Beyond economic fundamentalism

Riccardo Baldissone (Curtin University of Technology, Australia)

Abstract

This paper sets in a historical perspective, beginning with Cantillon, the Physiocrats and Smith, the contemporary challenge posed to neoclassical/neoliberal orthodoxy by heterodox economics. It shows how neoclassic/neoliberal fundamentalist assumptions are deeply rooted in modern economic thought, and how the latter in turn is embedded in the broader modern theoretical fabric. The paper argues that alternatives to the neoclassic/neoliberal mode of thinking come from the reconsideration of the distinction between economics and economy, and from the recognition of the performativity of science.

"We have to decide between two philosophies: one in which construction and reality are opposite, and another in which constructing and realizing are synonymous."
Bruno Latour

An abstract wasteland: the neoliberal worldview

"In 1945 or in 1950, if you had seriously proposed any of the ideas and policies in today's standard neo-liberal toolkit, you would have been laughed off the stage or sent off to the insane asylum" (George, 1999). These words by George brilliantly express to what extent the ideological climate shapes our common ideas. In particular, for more than a quarter of a century neoliberalism not only has moulded our economic reality, but it has also presented its theoretical constructions as economic facts, i.e. inevitable and natural occurrences.

As a matter of fact, economic events are far from inevitable, as they are the results of complex and unpredictable human activities, such as planning, taking decisions, building relations, defining values and negotiating. They are neither acts of god nor nature, but social activities. Nevertheless, neoliberalism made again commonsense the concept of a natural course of the economy, as opposed to the unnatural intervention of the state. This means not only overturning the economic visions and policies of the previous forty years, but also denying world economic histories, in the name of the abstract and natural laws of the market. According to the neoliberal vulgate, such natural laws are supposed to be constantly at work, and humans are likewise supposed to comply with them by following their natural personal interest.

Neoliberals often quote Smith's remark that "it is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest. We address ourselves, not to their humanity but to their self-love" (Smith, [1776] 1937, p. 14). Actually, the previous statement "helps to explain why we seek exchange. But it tells us nothing whatever about how to make sure that the sought-after exchanges are actually organized and in fact occur - and occur expeditiously" (Sen, 2000). For example, in order to negotiate and implement a contract we need more than motivation. In particular, the actual operation of exchanging contracts requires institutions for legal enforcements, for monitoring, for audit and accounting, and behavioural ethics. Smith knew it well, but his neoliberal epigones prefer to let the contracting actors perform in a social vacuum. In such an abstract atmosphere, abstract individuals unfettered by social ties perform abstract economical acts with the only motivation of self-interest.

Before the neoliberal crusade, we could have simply objected that actual butchers, brewers and bakers are knots in a social network, which shapes their actions and which is in turn shaped by their agency. Therefore, we could have also added that such complex interactions can hardly be reduced to mere self-interest. Moreover, we could have suggested that the very definitions of 'self' and 'interest' are problematic too, because they are shaped through social interaction. Nevertheless, after thirty years in which neoliberal maxims have been pouring on the general public through mass media, government policies, educational institutions and workplace rules as a virtually unchallenged image of economic reality, we can no longer exclude the possibility for social actors to embody neoliberal economic assumptions and perform as atomised entities who seek only to maximise their revenues. To say it in Merton's terms, after those thirty years neoliberal prophecies are more likely to self-fulfil (Merton, 1968).

Neoliberal views always claimed to be a realistic description of both human and economic nature. Nevertheless, they actually have been shaping both human and economic realities as a normative project. As a matter of fact, neoliberalism applied on a global scale the modern fundamentalist pattern that Feyerabend and Latour have shown at work, for example, in reformed Christian and scientific communities alike. Following this pattern, members of both communities could present their object of faith, god and nature respectively, as the source rather than the result of their activities of controversy settling. Neoliberal settlements too kept being hidden behind the faith in the Market, which neoliberal theorists always described as the source of their economic analysis. Meanwhile, the convergent actions of financial, industrial, educational, media and governmental neoliberal-oriented actors pushed for shaping the actual markets on the model of the neoliberal ideal Market. This strategy has since proved successful, and it oriented the very behaviour of the multitudes by generating both acquiescence and resistance to neoliberal policies and values. On the one hand, the acceptance of neoliberal principles has produced a generalised, albeit partial instantiation of the liberal wasteland in the actual world of economic interactions, thus fabricating evidence for neoliberal alleged economic analysis. On the other hand, the resistance to neoliberal policies and values has been traditionally denied by neoliberal theorists the status of a genuine economic factor and has been instead conveniently attributed to extra or noneconomic motivations (Von Mises, 1956), thus reinforcing the description of the neoliberal view as the rational approach to economy.

The hidden power of scientific rhetoric

In the last thirty years, neoliberal simplistic models have attained a commonsense status as supposedly objective representations of a likewise supposedly objective reality. In other words, neoliberal thinkers successfully recycled the modern dichotomy between the world, which they describe as the economy, and its theoretical representation, i.e. economic theories. Moreover, they also embraced the standard Hobbesian narrative of an absolutely atomised individual, whom Smith later assumed as classical economy's basic subject and Pareto finally labelled as *homo* (sic) *oeconomicus* (Pareto, [1906] 1972). Furthermore, they followed classical economists in attributing to this individual economic subject an ability of choice that they deemed as rational. Finally, they exploited Western rhetoric tradition, as carried on by Western modern thought.

As previously recalled, neoliberal rhetoric recycled Smith's sentence on food providers. Actually, this sentence was a modern variation on a millennial tradition of parable-

making. Modern thinkers gave such tradition a distinctive turn, which altered the structure of their biblical models. The latter established or exploited an analogical connection between a particular situation and a different general meaning. In other words, biblical parables suggested a metaphorical or metonymical link between the domain that they literally described, and a more abstract or general domain. An example of metaphorical links is the portrayal of the apostles as fishermen of souls, whilst god as father exemplifies the metonymical ones. With the baroque split between art and natural philosophy, scientific discourse reduced these analogical connections to mere rhetorical devices, which could at most buttress from outside the self-sustaining structure of scientific theories. Within the latter's boundaries, relations of identity and difference were supposed to replace analogical ones, so that parable had to survive on synecdochical links. Following Quintilian's *Institution of Oratory*, a classic first-century text on rhetoric, synecdoche is a figure of speech that let us understand "the plural from the singular, the whole from a part, a genus from the species, something following from something preceding, and vice versa" (Quintilian, 2006). All these substitutions rely on the relation of inclusion but the last one, which exploits a topological link. However, such a link could be intended as a relation of contiguity among different levels within a hierarchical system, hence it could also be referred to inclusion. The latter relation was attributed since seventeenth century an essential role in ordering nature through scientific systems. Therefore, within these systems a specific instantiation could stand as a proper example of more general or abstract entities. For instance, Galileo presented the movement of an object sliding on an inclined plane as an example of every object's behaviour. In the same way, Hobbes laid the foundations for *homo oeconomicus* by assuming the supposed selfish behaviour of his atomised individual subject as an example of human behaviour as such.

