

# Chapter 4

## Biological Metaphors in Economics: Natural Selection and Competition

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*Once, [Henry] George recalled a conversation a decade earlier between himself and Youmans [promoter of the publication of Spencer's works in America] on the situation of American society. "What do you propose to do about it?" George had asked. To this Youmans responded "with something like a sigh:" "Nothing! You and I can do nothing at all. It's all a matter of evolution. We can only wait for evolution. Perhaps in four or five thousand years evolution may have carried men beyond this state of affairs. But we can do nothing."*

(R.C. Bannister, 1979, p. 75).

### 4.1 Introduction

In our time, we face stagnating production and employment but also, more generally, disappointing results in the provision of services that importantly affect our lives – in education, healthcare and social welfare, in transport and communications. To combat these ills one sole therapy is increasingly invoked: greater competition. Here, I am not referring to the idea that, in well-defined situations from the point of view of structure and of the actors involved, the stimulus from competitors, together with other forces, actions and stimuli, may revive waning energies through a spirit of emulation. A different idea has been asserting itself, with the force of common sense – all the stronger because more abstractly universal<sup>1</sup> and unconditional: namely, the idea that competition is the principal driving mechanism of society, and therefore steps towards increasing its presence in all fields must be the necessary and sufficient condition for economic growth and “social progress” (however defined). The

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<sup>1</sup> For a similar distinction between “universal” and “particular” determinants, aimed in that case at the limited explanatory capacity of analyses of the innovation processes starting from “diffuse and general” incentives to the reduction of costs, and which I shall recall later on, see Rosenberg (1976).

general nature of the relation between competition and growth (quantitative and qualitative) is seen as rendering unnecessary any “situated” analysis – i.e. based on knowledge of the specific situation – of the possible effects of an increase in pressure of competition. The general nature of the diagnosis thus engenders the general nature of the therapy.

At first glance, it seems rather paradoxical to invoke ever-larger doses of competition at a time when, with globalized markets, the forces of competition appear to have become incomparably more far-reaching and incisive than in any previous period in history. The current popularity of the term “competition” is partly due to its vagueness or ambiguity, hence to the wide range of its meaning. At a more superficial level, the call for greater competition stems from its identification<sup>2</sup> with the “capacity to face up to it”: thus the tautology that in order to overcome competition, greater competition is needed. At a deeper level, the ambiguity derives from the fact that the history of economic thought offers at least three different conceptions of competition: that of classical political economy (from Smith to Sraffa); the neoclassical idea of equilibrium (associated e.g. with Walras and others); and the neoclassical idea<sup>3</sup> of competition as a process (associated with the Austrian school, particularly with Hayek and others). From these three conceptions, as I shall briefly remark later, derive very different relations between competition and growth.

There is a very close relationship between saddling competition with such demanding tasks and the ongoing assertion, as from 1980, of the culture and monetarist policies of deregulation of markets; initially associated with the figures of Ronald Reagan in the USA and Margaret Thatcher in the UK, these have gone hand in hand with the current phase of expansion of the global market. The “salvationary” role ascribed to competition stems from the, very often unconscious, acceptance of some central points in monetarist theory as expounded in the writings of Milton Friedman and, above all, Friedrich von Hayek. However different, in some respects, the ideas of these two exponents of the Chicago school may be (Friedman belonging to the Walrasian rather than the Austrian current), they share a view of the economic process in which the biological metaphor of natural selection looms large. I shall argue that making competition the main driving function of society stems from likening the competitive process to that of natural selection. To what extent is such an assimilation legitimate?

It is widely acknowledged that metaphors have a rightful place not merely in general discourse but especially in scientific discourse, and not simply by way of ornament. Metaphors enable us to use “the inferential structure of one conceptual domain [. . .] to reason about another [. . .] domain” (Lakoff & Nuñez, 2000), or, in other words, to employ what has been learnt on one subject in order to comprehend

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<sup>2</sup> See, for example, Nardozzi (2004): “Where does the decline [of the Italian economy] come from? The clue to understanding this is the same as for the miracle that went before it: competition. . . But . . . unlike then . . . , the increasing international competition has not translated into increased productivity sufficient to improve or maintain the competitive position. What is lacking with respect to half a century ago is not competition itself but the ability to face up to it.”

<sup>3</sup> Some authors would locate the Austrian school outside neoclassical theory. This view is hard to reconcile with the acknowledged influence exercised by the writings of Carl Menger and especially, as I shall note, of Hayek.

another subject in a different field. This cognitive device is indispensable if we wish to understand (or represent) something abstract in concrete terms. Moreover, as Rorty (1979) remarks, “It is pictures rather than propositions, metaphors rather than statements which determine most of our philosophical convictions.” It is in the nature of metaphors to propound analogies in different contexts, and thus to make possible creative and stimulating illumination or misleading and dangerous parallels. One may wonder whether, and to what extent, the process of natural selection put forward by Darwin actually finds its counterpart in the “evolutionist” interpretations of the competitive market propounded by the monetarists, especially by Hayek, and ultimately what role evolutionism plays in their “vision” of the social process. It will be seen that while the application of the metaphor of natural selection to the analysis of human society in general, and of the competitive market in particular, is much more problematic than is usually thought, other concepts drawn from evolutionary biology may prove to be far more useful for a “non-panglossian” analysis of the development of the social processes. I shall conclude, however, that, in the case of Friedman and Hayek, though by partly different routes, evolutionism turns out to be associated – through a rhetorical demonstration by analogy – with the attribution of characteristics of optimality (otherwise hard to justify at theoretical level, let alone empirically) to the “spontaneous” evolution of competitive markets.

## 4.2 Malthus, Darwin, Social Darwinism

The history of the relations between economics and biology is a tortuous one, with many hitherings and thitherings and crossing paths. Suffice it to recall here the influence exerted by Malthus’s *Essay on the Principle of Population*<sup>4</sup> on Darwin in the process that led to the discovery of the principle of natural selection. In a well-known passage of his autobiography, Darwin (1958) writes:

In October 1838, that is, fifteen months after I had begun my systematic enquiry, I happened to read for amusement Malthus on *Population*, and being well prepared to appreciate the struggle for existence which everywhere goes on from long-continued observation of the habits of animals and plants, it at once struck me that under these circumstances favourable variations would tend to be preserved, and unfavourable ones to be destroyed. The result of this would be the formation of new species.

The passages in *Notebook D*,<sup>5</sup> where Darwin (between 28 September and 3 October 1838) jotted down his impressions from reading Malthus, give a more precise idea of the stimuli that led Darwin to modify and rearrange his previous conceptions. Up to then, Darwin had concentrated on the struggle among the species. Reading the *Essay on the Principle of Populations*, which deals almost exclusively with human societies, prompted Darwin to focus also on conflict *within* species.

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<sup>4</sup> Darwin’s remarks refer to the 1826 6th edition of Malthus (1798). It is interesting to recall that also A. R. Wallace, who discovered the principle of natural selection independently of Darwin, took inspiration from Malthus.

<sup>5</sup> For a close reading of these passages, upon which I have amply drawn in this section, see La Vergata (1990a) and Hodge and Kohn (1985).

Moreover, he was struck by the singularly forceful manner in which Malthus put forward “the idea of a war between the species.” Here, for the first time,<sup>6</sup> the extent and intensity of the struggle is energetically associated with a conflict at once fundamental and inevitable, the fight to appropriate the means of subsistence in a situation in which the growth of population systematically outruns that of the resources. No one prior to Malthus had “seen clearly,” writes Darwin, the existence of a “great check” on the growth of population in human societies. In their relation with nature, human and non-human species are subjected to checking forces (nowadays we should say “negative feedbacks”), partly similar, partly different.

As regards the analogies, Darwin remarks that in man as in other species “even a few years plenty makes population [. . .] increase, and an ordinary crop then causes a dearth in Spring.” The existence of “repressive checks” to reproduction such as famine, cold, epidemics, etc. followed by death and/or a slowdown in reproduction retraces the re-equilibrating mechanism occurring in human societies to that existing in nature.

Malthus argued that in human societies the “repressive checks,” influencing the mortality rate, and hence *ex post*, are mainly “poverty and vice,” the latter term used to describe the illicit practices of infanticide and abortion, especially frequent among the poor. He identified the peculiarity of the human species in two circumstances: the possibility to increase the production of the means of subsistence in proportion to the increase of population, and the faculty of predicting the consequences of one’s own actions. The first of these, however, was effectively cancelled out by the effect of diminishing returns in the production of food, which underpinned the “iron law” by which the means of subsistence grew arithmetically but not geometrically. The faculty of prediction, which remained the sole feature that distinguished the human species, enabled one to choose a “preventive check”<sup>7</sup> on population growth, based on moral restraint. This “conscious” check entailed delaying marriage and abstaining from the “natural propensities” to procreate until one was able to provide for children. Hence Malthus reached the conclusion that from evil (poverty and vice) good may ensue, i.e. the improvement of man’s character and the increase of his energy.

At this point in his notes, Darwin uses a “creative analogy” – in the phrase of La Vergata (1990a, p. 349) – to establish a surprising parallel between this “moral message” of Malthus and the outcome of the process of selection. The description of the struggle for survival in the presence of an imbalance between population

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<sup>6</sup> The subject of disproportion between demographic pressure and resources has, however, numerous precedents, some of which are recalled by Malthus himself. See La Vergata (1990a), p. 349, note 122.

<sup>7</sup> The preventive check of moral constriction was added by Malthus after the first edition. Note that a further preventive check was also added, the fear of poverty, i.e. the fear of seeing one’s standard of living fall. This is not a negligible alteration, at least in principle, in Malthus’s deterministic-biological scheme: the check on population no longer involved the mere availability of the means of subsistence, but also the standard of living attained and thus expected/desired by the various social strata. In this way, Malthus sought to answer the objection regarding the lack of a restrictive check on reproduction in the more prosperous classes.

and subsistence, of the “necessary” process of adaptation, and of the outcome that ultimately ensues as a “positive” result of the demographic pressure and the struggle itself, are expressed – in this initial formulation of the theory of natural selection – in the following words:

One may say there is a force like a hundred thousand wedges trying [to] force every kind of adapted structure into the gaps in the economy of Nature, or rather forming gaps by thrusting out weaker ones. The final cause of all this wedging, must be to sort out proper structure, and adapt it to change – to do that for form, which Malthus shows is the final effect (by means however of volition) of this populousness, on the energy of Man.<sup>8</sup>

Malthus’s idea about the existence of universal laws of nature, valid at all times and for all living beings, takes its place in a consistent conceptual framework that we have no grounds for ascribing to Darwin (though some Malthusian suggestions do occur in Darwin’s writings). From the appeal to a law of nature, universal and thus inexorable, that man could not escape, Malthus’s doctrine had drawn “all its ideological and polemical force.”<sup>9</sup> His aim had been to refute the ideas of Godwin and Condorcet on the perfectibility of man and society and the construction of a system of equality. He thus takes his place among those who opposed the ideas of progress of the French Revolution, an opposition set in motion by Burke’s *Reflections on the Revolution in France*. One corollary that Malthus had drawn from his theses was the proposal to repeal the Poor Laws,<sup>10</sup> in order to dissuade the poor from marrying even when they lacked the means of subsistence and to spur them to a greater “sense of responsibility.” In hypothesizing “laws of nature” valid “ever since we have had any knowledge of mankind” and extending to the animal and vegetable kingdoms, Malthus (1979) also stated that such laws were inescapable, nor could the evils of humanity be in any way ascribed to human institutions. In line with a long tradition (Malthus, 1979),<sup>11</sup> he suggested that the “lash of want”, in accord with divine providence, would stir humanity to shake off its congenital idleness and bring out man’s “superior,”<sup>12</sup> moral faculties.

