. In contrast with this, as a member of social order, the individual no longer enjoys such a kind of liberty. Instead of such freedom he enjoys a better and longer life.

The main objective of this new interpretation of History, called Political Economy, is to explain how the transition from disorder to order is possible. That explanation presupposes that reason could control human behavior

without any reference to its natural tendencies. There are two opinions about this possibility. According to the "Hobbes solution", social order can be carried out through an external force, in a violent way. In this case, the timing or evolution of natural process is not important, the order could be even supposed to be realised instantaneously. The resulting social order would be designed by a singular reason. It would be a single and the most powerful individual who would impose his will. The liberty of the other individuals would be annihilated.

Against this dictatorial position, liberal authors like Hume and Ferguson³ proposed the so-called "liberal solution". According to this idea, the transition from disorder to order arises in a spontaneous way from the forces inside the process itself. This implies that the timing of natural process is very important. In the first case, social order would be the result intended, and previously designed, by the visible hand of the most powerful man. In the second case, it would be neither intended nor previously designed. It would be a work of the "invisible hand", which represents the dynamics of the impersonal process that guides the entire transition from disorder to order. In that case nobody can impose his own personal design about social order. Through this metaphor of the "invisible hand", liberal authors intended to show how it was possible to create a social order compatible with individual freedom.

According to the "Hobbes' solution", History is not possible. The construction of social order would be like a production process, the result to applying a rational design to passive substance. However, the "Liberal solution" assumes that social order is a goal known to nobody, but a goal to which the process conducted by the impersonal "invisible

³ About these two authors and intellectual context, Stewart (1991).

hand" is leading. In this sense the "liberal solution" does not eliminate History. It would be understood as the progressive development of internal dynamics. Society would be transforming itself into a more and more ordered one because of the influence of the "invisible hand".

Another advantage of the "liberal solution" is that it does not presuppose a previous situation of chaos and disorder - a "natural state", from which, through external and violent intervention, social order would suddenly appear. Instead, it imply a continuous and internal construction process of social order. It is assumed that every man performs his action inside a cultural or institutional frame and that, without this mediation, any human action could not be possible.

In this respect, as has been showed by Macintyre (4), the liberal solution looks very much like the Aristotelian conception of the political practice. Nevertheless, it is something very different from the conceptual point of view. According to the Aristotelian tradition, only through the custom and law of a political community every man can discover his own personal end, the purpose of his life. While contributing to community's life, the superior end of the community can also be discovered. This implies that human nature is neither completely determined nor absolutely disorientated. Although the reason is the essential feature of the human nature, it is not by itself the criterion of truth. In other words, it is supposed that a human reason is not autonomous, but guided through common practice, by natural impulses and tendencies. In contrast to this, inside the social process guided by the "invisible hand", every man has its own natural end, and does not need to discover it. It is only the best and easiest way to obtain his own natural interests what individual hopes to get from this kind of social order.

The most difficult problem related to this approach of understanding History is that social order, the key concept to understand the internal sense of History, must be like a perfectly rational and foreseeable result. In other case, it would not be factual and internal to History itself. But if social order is a perfectly foreseeable result, then a single individual would know it too. The liberty of every individual would become something fictitious.

The first liberals, like Hume and Smith, aware of this difficulty, insisted that nobody can know the very complex structure of social order. But if anybody could get to know social order, then the internal end of History would not exist. Therefore some kind of demonstration of the possibility of social order is necessary: a kind of demonstration called the "existence theorem". It is not about how to construct in operative way social order, but simply about its logical possibility, in such a way that the proof of the existence does not imply that in fact the social order exists. The only important thing is to establish if these sorts of social orders are logically possible.

The "existence theorem", the coherence of a hypothetical theoretical structure, could only be possible in mathematical terms. But in the case of social order the demonstration is not very easy. Social order is an ideal, mental structure. Nobody has ever experienced it. This is very different from what happens to material things. When someone in advance tries to demonstrate that an artifact could work properly, before the construction of the artifact, then the task is relatively easy. This is true because this person has in mind not only the mathematical concept, but, above all, the mechanical experience about how to construct other types of machines. In fact social order does not exist, or, on the contrary, it can exist in an infinite number of ways. Thus it is necessary to demonstrate the logical coherence of all possible social

orders. This is a problem that one does not find in any other science.