In general, both *gedankenexperiments*, i.e. thought experiments, as Newton's cannonball, and actual laboratory ones relied on the possibility of substituting the behaviour of the specific objects involved with the behaviour of each and every physical object. This possibility had long been codified as inductive logic, when it implied a move from particular to general, and as deductive logic, when dealing with the opposite move. Nevertheless, apart from Plato it never had an exclusive role in organising knowledge during classical antiquity. For example, Aristotle fully recognised the cognitive value of analogical links, which he deemed as the most important language device (Aristotle, 1995, 1459a), because by revealing resemblances, metaphors make words subtler (Aristotle, 1959, 1412b). Unfortunately, when the Aristotelian corpus disappeared from Christian Europe in the sixth century, Aristotelian logic was only represented in Porphyry's *Isagoge*, i.e. introduction, as a hierarchical structure, the so-called Porphyrian tree. Middle age scholars had to wait until the thirteenth century to have Aristotelian texts imported from the Islamic world and translated into Latin. Since then, Aristotle's appreciation of metaphor informed mainstream scholastic thought, until in the seventeenth century the baroque split between art and science reduced such appreciation to a purely esthetical judgement. Only synecdochical links were then allowed within the scientific systems, which aimed at mirroring the naturally hierarchical order of things.

Of course, analogical links did not completely disappear even from the driest scientific report. Moreover, scientists occasionally made use of traditionally structured parables. For instance, in the economic realm Bastiat wrote his famous parable of the broken window to better illustrate the so-called hidden costs of industry. Nevertheless, such parables were intended as mere explanatory devices. As scientific knowledge was built on the hierarchical structure of the Porphyrian tree, synecdoche remained instead the only *tropos* that could

properly relate scientific objects. Within the modern scientific discourse, analogical examples were thus supplanted by synecdochical ones. In other words, the rhetoric potential of parables did not disappear, but was associated with examples that were, at the same time, an instantiation and a representation of a more general meaning. As already recalled, for instance Galileo presented the behaviour of a specific object both as an individual, observable event and as an instantiation of a general physical law. Therefore, when Smith took the behaviour of butchers, brewers and bakers as an example in 1776, he could rely on an almost bicentennial tradition of modern scientific rhetoric.

Man describes what nature prescribes

Smith hinted at the behaviour of some specific economic actors in order to suggest that their behaviour was an instantiation of a more general rule. In particular, he surreptitiously suggested that the butcher, the brewer and the baker were an example of the abstract economical subject whose behaviour they were meant to represent in the sentence. Actually, Smith built the latter to make his readers agree on the behaviour of such abstract economical subject. Therefore, he used the butcher, the brewer and the baker, on whose behaviour readers could agree on the basis of their personal experience. Moreover, thanks to their practice of western modern discourse, readers could also understand and accept that the butcher, the brewer and the baker were an example of such abstract economic subject. Furthermore, readers could also understand and accept that the butcher's, the baker's and the brewer's behaviour was an example of the behaviour of the abstract general subject, i.e. of the supposed behaviour of everyone.

It is fair to recall that Smith, who was a moral philosopher, opposed self-love to selfishness, and credited his abstract human subject also with passions as sympathy for her/his fellow humans. On the contrary, the abstract economic subject of Smith's neoliberal epigons is only endowed with a lust for profit, so that he/she appears as one-dimensional as the Marcusian man. However, whilst both Smith and the neoliberal epigons presented their individual subjects as an objective description of human economic behaviour, they did not restrain from dictating economic policies that in turn had a huge impact on this very behaviour. Therefore, though adopting the modern epistemological view of a theorist-observer, both Smith and his later followers in practice blurred the boundaries between scientific observation and prescription.

The same blurring of boundaries between the descriptive and the prescriptive approaches took place in an even subtler way at a purely theoretical level. As showed by Smith's sentence on food providers, the substitution of a specific and observable behaviour with a supposed general one produced also a shift from a supposed description towards a surreptitious prescription of a general norm. Of course, Smith did not state that the economic subjects ought to follow their self-love more than Newton enjoined physical object to attract each other according to his gravitation law. On the contrary, both theorists appealed to a supposed natural propension of humans to love themselves and physical objects to attract each other respectively. Since the seventeenth century such appeal to nature as the absolute object and the touchstone of knowledge had been the distinctive feature of modern scientific discourse, which had built the realm of facts as opposed to that one of values. Therefore, natural facts could be only described, and the interaction between the describing subjects and the described objects could be conceptualised only as an undesired interference. Following the model of physical enquiry, modern scientists prided themselves of restoring the image of

the world as it was, rather than as they wanted it to be. Therefore, they took responsibility only for the accuracy of their supposed descriptions, whose prescriptive power was attributed to nature. Whilst it is not surprising that this pattern could work for physics until well after quantum mechanics, we may wonder how the appeal to an unchanging nature could fit modern economic theories, which were dealing with unprecedented transformations. However, as a matter of fact in the eighteenth century modern economists strived to be "the Newtons of human science" (Toulmin, 2001, p.55), and looked for the fundamental structure of economic reality.

The natural balance to come

During the seventeenth century, natural philosophers from Hobbes to Locke dealt with issues that would be later grouped under the label of economic theory. In particular, Petty attempted an analysis of wealth in "Terms of number, Weight, or Measure" (Petty, [1690] 1997, vol. I, p. 244). Moreover, he incidentally stated that the amount of labour needed to produce goods was "the foundation of equalizing and balancing of values" (Petty, [1662] 1997, vol. I, p. 43). This statement made Marx attribute to Petty the discovery of the value-form, and the beginning of classical economy (Marx, [1867] 1974).

Only in the eighteenth century a specific conceptual space has been devoted to economic studies, when a group of French theorists choose for themselves the definition of *economistes*, i.e. economists. As later on, the word economist came to define a specialist in the field of economic studies, the French *economistes* came to be known as Physiocrats, from the Greek words *physis*, i.e. nature, and *kratos*, i.e. rule. This is not only because, in attempting to conceptualize economy as a whole, they identified the source of economic value in the land. More in general, the Physiocrats were heralding the power of the natural order, which in true modern fashion they wanted to free from historical unnatural institutions and practices. In particular, they stressed that only agriculture provided a *net produit*, i.e. a net product, which they deemed as the actual source of the wealth flowing throughout society (Quesnay, [1758] 1972). Moreover, Quesnay defined a hypothetical balanced circular flow of wealth as the *ordre naturel*, i.e. the natural order of the economy. Furthermore, he appealed to such natural order to advocate the lifting of the obstacles placed in the way of the flow of wealth by the *ordre positif*, i.e. the positive order of traditional rules governing the agriculture.