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<sup>8</sup> Cf. La Vergata (1990a), p. 339 and note 106.

<sup>9</sup> *Ibid.*, p. 349, “Among plants and animals the view of the subject is simple,” Malthus (1979) writes “They are impelled by a powerful instinct to the increase of his species, and this instinct is interrupted by no reasoning or doubts about providing for their offspring. Wherever therefore there is liberty, the power of increase is exerted, and the superabundant effects are repressed afterwards by want of room and nourishment, which is common to animals and plants, and among animals by becoming the prey of others.”

<sup>10</sup> Though he calls this provision “a palliative”, Malthus (cf. *Ibid.*, p. 101) claimed that it would “at any rate give liberty and freedom of action to the peasantry of England, which they can hardly be said to possess at present. They would then be able to settle without interruption, wherever there was a prospect of a greater plenty of work and a higher price for labour. The market of labour would then be free, and those obstacles removed which, as things are now, often for a considerable time prevent the price from rising according to demand”.

<sup>11</sup> On the tradition of the “lash of want” and Malthus’s natural theology, cf. La Vergata (1990b), pp. 76 et seq.

<sup>12</sup> It should be recalled that the progress from idleness to diligence, to self-control and responsibility under the lash of want underpins the Victorian evolutionist anthropology preceding Darwin’s theories and, as La Vergata has written (*ibid.*, p. 89) “owes very little to them.” In this literature,

In his first reading of the *Essay*, Darwin had mistakenly thought Malthus intended his theses on population to refer to the human species alone – and, to be sure, this perspective does occupy the central position in his work. Darwin’s broader aim was that the perspective should be applicable also to plants and animals other than human,<sup>13</sup> and it was along this path<sup>14</sup> that he arrived at the discovery of natural selection.

Reading Darwin’s notes, one gets the impression that he by no means takes for granted the continuity of the human world with that of other living beings but, rather, sees it as a problem. He continually confronts the one world with the other, seeking to demonstrate similarities and divergences, well beyond the lines indicated by Malthus. Their positions do however converge on one important point: both are bent on tracing out a history that dates from the “ever since we have had any knowledge of mankind;” and this is why, unlike what many interpreters were to argue, the reference to contemporary economic reality (competitive conflict in the markets) is by no means evident in Malthus’s statement of the principle of population. As Manier (1978) has remarked “The famous ‘ratios’ of geometric and arithmetic series express a mathematical thesis affirmed by both men. There is nothing distinctive of political economy or of human demography in any of this.” The idea of a constant standard of living (measured by the ratio of food production to population), with oscillations based on the hypothesis of a positive ratio of standard of living to growth of population, does not of necessity presuppose a competitive mechanism – though Ricardo would invoke such a mechanism, inspired by Malthus (and Adam Smith), to illustrate the convergence of the market wage to the long-term “natural” wage. The economic and political aspects of Malthus’s thesis mainly had to do with his forecasts on the effects of exacting poor rates (leading to a rise in the prices of subsistence goods, since he assumed their production would not be affected, then to an increased birth rate, resulting in a check on the “productive industry”) (Malthus, 1798, p. 95). These propositions, according to Manier, “applied only to the behavior of human beings; they were not general laws describing (or predicting) the behavior of all organisms” (Manier, 1978, p. 81). In the view of Malthus, the “struggle for existence” was indeed a “zero-sum competition for a scarce resource (subject to the law of diminishing returns”) (ibid., p. 82), but at the same time it acted as a brake

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the creatures who are “idle par excellence” are the savages, the peoples of backward countries. The influence of this anthropology (and of the pedagogy that derives from them) can be felt in several of Hayek’s writings, which take inspiration from this literature. See, for example, the idea – in (von Hayek, 1982) discussed in Hodgson (1993) – that egalitarianism is an atavistic, tribal residue, based on primordial emotions and subsequently surmounted by social rules based on the spontaneous order of individuals.

<sup>13</sup> K. Marx (cf. Marx, 1969, p.121) remarked that, “In his splendid work, Darwin did not realize that by discovering the ‘geometrical progression’ in the animal and plant kingdom, he overthrew Malthus theory. Malthus theory is based on the fact that he set Wallace’s geometrical progression of man against the chimerical ‘arithmetical’ progression of animals and plants.”

<sup>14</sup> By taking this route, Darwin was actually led to ignore the differences between the human species and the other living species (moral checks) that Malthus had introduced after the first edition. Cf. La Vergata (1990a), pp. 354–355.

on change (not as an agent of change) since it imparted cyclical oscillations around the standard allowed by the stage of development achieved. Darwin's notion of the "struggle for existence" was, as we shall see, quite different.

We must emphasize, however, the presence of a link (arithmetic, first of all) between the indicator of the standard of living employed by Malthus and the relation that would be employed, after the "dissolution" of the Ricardian school, by the "wage fund theorists" for determining wages in a capitalist market. For Ricardo, the necessary consumption was obtained by multiplying wages at natural long-term level by the number of workers employed. The difference between production and necessary consumption, that is social surplus, divided by the capital employed was used to calculate the rate of profit and the relative prices. It followed that the main argument about distribution, for a given level of rent, turned on wages and profits. The followers of Ricardo (James Mill, McCulloch and others) transformed the identity relation from which necessary consumption was obtained (wages multiplied by employment) into a causal relation, which is also an arithmetical truism: they now took the wage fund (considered as the fund of available wage goods) as a given, by which each variation in the wage (or in the amount doled out to the non-working poor) leads to an inverse variation in employment. The argument over income distribution, *for a given wage fund*, is thus transferred within the working population.<sup>15</sup> It is, then, the conception of the wage fund, and subsequently around 1870, the marginalist (or neoclassical) theory, concentrating on competition among the owners of the same scarce resource (though of different productivity, in the case of the marginalists), that provide the backdrop for the analogy between natural selection and competition that would be asserted by the exponents of "social Darwinism." For both these conceptions feature an inverse relation between real wages and employment that, however, finds no counterpart in the theoretical perspective of classical political economy.

Scholars bent on recruiting Darwin among the supporters of so-called "social Darwinism" have argued that he had rigorously confined the principle of evolution based on natural selection to the animal and vegetable kingdoms – though, in *The Descent of Man* (Darwin, 1871), which followed the publication of the *Origin of Species*, he did, very tentatively, apply the principle to cultural, moral and social aspects. But this argument does not stand up in the light *inter alia* of the *Notebooks* (first published in a complete edition in 1987) (Schweber, 1977, p. 232). If by the term "social Darwinism" we understand "the more general adaptation of Darwinian, and related biological concepts to social ideologies,"<sup>16</sup> there can be little doubt that it should also embrace Darwin himself. As has been remarked,<sup>17</sup> we must try to avoid

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<sup>15</sup> Cf. Picchio (1992), p. 34, which should also be consulted (Chapter 2) for the influence exerted by Malthus's theory of population in the transition from an analytical picture based on Ricardo's conception of the natural wage (in which differences in the growth rate of the population and in production determine oscillation in the market wage around the long-term wage) to the theory of the wage fund.

<sup>16</sup> This is one of the definitions mentioned by Bannister (1979), p. 5.

<sup>17</sup> Cf. Young (1985), p. 609. The quotations that follow are taken from p. 626.



the positivist illusion that in historical reconstruction we can draw a clear distinction between scientific observations and theories and the values and meanings they had for their authors. It is hard to disentangle the concepts drawn from biology and from ideology – as we have seen in the case of Malthus – so that we may conclude that “it is from society that we derive our conceptions of nature” and of human nature. Therefore, “the intellectual origins of the theory of evolution by natural selection are inseparable from social, economic and ideological issues in nineteenth century Britain.” This is the conclusion Young arrives at after substantiating the presence of Malthusian accents<sup>18</sup> in Darwin and fact that his friend and disciple T.H. Huxley on a series of topics (concerning women, blacks, uncivilized peoples, the lower classes, etc.) took “positions that were relatively progressive for their time, but relatively shocking to our eyes” (Young, 1985, p. 958).

And yet, within the “family” of social darwinists, which owes its recurring popularity to its wide range,<sup>19</sup> the differences are very significant. One way of highlighting these differences may be to adopt the definition of “social Darwinism” given by Hofstadter, which is narrower than the previous one. It consists essentially of three propositions:<sup>20</sup>

1. Identification of the “struggle for existence” among living species competing in a market for products and factors under conditions of scarcity;
2. Identification of “survival of the fittest” in the process of selection occurring in a competitive market, and of its assumed “optimal” outcome: that in nature, as in the social field, the winners will be the most successful competitors in the division of resources, and that the selection process will lead to a continual improvement both of species and of society; and
3. The (metaphorical) assimilation between times and ways of change in the biological and social areas: thus, just as the generation of new species through natural selection requires long times, so social change must proceed by slow, gradual accumulation, without being accelerated or forced.

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<sup>18</sup> See for example Darwin (1871), quoted in Young (1985), p. 619. But see also, for examples of distancing from the ideological conceptions of Malthus, La Vergata (1990a), p. 361.

<sup>19</sup> On this point, the reader is referred to La Vergata (1985), p. 958.

<sup>20</sup> Cf. Hofstadter (1955). But, according to Hawkins (1997), who tends to include also Darwin in his definition, the “social Darwinists” share the following five propositions: (1) the laws of biology regulate the whole of organic nature, including human beings; (2) the pressure of population growth on resources generates a struggle for existence among organisms; (3) physical and mental traits conferring an advantage on their possessors in this struggle (or in sexual competition) could, through inheritance, spread through the population; (4) the emergence of new species and the disappearance of others is explained by the cumulative effects in time of selection and inheritance; (5) the process of natural selection described in the preceding points can also explain “many, if not all, aspects of culture – religion, ethics, political institutions, the rise and fall of empires and civilisations, in addition to many psychological and behavioural aspects. Social Darwinists, then, endorse two fundamental facts about human nature: that is continuous with animal psychology, and it has evolved through natural selection”.



