ADAM SMITH ON METHOD: NEWTONIANISM, HISTORY, AND INSTITUTIONS

STEFANO FIORI*

Introduction. Smith was a Newtonian, and so were a number of Scottish scientists and philosophers of his age, for whom Newton's method constituted a paradigm especially as regards its application to human sciences. Given this premise, the first aim of this contribution is to show how Newton's method (and specifically the notion of "principle"), when incorporated in social and historical domains, assumed new functions.

In general terms, Newton represented nature as invariant, simplex, deterministic, with laws that are constant, and where time was reversible (Prigogine and Stengers, 1979). By contrast, Smith puts forward a different view, although he adopted Newton's concept of "principle" to explain the variety of human (and social) phenomena by means of a unitary cause. Nature, when observed in the human realm, is multifaceted, ambivalent, and characterized by conflicting inclinations, which nonetheless in the long run are channelled within the general tendency to improve the human condition, conceived as the capacity to increase private and public wealth. Moreover, Smith says, the "natural course" of history has not followed this tendency linearly, and consequently it cannot be represented as a well-ordered process governed by laws comparable in their (deterministic) effects to Newton's gravitation. In particular, the history of European society, from the decline of the Roman Empire to the late eighteenth century, was not marked by a "natural course of things", but by an "unnatural and retrograde" one. The former, however "natural", did not prevail, because contingencies and institutions impeded or slowed social and economic development, although, after centuries, re-equilibrating forces allowed the emergence of the market society. Moreover, institutions, even when harmful, exhibit both a distinctive autonomy with respect to individuals and an inertial dimension. They persist over time, and even when the reasons that may account for their origins cease to exist, they still strongly influence human and social relations. This kind of path dependency – which, for example, characterized certain feudal institutions – constitutes a version of the "heterogenesis of ends", because individuals cannot foresee the future outcomes of their current actions, although a social and economic order will emerge in an indefinite future. More precisely, some institutions (which hampered the fulfilment of "perfect liberty"), as impersonal forces, have acted against other impersonal forces (those of the market, in the long run), although the latter are considered predominant. This implies that the "invisible hand" is characterized by different (sometimes contrasting) forces, whose interrelations yield an unintentional order, although in

* Università di Torino, Department of Economics «S. Cognetti de Martiis», e-mail: stefano.fiori@unito.it

Smith's view – I repeat – man's endeavour to improve his condition is predominant, and promotes the emergence of the market order.

In this perspective, human nature and social domains are more complex than physical nature, where a simple principle (gravitation) in all times and places yields an unaltered order of the universe whose movements are essentially predictable and deterministic. By contrast, economic and social realms exhibit unpredictable configurations which change over time, and only a very general tendency can be detected. As a consequence, it seems important to deal with the question of *how a non-Newtonian perspective arises from Smith's Newtonianism* or, more precisely, *how some of Newton's concepts, incorporated into Smith's theoretical apparatus, determine non-Newtonian outcomes*. In short, the human universe (so irregular, history-dependent and unpredictable) seems radically to diverge from Newton's physical universe (a-temporal, deterministic and foreseeable), although the latter vision profoundly influenced the former.

The aforementioned arguments, more in detail, are the following:

1. Smith certainly had a distinctive vision of Newtonian notion of "principle", and of Newton's analytic-synthetic approach (as many scholars maintain), as it can be remarked in the *History of Astronomy* (HA), where he compares changes of theories and of machines over time. I do not summarize his well-known reasoning, yet I just point out that in HA the relation between analysis and synthesis is more complex than the version (generally attributed to Newton) in which *they are two successive phases of the same process*. More precisely, following Smith's argument, induction leads to "general conclusions" (for using Newton's expression) or "principles" which are provisional, since more accurate observations subsequently evidence a number of anomalies. Initially, the reaction to incoherent events induces a proliferation of "wheels" (i.e., additional *ad hoc* explanations), creating a cumbersome theoretical mechanism. Only later does there emerge a *new* principle which permits a simpler and more efficient operation of the machine. The consequence is that a *new mental chain*, which connects "discordant phenomena", does not derive from the original analysis-synthesis process, which has produced an inefficient machine-theory. By contrast, the new synthesis (realized by a new "connecting principle") re-organizes the material of the previous analytic and observational activity. Consequently, it is not the logical extension of the previous process, but a new one. *New* "connecting principles" emerge and re-organise observational material in order to give it a *new* coherence. All this renders the *succession* of analysis and synthesis rather problematic because synthesis is provisional, and analysis is re-examined and re-arranged according to new paradigms.