Actually, Physiocrats probably owe to Cantillon the new dynamic concept of economic structure as a circular flow between incomes and expenditures (Cantillon, [1755] 2001), which was to supplant the previous static principle of accumulation of wealth. Moreover, Cantillon too hypothesised a possible natural balance in the income-expenditure flow. Furthermore, Cantillon gave new life to the distinction, first brought forth by Aristotle, between a supposed *valeur intrinsique*, i.e. an intrinsic value of goods, and their exchange value. Whilst the former did not change, as it was "the measure of the quantity of Land and of Labour entering into its production" (Cantillon, [1755] 2001, p.16), the latter depended "on the Humors and Fancies of men and on their consumption" (Cantillon, [1755] 2001, p.16). Within well-ordered societies, where actual prices did not vary much from the intrinsic value, economy would have reached its natural balance. Cantillon's linking of the intrinsic or natural value to the cost of production was also endorsed by the Physiocrats, who nonetheless applied it only to agricultural activities.

Smith fully extended the link between labour and value beyond the limits of farming production. For him, labour was the fundamental unit of value or "the only standard by which we can compare the values of different commodities, at all times, and at all places" (Smith, [1776], 1937, p. 36). In particular, he deemed labour as being the real price of commodities, and money as being their nominal price only. The same Smith recognised that such an abstract notion of labour was not obvious. Moreover, he stressed that labour itself, like commodities, had both a real and a nominal price. The former expressed what we would now call labour's buying power, whilst the latter was labour's monetary value. As for Smith the same real price was always the same real value, the real value of labour should have been ascertained from labour's real price. Nevertheless, Smith observed that the real price of labour, that is the subsistence of the labourer, varied with circumstances. In order to better understand this variation, Smith applied his economic scheme, somewhat anachronically, to hunters' and gatherers' societies. In particular, he stated that "in that early and rude state of society which precedes both the accumulation of stock and the appropriation of land" (Smith, [1776], 1937, p. 47) the whole product of labour, that is its value, belonged to the labourer. Back to contemporary times he observed that, on the contrary, in a condition of waged work, the labourer must share with his employer the product of her/his labour. He therefore concluded that, in this state of things "labour measures the value, not only of that part of price which resolves itself into labour, but of that which resolves itself into rent, and of that which resolves itself into profit" (Smith, [1776], 1937, p. 50). As the previous quote shows, Smith's use of the word 'labour' both as the abstract equivalent of value and as a metonymy for wages is quite confusing. Despite that, Smith's formulation of what will be later defined labour value theory was to become the fundamental law of classical economy, especially through the works of Ricardo and Marx.

The equivalence between labour and value did not play an exclusively pivotal role in Smith's economic analysis. Following a pattern already at work in the theories of his modern predecessors, Smith supposed that the natural value of things should have found expression in a natural price, through a process of natural self-adjustment of the market. In other words, the market would have re-established a supposed natural balance between natural values expressed as natural prices. Just like his predecessors, Smith justified the latter claim by relying on his and his readers' experience of the dynamical balance produced within actual markets. Therefore, he turned the result of some structured activities of some social actors, that is sellers and buyers dealing in transactions within specific markets, into a transcendental feature of a transcendental object, that is the market as such. The famous image of market's invisible hand, which Smith used to depict the transcendence of national economy's tasks in regard to individual entrepreneurs' visibility, was to become the symbol of such abstract market's hidden power.

The concept of a self-regulating market could easily fit Marx's definition of a social fetish, that is "a definite social relation between men, that assumes, in their eyes, the fantastic form of a relation between things" (Marx, [1867] 1974, p. 72). Nevertheless, whilst Marx did apply his idea of fetishism to commodities, he did not consider market as a fetish, but rather as a less fundamental level than production. Following Ricardo, Marx was to focus again on value as the fundamental objective form of a capital-dominated economy. Nevertheless, Marx also stressed the historical nature of value, which he linked to the likewise historically contingent capital-dominated production. Therefore, whilst both Ricardo and Marx further developed a theory of value as the fundamental structure of economic activities, the latter disentangled modern economic thought from its traditional naturalistic pattern.

Value confirmed and delimited (Ricardo and Marx)

Ricardo explicitly named Smith as his starting-point in his main work, *On the Principles of Political Economy and Taxation*. In particular, he opened the latter by stating that "the value of a commodity, or the quantity of any other commodity for which it will exchange, depends on the relative quantity of labour which is necessary for its production" (Ricardo, [1817] 1821, p. 1). Nevertheless, Ricardo pointed out Smith's oscillations in writing of labour sometimes as the quantitative amount bestowed on the production of a commodity, and sometimes as the quantity it could command in the market. In other words, Ricardo blamed Smith for confusing labour as the measure of value and labour as the commodity to be sold for a wage. Therefore, he claimed that only the amount of labour bestowed on the production of a specific commodity would determine its value, which would have been expressed in terms of money as that commodity's natural price. Nevertheless, following Smith, for Ricardo there could have been only accidental and temporary variations of the market price from such natural price. According to Marx, this was possible because Ricardo too defined natural price sometimes as the expression of value, and sometimes as equal to cost-price. Only in the latter case could market prices have been supposed to actually rotate around commodities' natural price (Marx, [1861-1863] 1975, vol. 31). However, Marx's critique of Ricardo went much further.

Whilst Marx prized Ricardo for recognising labour-time as defining the magnitude of value, he blamed him for not examining the form of such value. For Marx it was precisely the form of value that gave commodities their mysterious and even mystical character. Drawing an analogy from the religious world, where "the productions of the human brain appear as independent beings endowed with life, and entering into relation both with one another and the human race" (Marx, [1867] 1974, p.72) Marx defined commodities as fetishes, which appeared as endowed with independent life and power. In order to get behind this fetishist appearance, it was necessary to recognise value as a social product. According to Marx, such recognition was the historical merit of the labour-value theory. Moreover, Marx also recognised the specific form of value of commodities as the expression of a specific historical mode of production, which is the bourgeois production of commodities. Therefore, whilst he considered value as an objective expression of such capital-dominated production, he argued that value's objectivity was historical rather than natural.

Marx also made a distinction between labour in general and the specific form in which labour was acquired as a commodity. He termed the latter *Arbeitskraft*, i.e. labour power or force, a definition that had already been used by Helmholtz in his formulation of the principle of conservation of energy. This principle postulated the existence of an entity called energy or force, which was intended as the common substance of phenomena as different as mechanic force, heat, light, electricity and magnetism. Therefore, it maintained that such different manifestations of energy could transform into each other without altering the amount of energy itself. A similar metaphor had inspired the analysis of economic flows. Since the Physiocrats, these flows were read as physical processes, in which wealth acted as a kind of energy circulating throughout society (Veca, 1977). When classical economist established the equivalence between labour and value, the former became the invariant substance underlying economic transformations. This is why both Smith and Ricardo were expecting that values expressed in actual transactions would converge on labour-determined values. As Marx realised the impossibility of such convergence of local prices and values, he put forth a global solution, which was also in line with his understanding of the labour-value equivalence. In

Marx's view, the actual value of commodities equalled the social necessary labour time which had been used to produce them. Therefore, value was always determined in relation to global production. Hence, it was only at this global level that prices equalled values. In other words, Marx stated that the sum of the prices of production of all commodities was equal to the sum of their values.