I think that it would be difficult to find in Darwin's writings any acceptance of these three points; they entail not only considerable simplifications but also a direct correspondence between biological and economic categories. The lack of any such acceptance might be held to be due to Darwin's tendency to caution – the same caution, for instance, that led him to delay publishing his discovery. But this caution reflects, in turn, a complexity stemming from the interaction between the general orientation of Darwin's researches and the analytical categories employed by him. In the first place – and this has to do with the “psychology of discovery,”<sup>21</sup> – we need to draw a distinction between that general orientation, which led him to discover the mechanism of change through natural selection, and the hypotheses underpinning the specific mechanism that he identified and its significance. With regard to the general orientation, one may accept the idea, put forward by Ospovat (1979), that Darwin's deism initially influenced the view that the general trend of evolution is progressive, and that evolution itself is the means “by which the harmony between the organism and the environment is kept” (La Vergata, 1990a, p. 528). There can be no doubt, however, that the content of his theories in no way depends on these convictions (*ibid.*, p. 528 et seq). For that matter, as regards his general orientation, Darwin himself admits to “oscillations from one and the other extreme,”<sup>22</sup> sometimes emphasizing, along with the benefits of nature's harmony, the great suffering and pain that accompany the processes of adaptation and/or destruction of species. Kohn<sup>23</sup> speaks of “ambiguity” (though “fertile”) in Darwin's rhetoric, due to the conflicting intermesh between a natural-theology component, a materialist component in the conception of nature and a liberal-radical component in the sphere of religion.

At the general conceptual level, Darwin's thought is certainly complicated and difficult to condense into effective formulas. But no less rich in articulations, intersections and nuances is the idea of “struggle for existence”, that appears very different from Malthus's concept, as it also diverges from the concept implied in the definition of “social Darwinism” propounded by Hofstadter, where it is assimilated to the competition obtaining in conditions of scarcity. If for no other reason than that, as Darwin himself underlines, he used “this term in a large and metaphorical sense” (Darwin, 1859). The metaphor (La Vergata, 1990a, p. 300), as we saw, is built around multiple significances that, says Darwin (1859), “pass into each other.”

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<sup>21</sup> Here I take up, in a somewhat different context (but for reasons already mentioned I think the reference to Smith is not relevant), a distinction made by Gould (1980): “I believe that the theory of natural selection should be viewed as an extended analogy – whether conscious or unconscious on Darwin's part I do not know – to the *laissez faire* economics of Adam Smith. . . But the source of one idea is one thing; its truth or fruitfulness is another. The psychology and utility of discovery are very different subjects indeed. Darwin may have cribbed the idea of natural selection from economics, but it may still be right”. On this point see also La Vergata (1985), p. 956.

<sup>22</sup> Cf. Darwin (1887), p. 304; quoted in La Vergata, *ibid.*, p. 535, and, more in general, see Chapter 8 of the latter.

<sup>23</sup> Cf. Kohn (1989), p. 214, quoted in La Vergata, *ibid.*, pp. 535–536.

By “struggle” he understands “an effort to overcome a difficulty” (Manier, 1978, pp. 82–83) through relations of dependance, through variations arising at random, and through direct competition for the use of space or goods. “Struggle of organisms for existence,” however, also implies that they exhibit “varying degree of success in the effort to survive and leave fertile progeny, in some single, but complex, environment” (ibid., p. 82). The “struggle,” then, is not merely for food, because resistance to difficulties and “success in leaving progeny” will be equally important, nor is it only a direct contest among species: it is “the mesh of relations who link together all the forms of life nowadays called “ecotype,” which is responsible for possible unexpected outcomes of natural events” (La Vergata, 1990a, p. 287). And this mesh of relations also comprises forms of cooperation and association (ibid., pp. 298–299), which must therefore be included in the idea of struggle, rather than set against it. Manier concludes that the presence of so many meanings attributed to the term “struggle” is in sharp contrast to the employment of the term in the *Essay on Population*, and poses afresh the question of Darwin’s indebtedness to Malthus.

In order to account for phenomena in the natural and human worlds whose wide variability and complexity found no satisfactory explanation, Darwin devised a new language; he employed metaphors which, as Manier has shown, allowed him great flexibility in knowledge, while on the other hand they underlined the inseparable link between the cognitive and the emotional dimensions,<sup>24</sup> and thus conveyed a profound harmony with his vision of nature, morality and science.

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<sup>24</sup> Cf. Manier (1978), pp. 37–40 and 89–96. The significance assumed by the metaphors in Darwin’s thought at the time when the theory of natural selection was formulated can be retraced, in Manier’s view, above all to the influence exerted by the Scottish Realism of Dugald Stewart and by the idea of nature expounded by Wordsworth in *The Excursion*. Stewart had conceived the historical development of language as a metaphorical (‘artificial’) elaboration of a system of communication developing initially from “natural signs” belonging to the affective sphere and linked with primordial biological functions. Discussing the origin and significance of terms like “beauty,” Stewart criticized the “essentialist” thesis that the different meanings must be connected with one another like the species of a common genus. In this, he anticipated Wittgenstein’s idea of “family resemblance,” which, in biology and anthropology, has found its counterparts in polythetic classifications, cf. for example Beckner (1968) and Needham (1975). In his notes on Stewart’s essays *On the Sublime* and *On Taste*, Darwin shows he understands Stewart’s criticism of the “essentialist” idea in his comment: “D. Stewart does not attempt by one common principle to explain the various causes of those sensations, which we call metaphorically sublime, but... it is through a complicated series of associations that we apply to such emotions the same term” (cited in Manier, 1978, p. 39). Wordsworth’s poem proposed “a natural aesthetic-sentimental religion, not a philosophical-theological one, which seeks the sense of life in nature and human experience” (cf. La Vergata, 1990a, p. 313). The young Darwin was thus enabled to obtain, Manier argues, an “antidote” to the positivist methodology, eluding in this way reductionism and mechanism. Darwin’s metaphors also took on an “anthropomorphic” note in his description of animal behaviour – not to say a “moralistic” note, in which the cognitive and the affective dimensions become inextricably intertwined (cf. Manier, ibid., pp. 173, 194–195).

### 4.3 Darwin, Spencer and the Application of Natural Selection to Social Systems

Among the “social Darwinists” (in the first definition given here), Darwin is the only “real” Darwinian. This underlines that what passes for “social Darwinism” very often derives from Spencer’s ideas on evolution rather than Darwin’s. Spencer’s definition of “evolution” is consistent with the etymology of the word, which implies “unravelling”, i.e. a predetermined “unfolding” by a given entity (an essence). It involves a one-directional movement towards progress through gradual specialization and differentiation. Diversity is the teleological outcome of the process of evolution, not its starting point. The process of evolution leads to an equilibrium (Spencer calls the process “equilibration”) (Hodgson, 1993, p. 83), in which the functional integration of the components of the organism ensures harmony and coherence. This kind of evolutionism, then, displays a strong functionalist imprint. In addition, its conception of the “survival of the fittest,” consistent with the essentialist grounding of its thought – only slightly weakened by his Lamarckism (which admits the inheritance of acquired characteristics) – differs profoundly from the conception of Darwin. The idea that there exists in nature a force that eliminates all variations or deviations is called “eliminationism” by biologists (Mayr, 1982): a static type of conception (essence is immutable, envisaging only “degenerate” variants) that must be clearly distinguished from the dynamic process of natural selection, based on continual variation.

The association of individualism and evolutionist optimism is employed by Spencer – and thereafter by many other authors ranking as “social Darwinists”<sup>25</sup> – to justify a policy of *laissez-faire*: while State intervention would reduce pressure on individuals to compete by inhibiting the assertiveness of the fittest, free competition between individuals and enterprises would provide the best environment for social progress. However, the idea of associating “survival” with “optimization from fitness” has come in for much criticism, which may also be directed towards certain interpretations of Darwinian selection.<sup>26</sup> In the first place, as Sober (1981) has remarked, it is by no means certain that those held *ex ante*<sup>27</sup> to be the “fittest” are actually those who survive. Moreover, the slogan of “survival of the fittest” regards no more than the differential in the death rate, neglecting the birth rate<sup>28</sup> (whose importance Darwin stressed). When all is said and done, Hodgson (1993) observes, with the expression “survival of the fittest” Spencer has made no useful contribution to evolutionism: he has overestimated the potential of isolated atomistic

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<sup>25</sup> While some follow Spencer in exalting the progressive function of “competitive pressure,” others, like Graham Sumner, stress the need not to obstruct the process that leads to the assertion/survival of the fittest by welfare policies aiming to reduce social inequality.

<sup>26</sup> For an overview see Hodgson (1993), pp. 94–97.

<sup>27</sup> It is important to appreciate the *ex ante* character of the definition in order not to fall into the (very frequent) error of tautologically (and hence *ex post*) deriving the capacity to adapt and survive from the fact of survival.

<sup>28</sup> Cf. Gould (1982), p. 101, cit. in Hodgson (1993), p. 95.

organisms, ignoring their interactions with other organisms and with the environment; he has heeded only success and not the creative function of error (or variation, to which Darwin called attention); he has emphasized success and optimized adaptation rather than the capacity for reproduction and transmission, and has observed only conflict and ignored cooperation.

In Darwin's conception, on the other hand, evolution entails three stages: (1) a process that creates variability and diversity among the beings belonging to a population; (2) a process that selects among the entities subjected to the processes of variation; and (3) a differential transmission of the varieties selected to the subsequent generation. Single individuals are not transformed, change occurs at the level of population.

It is important to emphasize that the first two processes are independent of one another: at the individual level, the variability is random (it is largely independent of the context), whereas at the aggregate level of population the change has a direction. Selection tends to reduce the variations, while the processes that create variability and diversity tend continually to reproduce them.

In applying Darwin's conceptions to socio-economic systems, it is taken for granted that evolution will assume a Lamarckian connotation, i.e. the hereditary transmission of acquired characteristics will be allowed. The crucial point, however, concerns the consequences of intentionality, an aspect that in the evolution of living non-human species can (in a first approximation) be bypassed. The intentionality of human actions influences, first, the process of production of the variations, which will not be random and will therefore not be independent either of the process of selection or of the context. This is tantamount to saying that the process of production of the variations will be influenced in particular by the knowledge (and understanding) of the way in which the process of selection works.

But the terms in which the process of selection unfolds, too, are influenced by the intentionality (and the power) of the agents: these terms are negotiated through forms, modalities, channels that are themselves the object of negotiation. Moreover, the actions of the agents that have undergone selection are mediated by the attributions of identity<sup>29</sup> of the agents with which they interact. Since these attributions, too, are the result of a negotiation, the actions that derive from them will likewise be the result of a negotiation. And where there is negotiation (and hence influence from the context), the automatic nature of the consequences and a general nature of the outcomes cannot be assumed.

Human intentionality also influences the hierarchy of importance and the significance of the processes of adaptation to environmental variations (in a broad sense). While in the non-human world the trait that succeeds in adapting best to change, considered as exogenous and unmodifiable, tends to survive, human intentionality may propose to alter the environment itself or to wait for processes of co-evolution between environment and society.

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<sup>29</sup> On these points, see Maxfield and Lane (1997).