For instance, in Physics, though at a first glance and from the sensible point of view, it would seem to be disordered, nobody doubts that the material order in fact exists. The Newtonian mechanics was based and constructed on the assumption that, apart from the observed reality, there exists a natural order which can be manifested with the help of mathematical analysis. But, in the case of social order, the situation is very different. It is not possible to suppose an underlying order, because, from the liberal point of view, human nature is necessarily disordered. Therefore, it is necessary to establish some theoretical or hypothetical idea about the possible structure of the social order, albeit a challenge more mathematical than practical or constructive. This serious methodological difficulty explains well why the mathematical solution of social order, the so called "existence theorem", was not reached until half a century ago.

The first attempt to express the structure of social order in mathematical terms began with the works of Cournot and Walras at the end of the XIXth century, and finished in the middle of the XXth century with the works of Debreu, Nash, and others⁴. The final result of this vast research was a very abstract mathematical structure called the "General Equilibrium Model". This model constituted the central element of the so-called neo-classical economic theory.

From the very beginning, some of the most relevant economists expressed their reservations about the methodological limitations of this project. Cournot himself, who was also an excellent astronomer, thought that, even after the reduction, the implied problem was not trivial. By reduction he understood that human action would be

⁴ Macintyre (1988).

approached only by the side of its theoretical consequences, those that could be explained in mathematical terms. If every human agent makes his own decisions as depending on information of other agents' decisions, inescapably an endless process of regression is initiated. This would resemble the following reasoning: I think that you think, that I think, and so on. For this reason Cournot introduced the so-called "perfect competition hypothesis", according to which every economic agent makes his own decision without any reference to the decisions of others: a hypothesis, that, until today, continues to be an inevitable methodological device used to avoid the infinite regression problem.

Alfred Marshall, a member of the British liberal tradition, thought, like Cournot, that the application of mathematics to social order was a very arduous question. In his opinion it was a mistake to reduce the entire social order to a mathematical structure. That would imply a synchronic approach, a static way of understanding the economic problem, which would leave aside its intrinsic dynamics. To make this issue mathematically coherent, it should become more and more abstract, and consequently less and less operative. The outcome would be a very complete and coherent mathematical structure, but where the hypothetical agent acts in a similar fashion to mechanical operation.

Inspired by the Cournot caution, and to preserve the possibility of real action and some kind of liberty, Marshall introduced a type of historical time with the distinction between short and long term. In his opinion, the invisible hand operates in the long term; but, in the short term, the human agent acts under the assumption of "ceteris paribus": that is to say, with a very limited awareness of the situation. The rest of knowledge remains tacit. In this way, in the short term, every agent makes decisions in accordance with his limited and explicit knowledge, whereas, in the long term, he

is guided by the superior rationality of the "invisible hand", which acts through implicit knowledge accumulated inside the institutional frame.

Marshall's position against the mathematical expression of the structure of social order goes back to the metaphorical intuition and less precise way of understanding History. Nevertheless, his position was not convincing for two main reasons: firstly because of mathematics' social prestige. In those times, the first quarter of the twenty-century, "Political Economy" would become "Economy" without any qualifications, like "Physics", that in those times became a very powerful and respectful science; secondly, because Marshall did not resolve some very important problems: For example, how would it be possible to get from the short term, limited and local rationality of every economic agent, to the final situation of global and absolute rationality in the long term.

Today, at the end of the XXth century, the mathematical interpretation of the "liberal solution" faces serious difficulties. Two mathematical expressions for social order have been offered⁵: one, based in the general equilibrium model, elaborated by Debreu, Arrow, and McKenzie, and another, based in the game theory, elaborated by von Neumann. Both theories, as Nash demonstrated, could be considered similar from a topological point of view. In any case, both incurred in serious deficiencies, not only from the methodological point of view, but also from the operative one⁶. Therefore, they merely look like an exercise for intellectuals but seem to be irrelevant from a practical point of view.