Towards the margins and back to totality (again)

Whilst the equivalence of labour and value put a particular emphasis on production, since the 1860s economists as Jevons, Menger and Walras focused on prices as the effect of market demand. In particular, Jevons revamped the simplistic anthropology of Bentham, who in turn had redefined as utility the interest orienting the behaviour of the Hobbesian atomised individual. Jevons began with recycling Bentham's appeal to pain and pleasure as the fundamental springs of human action. Moreover, he held these feelings as "quantities capable of scientific treatment" (Jevons [1866] 2000). Furthermore, he stated that the amount of pleasure, or utility, produced by the last supply of a useful object, decreased in proportion to the whole quantity received. It is noteworthy that a few years earlier Fechner had restated as a law of perception a supposed logarithmic proportion between increasing stimuli and their perceived effects (Fechner [1860] 1966). Later on, economists as Edgeworth even regarded the Weber-Fechner law as a confirmation of Jevon's principle of last or marginal utility (Edgeworth [1881] 1967). Weber took pain in severing Fechner's general psychological statement from the specific commercial bookkeeping outlook that marginalist economists attributed to human beings (Weber [1908] 1975).

Actually, both experimental psychologists and marginalist economists advocated the possibility to quantify human feelings, and to formulate general quantitative laws of human behaviour. Therefore, they were both pushing further seventeenth-century natural philosophers' agendas. On the one hand, experimental psychologists were extending Leibniz's idea of a universal computational language to human emotions. On the other hand, marginalist economists, by focussing again on individuals as the basic unit of economic interactions, were restating the Hobbesian technique of decomposing the social field in its constituent elements, as if they were dealing with a mechanical assemblage. Moreover, still following Hobbes, they assumed that such an individual subject was naturally equipped with a consistent and undivided self. It is somewhat ironic that Menger, the founder of the so-called Austrian school, developed his version of marginalist theory in the same time and city where Freud was at last questioning the modern supposition of a substantial unity of the self.

Marginalist economists also attempted to build on their subjective approach to value a general model of markets' behaviour. In particular, Walras coupled his subjective theory of value with a mathematical formalisation of the conditions for a general equilibrium between demand and supply. Regardless of its mathematical sophistication, Walras' neoclassical theory of equilibrium actually restated the classical fundamental postulate of a possible market balance. Moreover, according to Walras such balance would have been reached through processes of *tatonnement*, i.e. progressive adjustment. Therefore, he shifted the Smithian metaphor of a teleological invisible hand towards a multiplicity of *tatonnements*, which literally refer to the act of touching with hands in order to explore. However, the walrasian model, even though mathematically appealing, kept reproducing the classical transformation of a practical feature of economic transactions, that is the negotiation about prices and quantities, into a fundamental or natural condition of the economy. This supposed

natural condition, which Walras identified as *régime de la libre concurrence*, i.e. free market, became then the object of his theoretical investigation. In other words, the fundamental postulates of Walras' model, that is individual actors endowed with unrestricted knowledge and immediate and no-cost transactions, defined the very free market that the model was supposed to explore. Such partial circularity has always been a general feature of modelling activities. Nevertheless, in Walras' model it reinforced the fundamentalist modern pattern already applied by the Physiocrats, who turned an ideal or possible condition into a natural trend, and current conditions into artificial or unnatural incrustations. Therefore, just like in Physiocrats' works the historical restrictions to agricultural exchange had became artificial obstacles to the emergence of the natural order of the economy, in Walras' theory space and time bound transactions were discarded as flawed and imperfect instances of ideal frictionless markets. Of course, Walras recognised the difference between the 'pure economy' of his general equilibrium theory, and the economy of applied research. Nevertheless, he deemed the former as essential and truly scientific, and longed for its recognition "*a cote' de l'astronomie et de la mecanique matematique*" (Walras, [1874] 1926, p. XX), i.e. side by side with astronomy and mathematical mechanics.

Socialist versus liberal economic fundamentalisms

Walras' system was soon recast by Pareto into a 'taste and obstacle' structure, which replaced the previous functions of demand and supply (Pareto [1906] 1972). However, Pareto kept considering general equilibrium as a solution to a set of simultaneous equations. Moreover, he also suggested the theoretical possibility of achieving general equilibrium not only by spontaneous market adjustment, but also by calculating this solution and planning the economy accordingly.

Pareto's suggestion led to the so-called socialist calculation debate, a long-lasting quarrel on the efficiency of a planned economy as compared with market economy. A purely hypothetical academic discussion until 1917, the debate resumed with the observations on the war economy by Neurath, who was a socialist and a member of the neopositivist Vienna Circle as well. Neurath contended that during World War I European governments' economic interventions had incontrovertibly positive results because they aimed at the efficient allocation of resources rather than profits. Von Mises, an economist of the second generation of the Austrian school replied, protesting the impossibility of a rational allocation of resources outside of the market. On the contrary, Paretians like Lange not only claimed the autonomy of mathematical solutions from economic policies, but also successfully championed the deployment of neoclassic simultaneous equations systems in the actual planning of Soviet Union economy (Lange, 1938). In particular, Lange argued that market failures deriving from imperfect competition, externalities or transaction costs would have always hindered the allocation of resources. On the contrary, prices set by a government as if they were determined by a fully competitive system would have produced a more efficient allocation than within an actual market economy. In other terms, a planned economy would have got closer to realise an ideal market condition than actual market economies. In order to rebuke this claim, which relied on the very recognition of the virtues of an ideal free market, partisans of *laissez faire* had to refine their position.

Hayek reframed the objections of his fellow scholar von Mises within a broader approach to economic issues (Hayek, 1937). In particular, he complained that the latter, as well as other social phenomena, were understood through habits of thoughts that had been

developed in dealing with natural phenomena (Hayek, 1945). Moreover, Hayek resented that mathematical models implying a fully centralised knowledge of the system were supposed to determine the solution to economic problems, whose relevant knowledge was instead actually scattered among stakeholders. Rather than advocating a hypothetical complete knowledge of economic systems, he invited economists to explore the emergence of economic solutions without design, as a result of the process of distributing information through the price system. Hayek defined the latter as a mechanism to register and distribute change, thus considering prices as communicative devices, rather than simple accounting tools. Therefore, he took further Menger's eschewing of the mathematical scaffolding, and questioned the very pretension of a mathematical determination of prices without the aid of an actual market.