The presence of intentionality poses serious problems in transferring the Darwinian processes of natural selection to social systems. More useful indications for reflecting on the processes of change and innovation in human societies have been developed by biologists and palaeontologists whom one might call “heterodox” Darwinists. They have underlined how Darwin himself saw natural selection as “the main but not the exclusive means of modification” (Darwin, 1859, p. 438). Gould and Lewontin comment ironically on the “panglossian” obstinacy of the “adaptationists”, who maintain that adaptation to the environment is the sole evolutionary process and that selection intervenes in the adaptation processes by acting as an optimizing factor. In order to explain forms, functions and behaviours, Gould and Lewontin (1979) have listed at least five ways in which evolution manifests alternatives to immediate adaptation. Among these alternatives we should note *exaptation*, in which the current function of an organ (but, we may add, also that of an artifact or an institution) has appeared at a moment subsequent to its origin. Gould (2002, p. 1214 et seq.) cites Nietzsche’s remark:

... there is for historiography of any kind no more important proposition than the one it took such effort to establish but which really *ought to be* established now: the cause of the origin of a thing and its eventual utility, its actual employment and place in a system of purposes, lie worlds apart.<sup>30</sup>

Nietzsche went on to say:

[...] purposes and utilities are only *signs* that a will to power has become master of something less powerful and imposed upon it a character of a function: and the entire history of a “thing”, an organ, a custom can in this way be a continuous sign-chain of ever new interpretations and adaptations whose causes do not then have to be related to one another but, on the contrary, in some cases succeed and alternate with one another in a purely chance fashion. The “evolution” of a thing, a custom, an organ is thus by no means its *progressus* toward a goal, even less a logical *progressus* by the shortest route and with the smallest expenditure of force- but a succession of more or less profound, more or less mutually independent processes of subduing, plus the resistances they encounter, the attempts at transformation for the purpose of defense and reaction, and the results of successful counteractions. The form is fluid, but the “meaning” is even more so.

The concept of *exaptation* appears highly important for study of the creation processes of new market systems, connected with the discovery of new functionalities of artifacts. The concept is also of importance in studying the changes in “meaning,” and hence in function, of the institutions that underpin the reproduction of the social system.<sup>31</sup> The innovations that accompany new functionalities act as a mechanism of change in the economy, creating, and simultaneously destroying, products and jobs.

Contrary to what has often been reiterated, the processes of change are not predominantly underpinned by increases in productivity – which, if at all, follow at a distance from those processes – nor by increased competition, which is actually

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<sup>30</sup> Cf. Nietzsche (1967), pp. 77–78. Considerations of this kind may have led to Wittgenstein’s scepticism concerning the explanatory power of (evolutionary) historical explanations (Wittgenstein, 1975, pp. 28, 30, 50 and the observations by J. Bouveresse, p. 75).

<sup>31</sup> On these structures, called “scaffolding structures,” see Lane (2002), p. 71.

attenuated, more or less stably, by the new functionalities. They rest on processes of *exaptation*, i.e. product innovations that lead to new sectors.

As Giuseppe Maione (2003, pp. 10 and 13) has effectively demonstrated, the theoretical perspective that credits productivity<sup>32</sup> as the driving mechanism of growth rests on a mistaken transposition to the economic system of a thesis that may (sometimes) be valid for an individual firm. If all firms were to reduce their unit costs and, let us suppose, their prices, there is no certainty that this would lead to a growth in the economy. Firstly, despite the fall in relative prices (with respect to competing countries), collective tastes might move in an opposite direction from that of the products supplied. Furthermore, while a simultaneous shrinkage of all costs translates into savings for firms, it also causes a contraction for the supply firms. Barring exceptional circumstances, this would lead to recession.

The principal defect of such a perspective is that it conceives genuine innovation, i.e. “the discovery of new products and processes [. . .] only as an auxiliary element of productivity” (Maione, 2003, p. 10). Historical experience shows instead that growth, when it occurs, is the result of product innovations (always going hand in hand with process innovations) and of the emergence and gradual ramification of activities indirectly linked with the “new” final production (“new” with respect to the system with which one is dealing). Underpinned by infrastructures and institutions, new sectors of production and marketing come into being, directly and indirectly connected with the innovating sector. In this perspective, the increase in productivity (which, by the way, in the case of product innovation escapes rigorous definition) is, if anything, an element that is auxiliary and subordinate to the innovation, not the other way round.

This, however, is not the – exclusively adaptational – conception put forward by evolutionism that emerges from the exponents of the neoclassical, Walrasian or Hayekian current. Both actually credit the exogenous variations in labor productivity with a driving role in economic growth. This reflects the exclusive importance ascribed to process innovations, and hence of *price* competitiveness as against the existing product – competitiveness viewed as the force that diffuses the sole form of innovation on which they effectively focus.<sup>33</sup> Yet Schumpeter (1992, p. 84, *my italics*) had remarked:

Economists are at long last emerging from the stage in which price competition was all they saw. As soon as quality competition and sales effort are admitted into the sacred precincts of theory, the price variable is ousted from its dominant position. However, it is still competition within a rigid pattern of invariant conditions, methods of production and

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<sup>32</sup> The concept is, anyway, hard to measure in a service society.

<sup>33</sup> In the neoclassical conception, based on the existence of an aggregate production function, the presence of full employment of labor rules out that increases in output can be obtained through increasing the number of those employed. Since innovations of product are not admitted, production may increase in the long term only through upward translations of the production function, which correspond to innovations of process. It is not of interest here to evidenciate the inconsistency between favoring an idea of competition as process – which will be dealt with in the next section – and, at the same time, arguing for an evolutionism in which adaptation takes on exclusive importance.

forms of industrial organization in particular, which practically monopolizes attention. But in capitalist reality – as distinguished from its textbook picture, it is not that kind of competition which counts but the competition from the new commodity, the new technology, the new source of supply, the new type of organization (the largest-scale unit of control, for instance) – competition which commands a decisive cost or quality advantage and which strikes not at the margins of the profits and the outputs of the existing firms but at their foundations and their very lives. This kind of competition is as much more effective than the other, as a bombardment is in comparison with forcing a door, and so much more important that it becomes a matter of comparative indifference whether competition in the ordinary sense functions more or less promptly; *the powerful lever that in the long run expands output and brings down prices is in any case made of other stuff.*

And here we run up against a paradox: economists of the neoclassical school (to whatever current they belong) tend, on the one hand, to attribute a crucial role to competition in stimulating the growth of the economy while, on the other, they confine their attention to a form of competition so unimportant that, according to Schumpeter, it “becomes a matter of comparative indifference” whether it operates more or less promptly.

Underlying this paradox is a fundamental aspect of neoclassical theory, namely the simultaneous determination of prices and amounts produced. At first glance, this appears to be a powerful tool of knowledge, but further reflection reveals it as a source of unrealistic hypotheses and insurmountable limitations in drawing conclusions. In order to compare the different roles ascribed by the theories to competition and growth, we must briefly review the main differences in the idea of competition as envisioned in the three main currents mentioned above. The origin of these differences can be retraced to the underlying theory of relative prices and income distribution.

#### 4.4 Three Conceptions of Competition

In the notion of competition in classical political economy, prices are “prices of production.” In fact, these are prices of reproduction, i.e. they are fixed in order to ensure the reproduction, year by year, of the process of production and sale of the goods. They are long-term prices, determined in a different way from short-term prices, called market prices, subject to different, less persistent influences. The adjustment of market prices to production prices may occur in a variety of ways: since the long-term positions are not here considered as *functions* of demand and supply, they do not arrive, as in neoclassical theory, along a single route, namely the annulment of excess demand and supply. Given the wage and the expected amounts of output, the prices must guarantee coverage of the normal costs expected and the achievement of the rate of profit; the latter, in a competitive regime (i.e., in this conception, a situation where firms are free to enter and exit from the market), may tend to equal the rate of interest on bonds without risk, plus a reward “for the risk and trouble” of the entrepreneur. That the levels of output are taken as given is important for two reasons. The first is that the formation of prices is held to be an aspect of income distribution, and not, at the same time, an aspect of the



determination of the quantities produced and hence of the growth of nations. The second is that it is acknowledged that the process of determination of the amounts produced is subject to circumstances so complex and changeable (belonging, we should now say, to such different levels of interaction and time and spatial scales) as to elude easy generalizations. In a letter to Malthus of 9th October 1820, Ricardo<sup>34</sup> writes:

Political Economy you think is an enquiry into the nature and causes of wealth. I think it should be called an enquiry into the laws which determine the division of the produce of industry amongst the classes who concur in its formation. No law can be laid down respecting quantity, but a tolerably correct one can be laid down respecting proportions. Every day I am more satisfied that the former enquiry is vain and delusive, and the latter only the true object of the science.

This theoretical and methodological formulation has three consequences. First, prices are not indicators of scarcity (scarcity is not the central point of the analysis, but in any case it is not identified by the relation between demand and supply functions). Secondly, equilibrium prices are linked to a particular rule of distribution of the surplus (for example, the rule, peculiar to a competitive regime, by which the rates of profit are equal in every productive sector), but not linked with any connotation of optimality, efficiency or full employment of resources. Thirdly, increasing returns and processes of circular causation are perfectly compatible with the conditions that ensure competition. The separation of the circumstances that determine the amounts produced (among which, for example, the level of aggregate demand) and those that determine prices (for given amounts produced) does away with the need to impose restrictive conditions (on technology, tastes, etc.) that find their justification only because they enable an equilibrium situation to be reached.

A quite different description of competition is provided by the Walrasian school. Here the concept of “perfect competition” is introduced, with atomistic firms, sufficiently small to be unable, by hypothesis, to affect the price (assumed as given for the individual firm, called *price taker*). By maximizing the profit subordinately to technology constraints, these firms demand labor services and sell products. The purchasers are consumers, likewise “atomistic,” who obtain income by selling labor services and maximize their utility subordinately to the budget constraint. The prices of the products and the so-called “production factors” and the quantities produced are determined simultaneously. Based on certain hypotheses (which are actually somewhat restrictive, with regard to the form of technology and the consumer preferences), it is demonstrated that there exists a set of relative prices and quantities exchanged that causes demands and supplies to be equal. These prices and quantities are said to be “equilibrium.” The prices are indicators of scarcity (they reflect the relative abundance, with respect to the demand, of the “factors” and products). At equilibrium, all the resources are employed fully, so that unemployment cannot exist. Then there are two theorems, the first and second theorem

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<sup>34</sup> Cf. Ricardo (1973), p. 278 and Keynes (1971), Chapter 2, note 2.

of welfare economics, stating that these competitive equilibria have the property of being “optimal” according to Pareto’s definition<sup>35</sup> and, conversely, that any optimal situation according to Pareto may accompany a competitive equilibrium, achieved by starting from some initial endowment of resources. In principle, this theorem could be used to reconcile competitive capitalism and egalitarianism: any desirable equilibrium situation could be reached by a suitable redistribution of the initial resources.

The possibility to mix competition (as described in the marginalist theory) and public intervention belongs within a current of “normative marginalism” that, right from the beginnings of this theory, goes hand in hand with the “marginalism of *laissez faire*.” For, starting from the research Walras developed in his mature works, in the neoclassical perspective of equilibrium, two “views” exist side by side: one descriptive, directed towards analyzing the actual working of markets, though abstracting from the frictions and the contingencies as suggested by the methodology of classical physics,<sup>36</sup> the other normative, based, in Walras’ case, on transferring principles rationally deduced from natural law to economics.