⁵ An excellent survey of this interesting intellectual adventure in Ingrao and Israel (1990).

⁶ Weintraub (1983, 1-39; 1993; 2002); Myerson (1999, 1067-82).

After the deception about the possibilities of a mathematical theory of social order, the current tendencies in economic theory can be summed up as a "return to Marshall"⁷. In the last thirty years a group of economic theories have emerged, which do not consider social order as a definite state, a terminal situation, but as an endless process. At the same time, there has been a correlative change in the concept of rationality, which has become a process too. Rationality is not anymore understood as a mathematical operation, a pure logical structure without matter or time. Rather it is now understood as a mechanical process which consumes time and needs a material structure. From this point of view the new concept of information becomes more and more important⁸.

All these theories assume that the agent does not act in a mental vacuum, without any reference to local and material situation. The knowledge necessary to make a decision is not something immaterial, a logical or mathematical structure that can be elaborated in a solipsist, instantaneous way and without any cost. From this new perspective knowledge is something material, information being a strange mix of logic and material. Every agent has a limited amount of information and he makes decisions a function of that availability. That decision becomes more rational, that is to say, more successful or effective, as more information is available. However, information is not longer free, and in this way it becomes the most precious merchandise.

The new way to model the rational agent's decision is an information processing machine, something like a computer with a determined capacity to store information and with a determined capacity to process it. The programme, or

⁷ To understand these problems, Kline (1980).

⁸ An excellent exposition about it in Mirawski (2002).

software, that guides all the computational processes represents the rationality of the agent. Every agent has a computational capacity, which is partly limited by its hardware, or material structure, and partly by its own software architecture⁹.

Every agent, considered as an information processor, acts like a player of a global game. He learns from mutual interactions and, by trial and error, he develops new and better programs. Such a behavior contributes to the progressive establishment of a more and more rational environment, where the global information process becomes more and more effective. This would be the new dynamical version of social order.

Social order is constructed through the integration and adaptation of modular computers. The efficiency of such a global computational system depends on the functional integration between its parts. In this design efficiency and complexity grows proportionally. The liberal idea about the individual does not lose its liberty; once integrated in the social order, is not valid anymore. The internal structure of every agent, like the information processing machine, is modified every time it interacts with the rest of its environment. In this sense, the individual neither does the same nor remains the same; his motivations and goals are changing alongside its interactions. It can be said that the "invisible hand" no longer respects the original or "natural" individual ends.

Another important problem is that the constructive process of the social order becomes "path dependent". The order is not indifferent to the way in which the sequential interaction

⁹ Among the best known are "the process game" theory, the "artificial intelligence" theory, the "cognitive economic" theory, and the evolutionary economic theory. See respectively: Binmore (1998); Simon (1997); Walliser (2000); Nelson and Winter (2002, 23-46).

is produced. Furthermore, since interactions are not reversible, it is impossible to assure the optimality of the whole process. As a consequence, the Enlightened project of new science which could explain the progress of the nation is seriously threatened.

From the very beginning economic theory has looked for something like an algorithm capable of explaining social order as the result of impersonal processes based on individualistic and decentralised decision making. Social order would be a progressive process of rationalisation, like a game against "nature". Every time it is played, it would produce an increase in the probability of success in the next play. The question is: what is the sense of a History reduced to a continuous increase of success in such a game against nature?

At the beginning of this century it seems necessary to go back to the liberal project again. The old humanistic ideal to promote freedom and progress needs a new theoretical impulse, but in a different direction. The human action is something unconditional and it is not possible to reduce it to a simple and mechanical product. An important conclusion can be drawn from this interesting story. A concept of social order could be useful for studying some institutions like the market or firms, but it always must be considered as a simple instrument, not as a given end of History. Even when economic theory tries hard to become theory of history it can not explain all History¹⁰.

¹⁰ A critical position is available in Dreyfus (1997).

Geographers, *Annaliste* Historians and the roots and divergent pathways of English and French Historical Demography