Hayek's argument went far beyond the contended topic of economic planning. In his attack on mathematical reductionism in economics, Hayek challenged the modern assumption of a centralised and teleological order of things. On the contrary, he set as a main task of economics the explanation of how order would emerge despite the lack of information of the stakeholders, that is to say despite the absence of an omniscient central planner. With very few exceptions, the seventeenth-century founders of modern science instead had no doubt about the existence and the identity of such a planner, who was the object of natural theology. Actually, most seventeenth-century natural philosophers held the Christian god, regardless of his specific denomination, as both the planner and the warrant of the natural order. Moreover, since Galileo they choose god's supposedly objective, aperspectival view as a model for their scientific rendering of the world. Therefore, natural philosopher strove to read scientific facts with eyes as piercing as those of god, who only could have a complete view of nature. Moreover, Galileo shared with his mathematical reductionist fellows the belief in the certainty of mathematical knowledge, which he considered as absolute as god's. Whilst Hayek too referred to economic facts, he instead emphasised the analogical link between the latter and mathematical models. Most of all, he rejected the ideal of centralisation of relevant knowledge as a contradiction in terms, because it excluded "the knowledge of particular circumstances of time and place" (Hayek, 1945, p. 521), which could not be conveyed in statistical form to a central authority. Hayek thus parted from the legalistic and centralised model of nature provided by Newtonian physics to embrace an evolutionary, open ended framework more akin to Darwinian biology.

Nevertheless, though Hayek claimed the specificity of human social phenomena, he kept on naturalising economical processes. Whilst protesting the inadequacy of planning policies to deal with the complexity of actual economic interactions, Hayek praised the marvels of the price system, which he presented as a quasi-biological mechanism operating beyond individuals' will. Moreover, on a more practical level his faith in the self-adjusting properties of the price system did not provide him, nor his neoclassic fellow economists, with policy instruments adequate to face the actual economic crisis, which was devastating the world economy throughout the 1930s.

The Keynesian revolution . . .

Well before the 1929 Great Depression, neoclassical-inspired policies had already proved inadequate, if not counterproductive, during the great economic crises that afflicted most of China, Southern Africa, Brazil, Egypt and India during the last quarter of the nineteenth century. At that time, extreme climatic conditions such as drought and exceptional monsoons led to huge famine, whilst especially in British India, free-market inspired policies

did not even consider to stock inventories to be distributed. Though the death toll of such late Victorian holocausts amounted to tenths of millions of victims, it did not provide any feedback to neoclassical economists (Davies, 2001).

After another major crisis struck the economy of the United States of America in 1929 and spread all over the industrialised world, the U.S. government put aside traditional neoclassical policies and opted for an intervention aimed at direct relief, economic recovery and financial reform. Such governmental intervention, dubbed “New Deal”, was put in place at the cost of unbalanced budgets. Whilst the U.S. government was at first apologetic about the unbalance, since 1938 it began openly advocating Government spending, in the words of president Roosevelt, “as a trigger to set off private activities” (Roosevelt, 1938), and therefore to help creating an economic upturn.

The turning point had been the publication in 1936 of *The General Theory of Employment, Interest and Money* by Keynes. The almost immediate impact both on economic theories and policies of the latter work could hardly be exaggerated. In his *magnum opus*, Keynes waged a relentless attack on what he called orthodox economics, which included most of the classical and neoclassical economic works. “The gist of this Keynesian criticism can be summed up simply as a flat rejection and denial of what has come to be known as Say’s law of the markets which, despite all assertions to the contrary by orthodox apologists, did run like a thread through the entire body of classical and neoclassical theory” (Sweezy, 1953, p. 256).

Actually, the so-called Say’s law is more properly a postulate, as it expresses the belief in the unconditional ability of production to create demand. In particular, according to Say, there could have never been a general glut, because an increase of supply itself would have created an exchange opportunity for overproduced items (Say, [1820] 2005). It is not difficult to recognise Say’s law as an article of the faith in the natural self-adjusting property of the market, which pervaded eighteenth-century French economic thought. Keynes argued that the unthinking acceptance of Say’s law had led his contemporary orthodox, i.e. neoclassical economists to state the impossibility of what was instead actually happening. At that time, economic depression and massive unemployment were shattering the industrialised world, and no hidden hand could guarantee economic recovery.

Keynes did not deny the action of economic automatic forces. He rather only accepted that these forces could work on restoring the long-run equilibrium between saving and investment, whilst he doubted that they could bring about an optimum level of production (Keynes, 1971). On the contrary, they could result in a kind of vicious underemployment equilibrium, which could only be broken by the relatively exogenous factor of higher investments, either autonomous or governmental. More in general, Keynes exposed the neoclassic equilibrium assumption as a refusal to explain timely and unstable phenomena as more than anomalies of the system. According to Keynes, from this refusal, which ruled economic fluctuations out of economic theory, stemmed the neoclassical inability to explain and usefully deal with the actual economic world.

. . . and the counterrevolution (part I)

After the Second World War, the Keynesian legacy came to exert a major influence over economics. Nevertheless, in its most successful version, the so-called Neoclassical-Keynesian synthesis, the gist of Keynes' theory was recast as a system of simultaneous equations, the so-called IS-LM model. This translation in neoclassical terms reproduced the neoclassical assumption of full employment, which Neo-Keynesians had to correct by appealing to supposed imperfections of the actual economic system. In general, the Neo-Keynesian synthesis was considered as a betrayal by Keynes' former colleagues at Cambridge and by the so-called Post-Keynesian scholars in the United States of America. It nonetheless gained a huge audience both in the academic world and within governmental agencies, on whose economic policies it exerted a powerful influence up until the 1970s.

The Neo-Keynesian success opened the era of the mathematization of economics, which spread over textbooks and policy design criteria alike. Both the former and the latter relied upon the new econometric techniques, first developed by Tinbergen, Frisch and the researchers of the Cowles commission since the 1930s, particularly in order to deal with the Keynesian economy-scale macroeconomic models. These techniques made use of quantitative or statistic methods for economic modelling. Though such methods had been defined by Keynes himself as a kind of statistical alchemy (Keynes, 1971), they gained momentum in the 1940s and were progressively adopted in empirical work and governmental planning. However, despite the fact that the formalisation of economic theory was associated with the so-called Keynesian Revolution, it actually harked back to the Walrasian-Paretian modelling style.