“From the outset,” according to B. Ingrao and G. Israel (1990, p. 98), “the interest shown by Walras in the theory of exchange value and even the formation of the idea of a general market equilibrium were motivated by the search for a rigorous demonstration of the superiority of free competition as a form of the organization of production and exchange. He identified free competition as an ideal of commutative justice or justice in exchange, in which he recognized a necessary but not sufficient condition for the fulfillment of distributive justice according to the principles deduced from natural law.”

The realization of justice in exchange was attributed not only to the condition of maximum utility of each party but also to the formation of a single price for the same good and to the elimination of losses and non-motivated profits, at the equilibrium price. From this point of view, free competition was for Walras “a normative ideal toward which the actual functioning of markets should be directed” (save for unavoidable instances of monopoly).

At the end of the 1930s, the current of “normative marginalism” re-emerged, as a result of two circumstances: the difficulty of the “descriptive” theory and the proposal, put forward by O. Lange, for a decentralized marginalist “market socialism”, as invoked, by both supporters and critics, by the experience of the USSR’s centralized planning after the 1929 crash.

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<sup>35</sup> The equilibrium configuration is “optimal” from Pareto’s point of view if, given the technology and tastes, there is no alternative equilibrium configuration that could improve anyone’s situation without worsening anyone else’s situation (where “improve” and “worsen” are defined in terms of the respective preferences).

<sup>36</sup> The close analogy between the equations of the exchange proposed by Walras to determine the equilibrium prices and the methods and results of classical mechanics has been most effectively evidenced by Ingrao and Israel (1990), who have also made a reconstruction of the two “views” mentioned in the text.

With regard to the first point, it should be recalled that throughout its development in history the theory of general economic equilibrium has constantly aimed to demonstrate three fundamental results: the existence of equilibrium (i.e. the compatibility among the actions of the maximizing economic actors in a competitive market), the uniqueness of the equilibrium (absence of other equilibrium states – an indispensable condition *inter alia* for performing analysis of comparative statics), and the global stability of the equilibrium (the market forces “inexorably” lead to the state of compatibility of the actions of the actors). Already in the 1930s it was perceived that the conditions necessary for a system of decentralized decisions (as described by the theory) to work are so stringent as to make it impossible in practice for them to exist.<sup>37</sup> Attention was focused on two problems in particular.

The first of these concerned the process by which equilibrium was approached, the *tâtonnement*: Walras adduced the figure of the auctioneer announcing the prices to refer to the really existing auction markets; at the same time, by excluding exchanges outside the equilibrium, he removed the obstacles by which such exchanges, with the associated variation in incomes and prices, would hinder the attainment of equilibrium. The process becomes analogous to an abstract mathematical algorithm which can be used, if need be, for normative purposes, but remains light-years away from a description of the effective movements of prices.

The second point concerned an implication arising out of the deterministic character of the theory (namely, the hypothesis that the current state of the economic system univocally determines its evolution in time). Poincaré, the great mathematician to whom Walras had submitted his writings, at once detected this with singular acuteness. Replying to Walras, he noted that, whereas in mechanics friction is disregarded and bodies are treated as infinitely smooth, “you consider people as infinitely selfish and infinitely far-sighted. The first hypothesis may perhaps be admitted in a first approximation, the second may call for some reservations” (Ingrao & Israel, 1990, p. 159). With polite irony, Poincaré put his finger on one of the shakiest points in Walras’ formulation, the hypothesis of perfect far-sightedness, or clairvoyance.

The binding character of this hypothesis<sup>38</sup> would clearly emerge in the theoretical research along Walrasian lines in the 1930s, to which Hayek, among others,

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<sup>37</sup> Subsequent researches (associated mainly with Arrow and Debreu) have found that a formal proof can be given only of the first result. The second has been obtained with very restrictive hypotheses, while the proof of the third, which is of decisive importance, has had a negative outcome. Failure on the last two points casts doubt on what seemed to be one of the strong points of the theory – namely, deriving a series of important results starting from very general hypotheses on the behaviour of the agents. The general logic of this choice is too “flimsy” in terms of structure to be able to impose economically significant restrictions and to avoid, in this way, “perverse” behaviour of the demand and supply functions (i.e. instability and multiplicity of the equilibria). The upshot is that “the endeavor to keep the theory at the highest level of generality, proved to be one of its weakest point” (Ibid., p. 316).

<sup>38</sup> The difficulties of the Walrasian theory stem from unsolved problems of capital theory. Since Walras chose to take as given the individual amounts of capital goods (and not their totality in

contributed. In 1935, Morgenstern, weighing up this research, observed “the prevalence in the literature of the belief that the theoretical perfection of equilibrium could not be achieved without the hypothesis of complete foresight on the part of agents” and concluded that the hypothesis “should be drastically eliminated from economic theory” (Ingrao & Israel, 1990, p. 195). He added: “a theory of equilibrium which ‘explains’ only a *static situation, which is given and unalterable* and which, because of this basic assumption, is completely unable to say anything about the economy when a variation occurs, is utterly unimportant from a scientific point of view. It would hardly deserve the names of theory and science.”

The difficulty in addressing an economic crisis with the measures suggested by the orthodox theory (cutting wages to enable competition to operate freely), on the one hand demanded a formulation other than that of general equilibrium (Keynes), while it led even those who remained faithful to the Walrasian formulation to take an interest in planning. For there was indeed another possibility, to interpret competitive equilibrium in normative rather than descriptive terms.

This path was taken in two famous articles of 1936 and 1937 by Oskar Lange. As Ingrao and Israel (1990, p. 253) remark, he must be seen as a “direct heir of the normative tradition” of Walras, though in a perspective oriented towards planning rather than natural law doctrine. Von Mises had argued that only in a regime of private ownership can prices figure as an efficient gauge of scarcity of resources. Lange retorted that a system with public ownership, too, could achieve the equilibrium situation by miming a decentralized market, i.e. by assigning both a price list and maximizing norms of behavior to the units of consumption and production.<sup>39</sup> Lange

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terms of value, which would have posed insoluble problems of circular argument in determining prices), this led to a short-term general equilibrium in which the rates of profit on the various capital goods were not uniform. In subsequent periods, the effect of competition, tending to uniformity of the rate of profit, would inevitably have induced changes in the composition of the capital stock, and hence in the prices of the goods and productive services. On this point see Garegnani (1976, pp. 25 et seq). This could happen either through an equilibrium on intertemporal base, founded on forward markets (for all future dates) of all the goods and services (as suggested by Hayek in the 1930s), or through the hypothesis of a succession of temporary equilibria with expectations of price realized, in steady state conditions, or of uniform development. The development of the Walrasian formulation led, therefore, to a new notion of equilibrium, temporary and not long-term, subjected to unrealistic hypotheses (the diffusion of forward markets, equivalent to perfect foresight) or so restrictive and contingent (temporary equilibrium with given expectations in steady state) as to call in doubt whether it could act as a guide to identify the basic forces that determine the real working of the economy.

<sup>39</sup> This gave birth in the USA to a current of “normative marginalism” which was to involve, with lavish funding (the Cowles Commission, working groups of the Rand Corporation), economists sensitive to the correction of the disequilibria present in the market economies (Arrow, Debreu and Koopmans among the economists engaged in researching the properties of equilibrium, Dorfman, Samuelson and Solow on the theme of including the input output analysis of Leontief within the theory of general economic equilibrium). Within this current of “normative marginalism” the neoclassical synthesis takes its place (synthesis of neoclassical theory and Keynesian theory, with possibility of short-term equilibria without full employment, but support in the long term for the neoclassical theory). Samuelson and Solow figure among the leading exponents of this synthesis.

substantially entrusted a centrally directed market with the task of implementing Walras' process of *tâtonnement*.

While Hayek in 1940 acknowledged that Lange had arrived at a socialist system with a competitive market, he asserted that "it is difficult to suppress the suspicion" that the formulation of a process of trial and error to gradually approach the appropriate solution "has been born out of an excessive preoccupation with the problems of the pure theory of stationary equilibrium. If in the real world we had to deal with approximately constant data, that is, if the problem were to find a price system which then could be left more or less unchanged for long periods, then the proposal under consideration would not be so entirely unreasonable. But this is far from being the situation in the real world, where constant change is the rule" (von Hayek, 1940, pp. 187–188). In attempting to show the superiority, in processes of adjustment, of the competition of the capitalist market as against the fictitious one of planning, Hayek adduced the demands of realism that appear important also outside the (highly abstract) debate on planning – demands that the theory of general equilibrium (along with its application to planning) had entirely disregarded in hypothesizing virtual and/or instantaneous adjustments.

The conception of competition adopted by the Austrian school (especially by Hayek) is opposed (within limits I shall indicate) to that of the Walrasian school, which it sees as a possible antechamber for public intervention in economics and "hence," it argues, for planning. It criticizes that theory for having concentrated on the conditions of static, at the expense of dynamic, equilibrium, i.e. the process by which equilibrium is reached. It underlines the limits of the definition of "perfect competition" – in particular, the hypothesis of perfect knowledge (of markets, technology, the future), the tendency of products and techniques to be homogeneous, the absence of change (in endowments, tastes and technology). In these respects, it recovers a perspective – that of competition "as a procedure of discovery of the new" – that may be likened, *at least at first sight*, to that of classical political economy (or at least to non-marginalist conceptions).<sup>40</sup> In many other respects, however – and these are the crucial ones – it retains unaltered the categories of marginalist economics, as though they could survive unharmed the criticisms previously made.

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<sup>40</sup> The idea that "competition is a discovery procedure" (Hayek, 1978) has precursors that Hayek himself would not have welcomed (See, for that matter, the reference to the essay by the sociologist L. von Wiese, published in 1929, and cited in von Hayek (1940, p. 179, note 1). Suffice it to recall, for example, the idea that competition generalizes the methods of production (Marx, 1962, p. 259), and the remarks on its "socializing force," to which Simmel (1908) devoted some enlightening pages. For an analysis of these passages see Bonifati (2003), to whom I am grateful for useful discussions on this point. Simmel (1908) writes, for example, that "it is the poisonous, dispersive and destructive effects of competition that are usually emphasized . . . But alongside these there exists an enormous associative effect: competition compels the aspirant who has beside him another aspirant, and who only in this way really becomes an aspirant, to approach and come to grips with the object of the competition, to connect with him, to learn about his weaknesses and strengths and to adjust to them, to look for or to try to construct bridges that might link his own being and his own performance to him." (my translation)

Up to 1937, the year when Hayek published an essay entitled *Economics and Knowledge*, he had “practically identified economic theory with equilibrium theory.”<sup>41</sup> This article marks a turning point, insofar as he distinguishes between an equilibrium at the individual level and an equilibrium for society as a whole. The first of these follows the postulates of the Pure Logic of Choice – therefore, at microeconomic level, of the maximization of the utility subjectively perceived by each agent. The equilibrium at society level, on the other hand, takes for granted the fact that knowledge is subjective (it cannot be known by any central planning mind), dispersed, imperfect, dominated to different extents by ignorance, error and inconsistency. Where the theorist of equilibrium assumes the existence of objective, certain, stable data that enable a configuration of equilibrium to be attained, here the assumptions needed for this to come about are lacking. And yet an equilibrium configuration is reached: hence, Hayek concludes, the market *in practice*, through the system of relative prices, brings about the transmission of information among individuals that, at the level of society, enables coordination of their individual plans. “Competition,” von Hayek (1948) concludes in another essay devoted to the *Meaning of Competition*, “is essentially a process of the formation of opinion: by spreading information, it creates that unity and coherence of the economic system which we presuppose when we think of it as a market.”