2. The reference to "principles" raises some questions also in the economic domain. Part of the literature correctly considers the first two books of *Wealth of Nations* (WN) as being where "principles" explain and unify the variety of economic phenomena. In particular, the WN starts with the concept of the division of labour, in light of which a number of events, from the increase in wealth to the coordinated social division of activities, are explained. Yet, some differences emerge with respect to Newton's approach.

1) The "principle" of the division of labour is not "original" (it derives from the propensity to "truck, barter, and exchange" or even from more basic inclinations, specifically the "faculties of reason and speech" [WN, I.ii. 1-2]). As a consequence, we must refer to the division of labour as a *derived* principle, rather than as the original one, in order to understand certain *fundamental characteristics* of the market system. This modifies the Newtonian assumption that one must as far possible start from *no further reducible* "*principia*" when explaining phenomena. More precisely, the propensity to "truck, barter, and exchange" is comparable to the law of gravity. Both in Newton and in Smith, these latter are not the ultimate principles of reality; nonetheless, the law of gravity is the main "cause" (or "general conclusion") from which we deduce a number of phenomena within the limits of our knowledge, and a similar role – by analogy - should be ascribed to the propensity to truck and barter. By contrast, *not this latter propensity but the division of labour is assumed as the basic category for economic discourse*.

2) The division of labour is not universal (it does not always appear in human history [WN, II, Intr. 1]). By contrast, Newton's "principles" (as the gravity law) are universal.

3**)** The accumulation of capital precedes the division of labour (WN, II. Intr.). Since accumulation is a historical event, neither the division of labour nor the original principle from which it derives (the propensity to exchange) occur as a simple manifestation of human nature in "all times and places", but in consequence of specific (empirical-historical) conditions which permit (or do not permit) their emergence.

4) The *social* division of labour engenders unintended outcomes. If this is so, the latter cannot be *deduced* from the original "inclination" to truck; instead, they depend on a number of circumstances which involve contingencies, history, and complex relations between human institutions and human natural inclinations. In a Newtonian universe, by contrast, if the initial state of a system is known, all its possible evolutions are determined (Prigogine and Stengers, 1979).

5) The extent of competition and of markets depends on the – social – division of labour, but the extent of the division of labour depends on an empirical fact: the extent of the market.

Finally, the distinction between real and nominal prices, and between natural and market prices, replicates a situation in which the principles require consideration of their empirical counterparts.

As is well-known, labour is the "real measure" of value, or the "real price" of goods (WN, I.v.7). Yet goods are exchanged by means of money, which is used to estimate their value (nominal price), consequently empirical conditions matter more than their underlying "principles" in determining agents' choices and behaviours. Nonetheless, it is necessary to refer to a "principle", (in Newtonian sense, labour) to explain the real price in order to understand phenomena perceived in terms of nominal price.

3. In Smith's view, history, contingencies, and institutions contribute strongly to establishing a certain order of the market society in a way which cannot be directly deduced from principles (of human nature).

Smith points out that two "principles" of human nature are opposed: one is "the passion for present enjoyment", the other is "the desire of bettering our condition", and they respectively prompt us to consume and to save (WN, II.iii.28). This produces the contrast between prodigality (which dissipates wealth) and parsimony (or frugality) which is essential for understanding economic growth, since it is "the immediate cause of the increase of capital" (WN, II.iii.16), and it seems largely to predominate in the greater part of men (WN, II.iii.28). Given this situation, we can infer that:

1) human nature is not the precise counterpart of physical nature: both of them exhibit coherent, uniform, and constant principles, but in the former, with respect to the latter, these principles are sometimes *conflictual*;

2) man's propensity to "better his condition" prevails over prodigality (WN, II.iii.31), and explains the general tendency to move towards "the natural progress of things" (since it yields capital for productive investments); yet, as the history of Western societies shows, this happens in complex ways. Therefore, we can only delineate a general framework of the future world.

Book III of the WN is a good example of how history matters in determining unpredictable configurations of the market society, sometimes reversing the "natural order of things" despite the natural (prevalent) inclination to improve mankind's condition. In fact, foreign trade developed in an anomalous way, inverting the "natural order" according to which this kind of commerce would have been the last sector to increase after agriculture and manufacture, and in consequence of their exchange relations (for example, when the domestic market was unable to absorb surplus goods). For this reason, Smith maintains that "this natural order of things […] has, in all the modern states of Europe, been, in many respects, entirely inverted." (WN, III.i.9). This implies that:

a) History matters. The "natural course of things" may be completely reversed, and this may condition civilization for many centuries. Certainly, the tendency to re-equilibrate (and to improve

the individual condition) is at work, so that, in this case, the country finally develops. Yet, many distortions remain, and harmful institutions continue to produce their effects. In short, the natural order, once abandoned, is never perfectly re-established because the course of history leaves its traces, and Smith never describes where and when the natural order re-appears.

b) These processes were unpredictable. History, contingencies, institutions, customs, habits, and preferences of economic actors determine unforeseeable issues, although a general tendency as regards historical processes can be observed. In the human realm, "natural" tendencies and "unnatural" processes often work at the same time, and all this modifies the Newtonian perspective, concerned to deterministic processes.