Econometrics brought in new and more flexible techniques as, for example, Haavelmo's probabilistic approach (Haavelmo, 1944). Moreover, the mathematization of economics was further boosted by the opening of new formalised fields such as Von Neumann's Game Theory, which was intended to transcend the simplistic model of Robinson Crusoe-like isolated individuals (Von Neumann & Morgenstern, 1944). However, the same Von Neumann considered the mathematized hard sciences as the model for a future essentially calculative economic theory. Following the motto of the Cowles commission, *Science is Measurement*, mathematically inclined economists thus resurrected the computational ideal of seventeenth-century natural philosophers. Despite Keynes' legitimate suspicion that vital economic factors would have been neglected because statistically intractable or unprocurable (Keynes, 1971), such computational ideal came to pervade post-World War II economic studies with few notable exceptions. Of course, the translation of economical theory into mathematical language appealed to economists with the promise of a more rigorous approach. Nevertheless, as Von Neumann conceded, the very mathematical tools which had granted the success of modern physics were unlikely to produce the same result with social phenomena (Von Neumann & Morgenstern, 1944). Therefore, though twentieth-century mathematization of economics was supposed to follow the steps of seventeenth-century mathematization of physics, it rather simply exploited mathematics' tools and credibility.

It is ironic that by turning hypothetical correlations into laws, and by expressing statements under the shape of theorems, mathematized economics strove to attain the status of objective, detached knowledge that its very models, namely mathematics and physics, were instead currently questioning. Actually, the challenge to the absolute Newtonian objectivity of mathematical and physical theories as representations of a likewise absolute

reality had already emerged with the invention of non-Euclidean geometries and mechanical statistics in the nineteenth century. Moreover, since the beginning of the twentieth century relativity theory and quantum mechanics had limited Newtonian objective representations to macroscopic events occurring at a speed far from that one of light. Nevertheless, as these limits appeared to encompass most of human experiential world, economists could still feel safe to share the Newtonian faith in a deterministic and predictable order of things. Since the 1920s this faith, coupled with the faith in the progress of knowledge, had been embraced by the scientific community even to a greater extent than at the time of its first appearance in the seventeenth century (Toulmin, 1990).

The renewed catastrophe of World War II reinforced the appeal to abstract rationality as a common endowment of humanity beyond cultural differences, as it already happened in seventeenth-century Europe on the wake of the religious wars. In this cultural climate, the formalisation of Keynesian theories could be hailed as a further step towards a more rigorous economic theory. Such was, for example, the aim of Hicks, the propounder of the IS-LM model on which the Neo-Keynesian synthesis relied. Only several years later Hicks recognised his own diagram as a rather misleading oversimplification. In general, after World War II the faith in figures overwhelmed Keynes' cautious stance among economists, regardless of their ideological, political and theoretical differences, the actual boundary being a methodological one. Whilst most economists maintained the usefulness of macroeconomic models, be them Ricardian, Marxian, Walrasian-Paretian or Keynesian, as a meaningful key to both economic description and prescription, others opted for a microeconomic approach, which perpetuated the Hobbesian tradition of a mechanical decomposition of the social field. For thirty years the Neo-Keynesian synthesis, as an ambiguous mixture of several strains of economic thought, provided a wide enough umbrella also for the latter approach to resist and grow. Microeconomic theorists were then ready to strike when in the 1970s the resistance of current stagflation to Neo-Keynesian solutions gave *laissez-faire* partisans the opportunity to seize mainstream economics.

A visitation of evil spirits: counterrevolution in economics (part II)

Already at the end of the 1960s, Friedman had launched his monetarist crusade, which was based on his staunch belief that "monetary policy can prevent money itself from being a major source of economic disturbance" (Friedman, 1968, p. 12). When in the 1970s such disturbances took the shape of a rising inflation accompanied by a general stagnation of the economy, Friedman's recipe of money supply control became the alternative policy to Keynesians' investment strategies.

Monetarist policies were first applied after the Chilean nine eleven, a bloodbath in which the military drowned the legitimate Chilean democratic government and not a few of its supporters. The Chilean totalitarian *junta* promptly presented its economic program, inspired by Friedman's associated at Chicago University, on the 12th of September 1973, the day after the coup. The dictatorship's agenda included the cut of the expenditures for social services, the privatisation of the public sector, the liberalisation of trade policies and the deregulation of the market, which was meant to be freed from the constraints set by the government and by labour unions. From today's perspective, it could appear that Chilean economy has been a testing ground for what we now call neoliberal policies. Nevertheless, if we consider the resulting disastrous outcome that led to the dismissing of both the Chilean economy minister and his Chicago advisors in 1982, we may wonder about the actual scope of the test. Whilst

the resulting successful transfer of resources from the poor to the rich had undoubtedly pleased the Chilean oligarchy, the failure of the Chilean experiment in establishing a supposedly optimal economic settlement not only did not provide any feedback to its theoretical propounders, but it was even presented in typical Orwellian double-talk as the Chilean miracle.

In the meantime, from the headquarters of the Chicago school Lucas had launched a microeconomic attack on the very field of macroeconomic theories. Lucas not only reiterated equilibrium models whose key elements are that "agents are rational, reacting to policy changes in a way which is in their best interest privately, and that the impulses which trigger business fluctuations are mainly unanticipated shocks" (Lucas & Sargent, 1981, p. 316). He also claimed that "macroeconomics is in need of a microeconomic foundation" (Lucas, 1981, p. 216). In other words, he requested to ground economic macromodels on micromodels representing the relations between atomised agents. The idea was not new, as it for example brought within economic literature the Smithian brewer, butcher and baker. However, Lucas mobilised his equations to back the assumption that individual agents, be them humans or even simians, should be the models for economic interaction (Lucas, 1981).

The so-called Lucas critique was received as a theoretical contribution to the growing trend of methodological individualism, which was beginning to converge with similarly growing political trends within first world countries. A startling example of such convergence was the statement that 'there is no such thing as society', which was uttered by Thatcher, UK Prime Minister since 1979. The devastating economic and social effects of Thatcher government's monetarist policy made Keynesian economist Kaldor colourfully define monetarism as a visitation of evil spirits (Kaldor, 1981). As soon as 1984, both the governments of the United States of America and the United Kingdom had abandoned monetarist intended disinflationary policies, which had precipitated recession and unemployment without limiting inflation. Even in the homeland of the new monetarism, the Reagan administration of the United States had at last to recur to massive deficit-financed expansions in government spending in order to stimulate the economy. Nevertheless, though a strictly monetarist approach focussed on the control of money supply was soon dismissed, its corollary policies first applied in Chile were increasingly promoted as the inevitable outcome of a new economic orthodoxy, the self-appointed economic rationalism, or neoliberalism. Moreover, since the 1980s neoliberal policies spread all over the world, because they have been embraced as a blueprint for economic reform by the World Bank and the International Monetary Fund, which were both US-controlled. In other words, the success of Friedman's money-centred model, even if temporary, opened the way for a far wider transformation of economic theories and policies, and produced truly global effects until present day.