How can we trace the outcomes, at the societal level, of an exogenous change that arouses adaptation behavior in individuals? Here the theory of equilibrium is once again of service, not to trace the path, but to describe the goal. For von Hayek (1945) writes: “It is in this connection [of adjustment to changes] that what I have called “the economic calculus” (or the Pure Logic of Choice [that is the theory of the single decision maker] help us, *at least by analogy* to see how this problem can be solved, and in fact is being solved, by the price system”.<sup>42</sup> The proof of the informative value of the system of prices – understood as a device for transmitting information – therefore relies “by analogy” on the microeconomic theory of equilibrium, while the scheme that should demonstrate how equilibrium is reached at the level of the economic system is criticized for its want of realism.

At the outset of the 1940s, then, Hayek finds himself facing this dilemma: as long as one insists on the concept of general economic equilibrium, one cannot avoid dealing with a normative interpretation of the scheme of general equilibrium that envisages the possibility of using it for planning purposes. As against that, the criticisms of the Walrasian process of *tâtonnement* can be used to criticize the lack

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<sup>41</sup> Cf. Caldwell (1988), p. 529 and von Hayek (1940), pp. 33–56.

<sup>42</sup> Italics added. He goes on to say: “Even the single controlling mind, in possession of all the data for some small, self-contained economic system, would not- every time some small adjustment in the allocation of resources had to be made – go explicitly through all the relations between ends and means which might possibly be affected. It is indeed the great contribution of the Pure Logic of Choice that it has demonstrated conclusively that even such a single mind could solve this kind of problem only by constructing and constantly using rates of equivalence (or ‘values’ or ‘marginal rates of substitution’), that is by attaching to each kind of scarce resource a numerical index which cannot be derived from any property possessed by that particular thing, but which reflects, or in which it is condensed, its significance in view of the whole means-ends structure.”

of realism in the real adjustment processes, but they by no means ensure (unless by “analogy” with the theory of the individual agent) that competition will attain a position in some sense of equilibrium and “optimal” (at least in comparison with alternative systems).

To solve this dilemma, and to contrast the threat of “normative marginalism,” Hayek’s thought (apparently) changes tack: it upholds evolutionism and replaces the concept (or term?) of “general equilibrium” with that of “spontaneous social order”. The competitive process is likened to that of natural selection. The latter works as a process of adjustment to equilibrium, fulfilling the role previously, and unsuccessfully, ascribed to the Walrasian *tâtonnement*.

Several objections can of course be made to Hayek’s way out of the impasse. In the first place, it assumes what should be proved, namely the effectiveness of the markets in coordinating decisions, an effectiveness open to grave doubts owing to widespread situations of crisis and unemployment. Moreover, one may doubt that prices really are indicators of scarcity and the sole, most satisfactory vehicles for transmission of information:<sup>43</sup> suffice it to think of all the relations within and among firms channelled through formal and informal agreements, written and unwritten customs, contracts, licences, exchanges based on trust, etc. As Richardson (1972) has argued, the formation of networks among firms where coordination takes place through agreements and not through impersonal relations of price, is particularly widespread when activities are complementary and dissimilar, and when the problem of quality control of the products exchanged is especially important – aspects, these, by no means uncommon in the economic system. Furthermore, the diffusion of these agreements is also fuelled by a circumstance – the uncertainty of the level of aggregate demand, which in Hayek, given the presumed equilibrating efficacy of prices, is entirely lacking. Lastly, and most importantly, we may wonder to which evolutionary mechanism Hayek refers.

In the next section we shall see that in order to understand his position it is necessary to adduce three components of his thought, that can be traced respectively to Menger (organicist individualism), Mach (physicalism) and Spencer (non-Darwinian organicist evolutionism). Though these cultural references may help to explain Hayek, they can hardly provide useful indications for dealing with the theme posited by him. An important problem, for that matter, is how the coordination (or lack of coordination) of decisions works in a world in which the knowledge necessary for individuals to be able to act – but also to construct a balanced set-up at the level of the economic system – “never exists in concentrated or integrated form but solely as the dispersed bits of incomplete and frequently contradictory knowledge which all the separate individuals possess” (von Hayek, 1945, p. 77, italics added).

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<sup>43</sup> Rosenberg (1976, p. 110) has argued that economic incentives (e.g. the prospect of profit) are a variable “so universal” as to have a very limited power to explain “the particular sequence and timing of innovative activity”. He has therefore evidenced a series of “induction mechanisms” and “focusing devices,” other than price, that underpin possible sequences of technological change.



## 4.5 The Liberalism of Hayek

Some much-debated questions arise from the curious mixture of contributions that converge in Hayek's conceptions: the falsifiability of theoretical propositions (including those of Hayek himself), the nature of what Forsyth has called Hayek's "bizarre" liberalism, and the possible inconsistency with his professed support for methodological individualism. Here I shall confine myself to some brief schematic hints on the cultural ancestries of these.

Take, for example, the distinction (Donzelli, 1988, pp. 39–40). Hayek proposed between "explanation of detail" and "explanation of principle;" this harks back to Carl Menger and his own particular Aristotelianism,<sup>44</sup> which was to influence the entire Austrian school of economists. The first of these terms refers to explanations of events about which it is possible to formulate general laws and particular propositions that describe the particular conditions upon which the occurrence of the event studied depends. The second refers to explanations of events "so complex," in the sense of involving a configuration of elementary events connected by such a "complex and inextricable texture" and such a large number of relations and variables that an "explanation of detail" is impossible. In this case, it is the theoretician's job to enunciate the general laws that govern the phenomenon of study. These laws enable one to predict certain qualitative characteristics of the "order of the events" (as in the case of the "spontaneous order" mentioned above), but do not allow the occurrence of particular events to be predicted.

In 1944, Hayek interpreted the equilibrium of an economic system, which Walras had dealt with, as an instance of argument susceptible exclusively of "explanation of principle," in which the complexity of the events studied would hinder (and make nonsense of) attempts at "explanation of detail." It becomes plain that the distinction conduces to discourage any normative proposal (even the collection of data for this purpose<sup>45</sup>) for focusing attention on the qualitative outcomes of general laws.

The attention paid to these general laws – by which Hayek seems to dodge empirical verification of his propositions – has its origin in Menger's Aristotelianism; Menger holds that in reality there are entities that are "strictly universal" ("*essences*") (Smith, 1990, p. 266). These are discovered through the theoretical effort of the economist, whose task it is also to identify the general connection (the "exact laws") among the entities that make up the economic phenomena. On the one hand, the intelligibility of the basic structures of which the reality consists

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<sup>44</sup> According to Smith (1986, p. 9 and 1990, p. 263), the source of Menger's Aristotelianism can be traced back to the school programs of Habsburg Austria, which imposed rigid, uniform textbooks based on simplified versions of the philosophy of Aristotle and the Scholastics, with the aim of insulating Austria from harmful liberal and cosmopolitan influences coming from abroad. Smith adds that this Aristotelianism has been shorn of any reference to the distinction between "act" and "power" (upon which, as we know, Aristotle based his analysis of change). For a discussion of the connections between these components of Aristotle's thought and Sen's theory of capabilities, to which we shall allude later, see Nussbaum (1988).

<sup>45</sup> Cf. for example the polemic against Leontief (von Hayek, 1978, pp. 242 et seq.).

(e.g. exchange, barter, rent, profit, ownership<sup>46</sup>) depends on the fact that they are “universal,” i.e. they manifest in every society. On the other hand, the possibility to understand them stems from the fact that the observer is himself an individual. This enables him, through introspection, to “put himself in the shoes” of the individuals whose processes of thought and action he studies (Smith, 1990, p. 278). In trying to establish the way the different blocks of the economic reality are connected with one another to form structured social organisms (thus rejecting an atomistic view based on individual independent entities), the economist also tries, by a method called “genetico-compositive”) to identify their origin and modalities of growth and transformation.

In Menger’s view, there is an analogy between nature, the function and origin of natural organisms and that of social organisms. “Natural organisms almost without exception exhibit, when closely observed, a really admirable functionality of all parts with respect to the whole, a functionality which is not however the result of human *calculation*, but of a *natural* process. Similarly, we can observe in numerous social institutions a strikingly apparent functionality with respect to the whole. But with closer consideration, they still do not prove to be the result of an intention aimed at this purpose, i.e. the result of an agreement of members of society or of positive legislation. They, too, present themselves to us rather as ‘natural’ products (in a certain sense), as *unintended results of historical development*” (Menger, 1883, p. 130). Ontological and methodological individualism here meld, since social organisms are explained starting from the preferences, needs and aims of individuals.

Hayek would lean heavily on these themes after his thought took an evolutionist direction in the early 1940s,<sup>47</sup> but he associated them with Ferguson, rather than with Menger and his methodology.<sup>48</sup> His reconstruction of the social thought of the

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<sup>46</sup> “Human economy and ownership,” wrote Menger (1871, my translation) “have a common economic origin, because both find their ultimate *raison d’être* in the fact that there are goods whose available quantity is lesser than what is needed, and therefore ownership, like economy, is not an arbitrary invention but, rather, the sole possible practical solution of that problem posed by the nature of things for all goods – namely, the disproportion between the amount of goods needed and the amount available.”

<sup>47</sup> However, the writings in which the evolutionist perspective is most clearly in evidence belong to the subsequent years. See the essays published in the 1960s (F.A. von Hayek, *Studies in Philosophy, Politics and Economics*, London, Routledge, 1976) and, above all, *Law, Legislation and Liberty*, cit., Vol. I (pp. 23–24 and 152–153) and Vol. III (pp. 154–159 and 199–202). See also *The Fatal Conceit. The errors of Socialism*, London, Routledge, 1988, Chapter 1.

<sup>48</sup> von Hayek (1978, p. 101) credits Menger of having “resuscitated” this idea “in a form which now [...] seems to have become widely accepted.” Hayek adds: “The point [...] which was not fully understood until at last Carl Menger explained it clearly, was that the problem of the origin or formation and that of the manner of functioning of social institutions was essentially the same: the institutions did develop in a particular way because the co-ordination of the actions of the parts which they secured proved more effective than the alternative institutions which they had competed and which they have displaced. The theory of evolution of traditions and habits which made the formation of spontaneous orders possible stands therefore in a loose relation to the theory of evolution of the particular kinds of spontaneous orders which we call organisms, and has in fact provided the essential concepts on which the latter was built.”

three previous centuries along an individualism/constructivism<sup>49</sup> dichotomy aims in fact to confront the functionality deriving from the absence of intentionality of social organisms with the abuses arising from the propensity of reason to design these same organisms. The central focus is on the equivalence of a competitive process with outcomes implying order and functionality and a process of natural selection. Selection (competition) occurs at all levels, involving natural, cultural and social phenomena with a unique mechanism (that does not exclude forms of group selection). Cultural evolution is seen as analogous, in some respects, to that of biology, though different in other respects. The analogy has to do, firstly, with the principle of selection (i.e. that of survival or reproductive advantage) (von Hayek, 1991, pp. 25–26). In both contexts (biological and cultural), “we have essentially”, he asserts, “the same kind of process, based on variation, adaptation and competition, however different are their particular mechanisms, especially those concerned with propagation. All evolution is based on competition: not only that, a continuous competition is necessary also to preserve the attained results.”