4. Smith often cites institutions as responsible for the slow or inverted "natural course of things". They are the result of the myopic human reason, and of moral propensities, and in certain conditions they acquire some sort of independent structure (with respect to individuals) which persists over time. As a consequence, this is another perspective from which to examine how natural inclinations cannot impede the accomplishment of an "unnatural" "course of things".

Institutions are human devices which can exhibit a kind of autonomous life owing to the limited human capacity for both rationality and prevision. At the beginning, in some circumstances, they can be consistent with reason, in others they cannot. In the Middle Ages, the law of primogeniture and entails were not "unreasonable", because great proprietors, by keeping land undivided, were able to assure protection to their "tenants", since individuals were not able to survive isolated and undefended (WN, III.ii.6). In many cases institutions are described as inertial structures which survive even though their original function has ceased: "Law frequently continue in force long after the circumstances, which first gave occasion to them, and which could alone render them reasonable, are no more" (WN, III.i.4). And their inertial character depends on habits and customs arising from those original institutions, which survived after these latter were "greatly altered", leading the course of history towards an "unnatural and retrograde order" (WN, III.i.9).

Smith points out that the "order of things" is usually promoted by the "natural inclinations of man". Nonetheless institutions often do not mirror such propensities, and "thwarted" them (WN, III.i.3).

In short, human institutions "disturbed the natural course of things" (WN, III.i.4), often worked *against* it, and their autonomy defined a specific configuration of society at each point of time. The case of "law of primogeniture" and of "entails" is interesting, in that the autonomy of institutions is not determined by the permanence of self-interest of social groups able to influence laws (like those of merchants, who tried to condition policies in the mercantilist sense). By contrast, those medieval

institutions survived, even though they soon became “unreasonable”, and were definitely removed by means of a “slow and uncertain” historical process, which allowed landlords to spend their revenue in consumer goods. In short, Smith shows how history and contingencies slowly changed institutional structures by gradually introducing market relations between country and town.

Institutions as autonomous structures conditioning human life and imposing their own rationality on individuals, instead of being manageable tools of man’s intentionality, produce an invisible hand effect: reasonable institutions are engendered by men, yet their gradual change (or their inertial duration) produces unintended outcomes, and – to use Ferguson’s words – they appear to be “the result of human action but not the execution of any human design” (Ferguson, [1767] 1969, p. 250). From this perspective, legal institutions (not only the market) are connoted as self-sustaining systems, unintentionally adapted (or survived) to new situations, and which exhibit a self-organizing capacity which extends beyond agents’ rationality. On the other hand, Smith sometimes considers the autonomy of certain institutions to be among the causes of that unnatural “order of things” which culminates in the absence of “perfect liberty” in Europe of his time. They work against civilization, in that they reduce both the liberty and the social capacity to produce increasing wealth, although nature provides some re-equilibrating mechanisms in the long run. Individuals operate and contribute to the change in institutions, but these latter in their turn are, in many respects, independent from agents, and condition their behaviours.

From this perspective, the “invisible hand” is not limited to the market, but is a device which also works at institutional level, and whose outcomes, realized in each of these contexts, can be conflictual. In other words, the *same mechanism* which produces “unintended outcomes” can exhibit opposite tendencies: on the one hand, the “invisible hand” (described in the WN) works to establish an unintentional order consistent with individual and public welfare; on the other hand, *certain* institutions determine an unintended result culminating in the state of “im-perfect liberty”, that is, an order far from the “natural course of things”. Therefore, some (inertial and harmful) institutions act against the unintentional effort of individuals to improve general wealth, although this latter process will prevail over the former.

In conclusion, the aim of this contribution has been to show that Smith in many fields of his work produced a theory in some sense non-Newtonian, although he sought to apply Newton’s method in many circumstances. At first glance, this outcome appears to be the consequence of the shift of the notion of “principle” (and of the related analytic-synthetic approach) from physics to the human sciences. More specifically, Smith in *Languages*, HA and WN always treated subjects in

which history and contingencies matter, and where the human realm appears much more ambivalent and conflicting than the physical world.

In very general terms, one remarks that for Newton, nature is deterministic and predictable, since nature is always the same in every time and place**,** while for Smith, the future is not deterministic: laws of (human) nature can produce unexpected effects if specific circumstances intervene to reverse the "natural course of things". The confidence in certain principles (by means of which the system works), remains, but within an open universe, whose dynamics engender unpredictable outcomes.