Counterrevolution and its alternatives (part III)

Neoliberalism is not, strictly speaking, an economic doctrine. Whilst it became an umbrella label for the general ideological background of mainstream economic policies after 1979, it continued to accommodate various and even conflicting streams of economic thought. In general, these streams, from Friedman's Monetarism to Lucas' New Classicism and Hayek's Austrian School share a little more than methodological individualism and a faith in Market's self-adjustment ability. In other words, neoliberal assumptions far exceed the limits of economic theories, which neoliberal-inspired governments, institutions and firms simply brandish as a supposedly objective justification for their actions. As a successful

discourse, neoliberalism has resulted from the multiple convergence or alliance of heterogeneous actors, from vociferous public intellectuals as Friedman to corporations' funding resources and to most political parties, to name but a few. On the theoretical level, this unholy alliance has been spearheaded by the recycling of an individualistic and objectivist anthropology, which sets atomised agents and the autonomous laws of the Market as its foundational narratives.

The fundamentalist fetishisation of mathematical tools, which still burdens economic studies, cannot instead be regarded as specific to, or as representative of the entire neoliberal field. For example, as already recalled, Hayek and his school never shared the physics' envy that deeply affects his Chicago fellows, as well as many of their Keynesian, Walrasian and Neo-Ricardian counterparts. As the latter generally rely on the same objectivist assumptions that reduce economic thought to quantification and economic actors to quantifiable behaviours, they have since fruitlessly crossed swords with neoliberals on the same autistic mathematized battlefield.

The autistic retreat towards mathematics has left a theoretical void, which has been often filled with the call for some ethical *deus ex machina* that could clearly rebuke neoliberal claims. This appeal to ethics for providing an external and somewhat higher necessity than the economic one actually confirmed the supposed absolute autonomy of economic interactions, as represented by the neoliberal narrative of the Market. Moreover, it kept deepening the baroque fault that seventeenth-century natural philosophers dug, and twentieth-century scientism has even more fervently excavated, between facts and values.

However, not all economists would hide in the modernist trench of facts, refusing to accept a more intrinsic entanglement of ethics and economy as it were an invitation to drink and drive (Sen, 2000). In particular, the recognition of the ethical content of economic theories has found notable expression in the work of Sen, who also proposed an ethically and theoretically alternative approach to the assessment of economic wellbeing. Since the 1930s the latter has been evaluated through the Gross Domestic Product index, which had been devised by Kuznets to quantify the productive power of a nation by summing up the market value of all its goods and services. Sen substantially contributed to the elaboration of an alternative indicator, the Human Development Index, which took account of people's capabilities rather than utility or opulence. More generally, Sen's work has helped in reconsidering not only the tools of economic theories, but also the aims of both economy and economics. Such reconsideration is the theoretical focus of the opposition to neoliberal policies that gathered around the protest against The World Economic Forum and the meetings of the G8, the group of the eight most industrialised countries. These protests fostered a growing demand for an economy as if people mattered, which has since found expression in a widening range of economic research, both theoretical and applied. In particular, the questioning of the supposed autonomy of economic mechanisms from the broader field of human interactions challenged the very foundations of modern economic theory. (Toulmin, 2001).

The joint venture of economy and progress

Since the eighteenth century, economists theoretically constructed the economy as an autonomous sphere, which had been severed from the more general field of human activities. From within the perspective of economic thought, few complained about this

severance. One notable exception was Sismondi, who opposed Say not only with the language of economic equations, but by also exposing the frightful human cost of the application of equilibrium theory. Marx too espoused Sismondi's humanitarian worries, but he preferred to found his critique of political economy exclusively on scientific economic analysis, which he believed was a firmer ground than ethics. Therefore, though he rejected the supposed natural character of bourgeois economic relations, he endeavoured to describe such relations as being socially and historically objective. Hence, the Marxian critique of bourgeois economic exploitation restated the Classical view of an autonomous economic system, which however would eventually succumb to its internal contradictions.

Long before Hayek, Marx had integrated his fundamental theory of value, which was modelled on physico-chemical conservation laws, within an historical evolutionary framework, which rephrased Hegelianism in terms of Darwinian biology. In particular, Marx redefined historical progress as a conflictual process whose stages he identified as different modes of production. On the one hand, such a framework confirmed and sustained the social and political radical emancipatory expectations of its author, as it were to do with several generations of his followers. On the other hand, it presented as an inevitable historical stage the very process of commodification that the combination of industrialism and colonisation was then beginning to spread worldwide. It is then not surprising that the industrialist bias until the 1970s remained, under the label of development, the inspiring muse of economic policies regardless of cultural, geographical, theoretical and even ideological affiliations.

A turning point occurred in 1973, when the US administration and its Western allies presented a commercial war with the OPEC countries, the main oil producers, as the result of the depletion of oil reserves. Whilst the propaganda about the latter supposedly objective condition was meant to justify the adoption of compulsory measures for reducing oil consumption, it substantially contributed to raising a general concern with energy sources. In that climate, the combined effect of a rising ecological awareness, a political refusal of authoritarian centralisation and a theoretical scepticism on the neutrality of science produced a significant erosion of the standard narrative of linear historical progress, whose most apparent justification was the ever increasing availability of resources granted by industrial development.

Nevertheless, since 1979 the neoliberal concoction of early modern rationality with bits of information theory and evolutionary biology brought about a tidal wave of social, political and cultural backlash across governments, media and academia. Neoliberal discourse not only gave renewed emphasis to the rhetoric of progress through its enthusiastic and uncritical endorsement of technological innovation. It also endowed the Market with the ability to turn scientific and technological progress into social and political wellbeing. Therefore, neoliberalism propped up the already crumbling faith in progress with a renewed faith in the Market. In Hayek's approach, which is undoubtedly the subtler theoretical contribution to neoliberal discourse, progress had to be redesigned in order to be saved. In particular, Hayek moved from a theological and teleological model of progress to a biological model of undesigned and multicentered evolution, which he credited for the formation of the price system. Hayek considered the latter as an unplanned cultural inheritance just like language. Therefore, though he stressed the fundamental subjectivist spring of individual choice, he continued reifying actual economic interactions into a system, whose supposed autonomy he then strove to preserve.

Economy beyond economics

Despite the theoretical and practical shock of neoliberal hegemony, the demand for an economy as if people mattered began to spread also beyond the disciplinary boundaries of economics, where it met the contribution of anthropological, historical and sociological research. The first had long explored the complex interactions involved in a gift economy, thus challenging the evolutionary bias that associated complexity and commodification (Mauss, [1923-4] 1954). Moreover, the study of gift economies emphasised an underlined condition of abundance, as opposed to the scarcity paradigm advocated by classical and neoclassical economists in order to motivate economic competition (Sahlins, 1974).