Cultural and biological evolution also share the fact that they are processes of “continuous adaptation to unforeseeable events” over which no control can be exerted. This is why, says Hayek, in the evolution of human societies cooperation can find no significant place: “cooperation, like solidarity, presupposes a large measure of agreement on ends as well as on means employed in their pursuit. It makes sense in a small group whose members share particular habits, knowledge and beliefs about possibilities. It makes hardly any sense when the problem is to adapt to unknown circumstances.” Hayek sees the solution to this problem in competition, seen as “a discovery procedure.” And “through further competition, not through agreement, we gradually increase our efficiency” (von Hayek, 1991, p. 19). Society is therefore “held together” not by assumed common goals, but only by the rules, the customs stemming from the evolutionary process.

The differences between the two forms of evolution have to do with the presence, in cultural evolution, of the hereditariness – through *inter alia* imitative learning – of acquired characteristics, the reception of traits not only from the family circle but from an indefinite number of “ancestors”, and the much faster transmission of cultural traits. These considerations (especially the last) lead Hayek to distance himself from sociobiology, an extreme form of “social Darwinism” based on genetic determinism. This distancing, however, concerns the refusal to view the gene as the unit on which selection is exerted, not the elements contained in the “economic” definition of social Darwinism given by Hofstadter.

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<sup>49</sup> In the early 1940s, Hayek had sought to identify a dichotomy in the history of thought, between “individualism” of English type (in reality largely Scottish) and “scientism” or “rationalist constructivism” of French type, which he retraces to Descartes. This latter position he viewed as asserting the superiority of the “deliberate design and planning on spontaneous forces of society.” Quoting Ferguson, Hayek argues that institutions (e.g. the market, language, money) are “the results of human action but not of human design” (von Hayek, 1978, p. 96). Hayek’s view, constrained by his dichotomic classification, excludes in advance that the results of human action may also bear an imprint of human designs.

It is indeed the stress on cultural evolution that provides Hayek with the opportunity silently to replace a Darwinian process of evolution based on the *variation* of the composition of a population's characteristics, starting from the sequence variation-selection-transmission – and hence a phylogenetic process, with a quite different evolutionary process, of ontogenetic and essentialist type, that entails development of an organism starting from a set of given and immutable characteristics.

I think we shall not be far off the mark if we set Hayek within a tradition of anti-enlightenment thought that leads from Burke to Carl Menger, passing through the historical school of law of Savigny:<sup>50</sup> slow accumulation of traditions, wisdom embodied in the institutions, basic optimism about the way the “spontaneous forces” work, and a need to avoid all interference with the free play of these forces.

Here we have a kind of evolutionism that, as has been remarked,<sup>51</sup> seems to hark back rather to pre-Darwinian or Spencerian conceptions than to those of Darwin himself. This is shown by retracing an intellectual ancestry which, along with Mandeville, features authors like Herder, Humboldt and Savigny, whose ideas are a long way from Darwin's, yet who, according to Hayek, “made the idea of evolution a commonplace in the social sciences of the nineteenth century long before Darwin” (von Hayek, 1978, p. 265, cited in Hodgson, 1993, p. 159). Darwin's discovery is not only minimized, it is quite misunderstood when Hayek writes that “Darwin's painstaking efforts to illustrate how the process of evolution operated in living organisms convinced the scientific community of what had long been a commonplace in the humanities” (Hayek, 1991, p. 23, cited in Hodgson, 1993, p. 160). The misunderstanding becomes glaringly obvious with the absence of a crucial aspect of the Darwinian process, the analysis of the circumstances that give rise to the variations upon which selection exerts itself.

One might say that this lacuna reveals (to use Isaiah Berlin's (1969) well-known formula) the form of liberalism to which Hayek belongs: it invokes freedom “from” (state authority, restrictions on free enterprise, etc.) instead of freedom “to” (act creatively, innovate, etc.). But we can pin down Hayek's “bizarre”<sup>52</sup> liberalism more precisely if we explore the influence on him of Mach (an influence responsible for perhaps the most original elements of Hayek's thought, according to Forsyth, 1988).

Forsyth has highlighted the importance, in this connection, of *The Sensory Order*, published by von Hayek (1952), but based on his studies and writings of 1919–1920. In agreement with Mach (ignoring a few differences), Hayek favors monism, the

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<sup>50</sup> Hayek, for example, quotes with approval a passage by Sir Frederick Pollock, which reads: “The doctrine of evolution is nothing else than the historical method applied to the facts of nature, the historical method is nothing else than the doctrine of evolution applied to human societies and institutions. . . . Savigny, whom we do not yet know or honour enough, or our own Burke, whom we know and honour, but cannot honour enough, were Darwinians before Darwin” (von Hayek, 1982, p. 153). See also Menger (1883), pp. 172 et seq. Note also Menger's stated approval of Spencer, *ibid.*, p. 150, note 55 and p. 198, note 132.

<sup>51</sup> Cf. Hodgson (1993), p. 160 and, for certain aspects of the relations between Hayek, Spencer and Sumner, see Paul (1988).

<sup>52</sup> See especially the essay *Rules, Perceptions and Intelligibility* (of 1963), now in von Hayek (1978).

idea that “the universe consists of a continuum of physical events, which is *in principle* explicable by one and the same scientific method” (Forsyth, 1988, p. 240). If *in practice* we distinguish between “physical” and “mental” phenomena, that stems only from the limits of our ability to understand their fundamental unity. Hayek claims that all “higher” mental activities, writes Forsyth, “are merely a repetition, at succeeding levels, of processes that already take part at the lowest levels. There is again a continuum, a unity. Consciousness does not mark a significant break, and human thinking of an advanced conceptual nature is only a more complex variety for animal behaviour.” Mental activity, animal and human, conscious and unconscious, can be reduced to a physical mechanism “wholly absorbed in adapting to its environment in order to survive” (Forsyth, 1988, p. 243).

Here we face a paradox that very frequently crops up in the ideas of the exponents of methodological individualism: it is claimed that all social phenomena can be accounted for by taking the individual as the starting point, but the individual is taken as given – an abstract subject, with given interests, desires, abilities – or as having extremely limited possibilities of development. To escape from the risk of abuse of reason, individuals are depicted as almost devoid of reason.<sup>53</sup>

Despite some marginal differences, there is a close parallel between the evolution of animal organisms and that of the Great Open Society (or free society) as outlined by Hayek in *The Constitution of Liberty* and in subsequent works: animals and members of the Great Society alike are involved in a process of evolutionary adaptation to survive: “in the last resort, it is the relevance of [the] . . . individual wishes to the perpetuation of the group or the species that will determine whether they will persist or change” (von Hayek, 1960, quoted in Forsyth, 1988, p. 248). On the one hand, the Great Society represents the natural, spontaneous process by which human beings adapt to their environment. On the other hand, its working *requires* obedience (not necessarily spontaneous, it appears) to abstract, universal, impersonal rules,<sup>54</sup> devoid of substantive content (as might be the rules that safeguard competition in the markets). This is a “purely formal liberalism”, Forsyth concludes, “a combination of normless factualism” (the evolutionism of the entire living world) “and factless normativism” (the abstract rules).

The restricted substantial significance that can be associated with the attainment of the simple survival criterion has recently led Sen to criticize the idea of “progress” linked with Darwinian evolutionism, based on the “quality of the species” (i.e. on characteristics that have survived because selected and handed down). By way of alternative, he proposes to resume a “somewhat Aristotelian” perspective (Sen, 2002),<sup>55</sup> that defines “progress” in terms of “quality of life” – in terms, that is,

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<sup>53</sup> Cf. von Hayek (1991), pp. 21–22. See more in general, on the limits of individuals, as these emerge from the representations of the theorists of methodological individualism Lukes (1973), p. 153.

<sup>54</sup> Hayek equates the adherence to the abstract rules of the Great Society with the response of animals to stimuli according to conditioned reflexes. See von Hayek (1973), pp. 74 et seq.

<sup>55</sup> Sen here alludes to his theory of capabilities. He defines the quality of life in terms of capability to choose and to achieve modalities of doing and being to which he attributes a value (these

of what we *can* do or be. Adopting this point of view, it is by no means obvious that the conditions that facilitate survival and reproduction, in a given context, contribute to making lives more pleasant and more satisfying: “we recognize many virtues and achievements that do not help survival but that we have reason to value; and on the other side, there are many correlates of successful survival that we find deeply objectionable” (Sen, 2002, p. 494).

Not dissimilarly, during another time of globalization, William James wrote: “The entire modern deification of survival *per se*, survival returning to itself, survival naked and abstract, with the denial of any substantive excellence in what survives, except the capacity for more survival still, is surely the strangest intellectual stopping-place ever proposed by one man to another” (James, 1987, p. 359).

#### 4.6 Alchian: Evolutionism as Connecting Link Between Two Laissez Faire Strategies

Both Friedman and Hayek are important exponents of monetarism. This doctrine argues from the markets’ capacity for self-regulation to conclude that the sole source of instability is the wayward variation of the level of prices. This variation is ascribed to a single cause, the “abnormal” change in the money supply. It belongs, however, within two different “rhetorical strategies” used to argue for *laissez faire* (Denis, 2004). At the level of method, Friedman takes a position summed up as “positive” or “instrumentalist” (or “as if”) economics, which at first sight looks a long way from Hayek’s “apriorism.”

According to Friedman, theories are not attempts to describe reality, but tools that enable forecasts to be made. The validity of a theory is not measured, therefore, by the realism of its assumptions but by its predictive capacity: if a theory works – that is, it generates “sufficiently accurate predictions” – the “constructed hypothesis is presumably valid” (Friedman, 1953, p. 20). Friedman, as was said, stands in the Walrasian neoclassical stream. In this “antinormative” perspective, the State is not expected to supply positive contributions to production and society, but effects only distortions or interferences in a mechanism capable of perfect self-regulation; it is therefore possible immediately to draw *general* conclusions (conclusions independent, i.e., of a specific analysis of the situation under consideration) about the advantage of a reduced presence of the State.

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modalities are called functionings). This theory differs from utilitarian analyses, which attribute a value to goods or actions on the basis of the utility they procure; and from conceptions that do not attribute a value to liberty of choice. For how this theory relates to Aristotle’s thought (cf. in particular *Nicomachean Ethics*, Book I, §7, and *Politics*, Book III) see Nussbaum (1988), p. 153 and Sen (1993), pp. 46–47. The same authors have evidenced links between the perspective of capabilities and conceptions of Adam Smith (*The Wealth of Nations*) and Marx (*Economic-Philosophical Manuscripts of 1844*). Concerning Smith, see Sen (1993), p. 46; and on Marx, see Nussbaum (1988), pp. 103–104 and Sen (1993), p. 46 and the bibliography therein.