Historians of economy had questioned the very nature of markets, both inside and outside capitalism, which is a term that after Sombart came to label the supposed univocal structure of modern exchange economies (Braudel, 1977). In particular, Polanyi described the multiple relationships involved in ancient pre-classical risk-free or nonmarket trade, in which "prices took the form of equivalencies established by authority of custom, statute or proclamation" (Polanyi, 1957a, p. 20). Therefore, Polanyi confirmed Weber's acknowledgement of the possibility of complex economic relationships outside of the modern commodification process (Weber, 1927). Moreover, he rejected an ahistorical concept of market, and he explored Aristotle's writings as an "eye witness account of some of the pristine features of incipient market trading at its very first appearance in the history of civilization" (Polanyi, 1957b, p. 67). Furthermore, Polanyi's reinterpretation of Aristotelian texts led him to the stunning recognition of "the derivation of the exchange from contributing one's share to the common pool of food" (Polanyi, 1957b, p. 94). However, it was in his previous work *The Great Transformation* that Polanyi provided a depiction of how markets took control of modern economy, whose disembedment from social relationships for the first time in history has been thus claimed by modern economists. According to Polanyi, "to separate Labor from other activities of life and to subject it to the laws of the market was to annihilate all organic forms of existence and to replace them by a different type of organisation, an atomistic and individualistic one" (Polanyi, [1944] 1975, p. 163).

Even within the specific framework of modern market activities, Braudel underlined a difference between the level of proper market exchanges and that of capitalism, which he identified with the top level monopolist and with speculative economic organisations that circumvent the market (Braudel, 1981-1984). Braudel dubbed the latter as antimarket, thereby subverting both pro-capitalistic, i.e. liberal theoretical tradition, and anti-capitalistic, i.e. anarchist, socialist and communist ones. Moreover, Braudel defined a third and lower level of economic interactions, a vast uncharted territory which he called material life. Also in 1976, he argued that mankind was more than waist-deep in this level of daily routine outside of exchange rules. He considered this habitual world as permeating human life "just as the shadows of evening tint the landscape" (Braudel, 1977, p. 16). On the one hand, Braudel's recognition of the submerged continent of unaccounted economic activities exposed the limits of economy as constructed by economics. On the other hand, Braudel's fascination with almost ageless daily activities did not help him to focus on the transformation of unpaid work under a generalised exchange system.

Illich claimed instead that the attack of the exchange system on subsistence economy, which generated the bulk of *homines oeconomici* as wage workers, had also produced a new form of complementary unwaged work. Female housework has been the prototype of such new economic activity, which Illich termed shadow work. "In practice, the

labour theory of value made man's work into the catalyst of gold, and degraded the homebody into a housewife economically dependent and, as never before, unproductive" (Illich, 1981, p. 107). Moreover, female housework was exported from Europe with male waged work, thus spreading worldwide the turn from the traditional self-sufficient household into the new basic unit of family consumption. Illich argued, against progress-biased economics, that the process leading to the defeat of self sufficiency was neither necessary nor complete. On the contrary, he advocated the reversal of that process by defending and expanding the vernacular domain, that is the area variously defined as use-value oriented activities, non-monetary transactions, embedded economic activities or substantive economics. In 1981 such reversal was already in place, so that Illich could claim that "all around the world thousands of movements try to unplug their communities from both wage and shadow work through the choice of an alternative use-value oriented life style (Illich, 1981, p.130).

Beyond economic fundamentalism

A rejection of economic fundamentalism came again recently from students, who protested against the narrowness of their economics education. The protest started in 2000 in Paris and has since spread worldwide, gaining the support of both students and economists under the banner "Post-Autistic Economics". The new movement seeks to underline the unresponsiveness to reality of mainstream neoclassical economics, and its pathological obsession with mathematical models. Nevertheless, the reform movement does not simply intend to replace neoclassical orthodoxy with another economic doctrine. On the contrary, the protesters called for a reform of economics education and research by adopting what they called a "broadband" approach, meaning pluralistic.

In an international open letter drafted in 2001 the protesters demanded that economic analysis include the consideration of history and the recognition of the embedment of economic activities in culture (Kansas City Proposal, 2001). Moreover, they criticized the narrowness of the model of *homo oeconomicus* and they exposed as problematic the distinction between facts and values. Today the Post-Autistic Economic Network, together with the Association for Heterodox Economics and the International Confederation of Associations for Pluralism in Economics pose a growing challenge to the fundamentalist grip of neoclassical orthodoxy over economics. However, as the open letter remarked, what is at stake is not simply a new and more adequate representation of economic facts. On the contrary, the modern dichotomy between positive (or descriptive) and normative (or prescriptive) approaches is at last being confronted also from within economic literature. Therefore, the distinction and the relation, "between economics and economy, between theoretical and practical activity, in short between economics as a discipline and economy as a thing" begin to be acknowledged as a problem. (Callon, 1998, p. 1).

Polanyi had already showed how economic theories had played a major role in shaping economy, and in particular in the establishment of the labour market (Polanyi, [1944] 1975). Moreover, as previously recalled, he had stressed that economic activities, far from being self-sustaining, were always framed by an institutional context. Granovetter went further by turning Polanyi's embedding context into a social network, which was not simply connecting pre-existing entities, but also configuring these entities' ontologies (Granovetter, 1985). Therefore, Granovetter replaced *homo clausus*, i.e. the enclosed human of modern economic theory with *homo apertus*, i.e. the open human of social network analysis.

According to Callon, it is precisely this openness that allowed humans to be shaped or performed as calculative agencies (Callon, 1998). In other words, *homo oeconomicus* does exist, but more as a result than as a presupposition of economic activities. Moreover, Latour and Callon argued that the latter were, in turn, shaped, performed, and formatted by economic theories (Latour, 1987) (Callon, 1994).

With Callon's statement of the embeddedness of economy in economics my exploration of economic fundamentalism comes full circle. My narration began by contrasting the allegedly descriptive approach of neoliberal views with those views' strongly prescriptive agenda, whose implementation over the last thirty years helped neoliberal prophecies to self-fulfil. I later sketched the path of modern economic thought mostly as a restatement of fundamentalist assumptions upon the likewise fundamentalist concepts of value and market, and I showed the neoliberal recycling of the neoclassic rhetorical apparatus as but another avatar of modern theoretical fundamentalism. Moreover, I recalled how neoliberalism emerged as a devastating social, cultural, and political backlash to the extraordinary opening of the claiming struggles of the 60s and the 70s. This opening lead to the questioning of the narrative of progress and of the dichotomy between facts and values, and to which neoliberalism promptly opposed its unconditional endorsement of technological innovation and its restatement of the factual objectivity of neoclassical economics. Neoliberal prescriptions in turn took charge of providing factual evidence for neoclassical descriptions. Consequently appeal to factual economy as a means of disproving neoliberal assumptions becomes partially untenable and surely counterproductive, as it reconfirms the facts versus values dichotomy that underscores neoliberal rhetoric. But on the contrary, the recognition of the embeddedness of economy in economics, which finds a more general expression in Callon's recognition that "all science is performative" (Callon, 2006, p.10) would radically undercut neoliberal modern fundamentalism. In particular, it would deny neoliberal rhetoric the opportunity to hide, behind the alleged objectivity of the laws of the market, the subjective responsibility of a worldwide network of class alliances.

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