It may be wondered, however, in what way Friedman manages to avoid dangerous “normative” uses of the Walrasian scheme. He does so in two ways. The first concerns the refusal to specify in detail the mechanism of transmission of the money supply to the economic system and, in particular, how, in the short term a determinate variation in the nominal income – induced by a variation in the money supply – is subdivided between variations in the quantities of output and the price level.

This indeterminacy in the monetarist theory – that has led some critics<sup>56</sup> to speak of “black box theory” – is justified by adducing the methodological stance adopted. Given the complexity of the economic system and the ignorance regarding the multiplicity of individual behaviors, it entails that only simple and general propositions undergo the prediction test, abstracting from the details. There is an analogy with the “explanation of principle” of Menger and Hayek, but in this case the falsifiability of the propositions is jeopardized by the high level of aggregation, which does not enable one to substantiate possible inversions of the causal nexus between the variables (for example, from nominal income to money supply, and not *vice versa*), or between reciprocal interactions.

The second way entails introducing a very specific hypothesis on a non-observable variable, the expectations of inflation of the economic actors. Consistently with the Walrasian scheme, it is assumed that unemployment is exclusively voluntary, depending on the workers’ preferences for free time. Should the government authorities intend to apply an expansionary monetary policy, they could obtain an increase in the amount of labor available on the market by deceit. For, suppose that the increase in the money supply is followed by an increase in the amount of labor demanded by firms, at a higher nominal wage. Suppose, further, that the workers project past expectations of (low or nil) inflation into the future: the workers (unaware of what awaits them) offer more labor since they think that the increased money wage will also translate into an increase in the real wage. But this is an illusion: prices will soon begin to soar and the expansionary monetary policy will have to be promptly abandoned.<sup>57</sup> In conclusion, Friedman finds the Keynesian policy of reduction in (involuntary) unemployment as, in the words of Parboni (1984, p. 202), “a watered-down version of authoritarian socialism” which forcibly (and not by deceit, as here) compels people to work in poorly productive jobs.

The same conclusions are reached by Hayek, though by a different and more tortuous route. Hayek’s “individualistic organicism” leads him to argue that the social economic system has behaviors and dynamics that do not reflect the intentions and actions of the single individuals. *However*, as we saw in the previous section, we can be confident that the overall outcome of the actions of the individuals will at least be satisfactory (perhaps even optimal). It may be of interest here to clarify the role played by evolutionism in the conceptions of the two exponents of monetarism.

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<sup>56</sup> P. Samuelson (1970), p. 43 has written: “My most serious objection to . . . monetarism is that it is a black box theory”. On this topic see Parboni (1984), p. 153 and note 4.

<sup>57</sup> In order to avoid waves of instability of price levels caused by the monetary policy, Friedman has proposed a policy of constant expansion of the money stock. Hayek, on the contrary, suggested that the same objective might be achieved by privatizing the production of money.



With reference to an influential article by Alchian (1950) based on the analogy between the natural selection process and the selection process actuated by competition (which would be taken up by Friedman in 1953), Foster (1997, p. 9) writes that “it would be no exaggeration to affirm that the importance of neoclassical theory for real economic policies was justified by the implicit conviction that neo-Darwinian competitive forces are continually in action from the supply side of the economy.”

Alchian’s article is interesting also because it implies a connecting link between the two rhetorical strategies we are dealing with. It intervenes in a discussion in which certain authors (Hall & Hitch, 1939; Lester, 1946), based on questionnaires given to entrepreneurs, called into question the hypothesis that firms maximize profit, instead of following empirical criteria such as the “full cost principle” (a fixed mark-up on the unit costs). Alchian allows that in presence of uncertainty one cannot take the maximization of profit as a guide to the action of a particular firm. If uncertainty prevails, the expected outcome of any action by a firm can only be viewed as a distribution of possible outcomes, and it makes no sense to say that the firm maximizes anything, since it is impossible to maximize a distribution. He holds, however, that the introduction of the criterion of survival enables one to conclude that the maximization of profit is a valid generalization of the behaviors of firms (even though this conclusion concerns the overall firms in an industry,<sup>58</sup> and not the individual firm).

Faced with a change in the environment, conditions being equal, the firms that are lucky enough to use the optimal *routine* (that is, those adopting the criterion of maximization of profit) will survive, whereas the firms that adopt sub-optimal criteria will be eliminated. What counts for survival is the result (the profit realized *ex post*), not the motivation that the firms had *ex ante*). Hence, industry as a whole moves towards an optimal configuration, not because it *adapts* by changing its behavior versus external shocks, but because the market (the competition) *adopts* (selects) the firms that have by chance followed an optimal *routine* and leaves those that have not done so to perish. The achievement of profit is the result, not of human design (the conscious decision by the individual firm), but of human action (the evolutionary process that performs, in an impersonal way, a selection at the level of the system). It must be emphasized that the evolutionary process selects not only the agents who by chance follow optimal strategies but, in the long term, also the behavioral norms that enable these strategies to be achieved. The pictured traced by Alchian closely recalls Hayek’s interpretation of Ferguson.

It is of interest to note that, in an essay in which he enunciates the “as if” methodology, Friedman on the one hand declares himself in agreement with Alchian’s analysis, while on the other he argues that the hypothesis of the maximization of profit is justified by the fact that, if entrepreneurs did not adopt it, they would soon lose resources or would fail. This argument concerns the expected profits, not the *ex post* ones, and, as against Friedman’s professed support for Alchian’s analysis, seems

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<sup>58</sup> Here, too, the “explanation of the principle” replaces that of the detail, with all its “dangerous” analytic and normative implications.

to accept the very thesis that Alchian had rejected.<sup>59</sup> But Friedman (1953, *italico added*) goes on to say (somewhat ambiguously): “The process of ‘natural selection’ thus helps to validate the hypothesis – or, rather, given natural selection, acceptance of the hypothesis [of maximum profits] can be based largely on the judgment that it summarizes appropriately the conditions for survival.” Friedman’s contradiction is, however, only apparent: in the scheme adopted, which does not envisage conditions of uncertainty, the criterion of maximization of expected profit and the conditions of *ex post* survival following the “optimizing” process of selection exerted by perfect competition coincide with one another, so that the choice between the two is irrelevant.

As Edith Penrose remarked in an acute comment on Alchian’s article – a comment of more general relevance than the occasion that engendered it – those who employ the biological metaphor in dealing with economic topics have a common characteristic: that of suggesting “explanations of events that do not depend upon the conscious decisions of human beings” (Penrose, 1952). This appears all the more singular as certain branches of biology do in fact deal with processes of learning and decision making, and with “purposive motivation and conscious choice”. The analogies that invoke biology in treating of aspects of economics that do not bear on human motivations and decisions tend to relegate into the background the fact that firms are created by people and serve the purposes of human beings. Penrose (1952, p. 809) writes:

... to abandon [the] development [of the firms] to the laws of nature diverts attention from the importance of human decisions and motives, and from problems of ethics and public policy, and surrounds the whole question of the growth of firms of an aura of ‘naturalness’ and even inevitability.

When these decisions and motivations have been included, any analysis of the effects of a change in environment must take account of the fact that firms will seek “as much consciously to adapt the environment to their own purposes as to adapt themselves to the environment. After all, one of the chief characteristics of man that distinguishes him from other creatures is the remarkable range of his ability to alter his environment, or to become independent of it.” While certain aspects of the environment (an imprecise notion in Alchian’s analysis) appear hard to modify, there are some that are “important for survival which we cannot assume are beyond the

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<sup>59</sup> In this connection, see the critical remarks by Kay (1995). But in a note, Friedman (1953), in the essay quoted, argued that, given uncertainty, the choice among “alternative anticipated probability of receipts or income” depend “on the criteria by which they are supposed to be ranked.” Friedman suggest to “rank probability distributions by the mathematical expectation of the money receipts corresponding to them,” adding, though, that the “methodological issues” involved here were “largely by-passed” in his discussion. In this way, uncertainty actually disappears, since past and future are perfectly fungible and to every possible outcome is associated to a well-defined utility: Alchian’s scheme is returned to the haven of orthodoxy, and the maximization of profit is tacitly reintroduced as the *ex ante* condition for survival. For Alchian, instead, in conditions of uncertainty, the sufficient condition for survival was the *ex post* presence of positive (not necessarily maximum) profits. Eventually, among those attaining *ex post* positive profits, competition would select the “luckiest” (i.e. maximizers) firms.

influence of firms and which can be unpredictably altered by them” – for example, the state of technology and consumer preferences. The requirements for survival, i.e. the profits “attained,” were stated by Alchian on the basis of the condition of *coeteris paribus* (Penrose, 1953, p. 608), but they would be very different if one granted the possibility of action by the firms consciously aimed at altering the conditions of the environment in which they operate.

## 4.7 The Black Box

In both the exponents of monetarism, evolutionism entails ascribing characteristics of optimality and/or efficiency to the outcome of the competitive processes. In Hayek’s scheme as in Friedman’s one there is a mechanism that is impenetrable to analysis, a “black box.” In the past, Providence ensured the optimality of the social order that conformed to natural law.<sup>60</sup> Today, the “black box,” by analogy with natural selection (not Darwin’s, in actual fact, but Spencer’s), is competition.

The rhetoric of biological metaphor in economics employed in the first great expansion of the global market in the second half of the 19th century and the one employed in the second phase subsequent to 1980 display many similarities. The uncertainty of boundaries seems to lead not only to a loss of identity but also to the assertion of ideologies at once deterministic and consolatory, not to say – at the level of system – optimistic. In their overbearing simplicity, they invite one to *adapt* to an “environmental” situation viewed as exogenous, in which any intervention, any interference with the process of selection, would be *a priori* counterproductive. As devices to contrast any attempts consciously to alter the *status quo*, they may generally be associated with conservative thought. Quite absent, however (though not entirely so in the case of Hayek, who strives to reconnect with Burke), are other characteristic components of conservative thought, and this fact introduces an element of potential dissonance and instability. As Hofstadter has remarked with reference to the social Darwinism of the second half of the 19th century, we have here “a body of belief whose chief conclusion was that the positive functions of the state should be kept to the barest minimum, it was almost anarchical, and it was devoid of that center of reverence and authority which the state provides in many conservative systems” (Hofstadter, 1955, p. 7). In substance, a “conservatism without religion.” It appears to be terribly difficult to accept that we are part of a social process without direction, without meaning. But once launched on the road of teleology, in its multiple guises, Providence comes to fill up the empty space – and is just round the corner.

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<sup>60</sup> As against the “secularized” interpretation now prevailing, components of natural theology, in Smith’s *Wealth of Nations*, are complementary, not in contrast with the conception of the social order based on the “invisible hand.” See Viner (1972), pp. 81 et seq. and Hill (2001) and the ensuing discussion in the same journal.

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