

## METHODOLOGICAL INDIVIDUALISM AND CULTURAL EVOLUTION: ONTOGENETIC AND PHYLOGENETIC APPROACHES TO SOCIAL ORDER

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*ABSTRACT:* This paper is about the alleged tension between methodological individualism and evolutionary ideas in the work of Friedrich Hayek. This issue is much debated, but I focus my attention on a quite original incompatibility argument by Geoffrey Hodgson. Hodgson sympathizes with the evolutionary Hayek, arguing that Hayek's methodological individualism involves an "ontogenetic" approach to social science, while his evolutionary thinking suggests a "phylogenetic" approach. "Ontogeny" refers to the development not only of organisms but also of social systems on the basis of fixed developmental rules, while "phylogeny" refers to the evolution of such entities through selection

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upon variation. Hodgson believes that there is a “fatal conflict” in Hayek’s work between his “ontogenetic” methodological individualism and his evolutionary approach to culture. In this paper, I agree with Hodgson that methodological individualism can be seen as an ontogenetic approach to social science, but I give several arguments to show that ontogenetic and phylogenetic approaches are complementary rather than incompatible. I show exactly how economics and evolution (can) relate to each other and apply these ideas to Hayek’s work.

**KEYWORDS:** methodological individualism; spontaneous order; cultural evolution; Friedrich Hayek; Geoffrey Hodgson

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**I**n the early forties, the Austrian economist Friedrich Hayek wrote that, in the social sciences,

it is the concepts and views held by individuals which are directly known to us and which form the elements from which we must build up, as it were, the more complex phenomena... it is the attitudes of individuals which are the familiar elements and by the combination of which we try to reproduce the complex phenomena, the results of individual actions, which are much less known—a procedure which often leads to the *discovery* of principles of structural coherence of the complex phenomena which had not (and perhaps could not) be established by direct observation (Hayek, 1942, pp. 286-287; see also 1948, p. 6).

Hayek refers to this proper method of the social sciences as the “compositive method” or “methodological individualism.” Methodological individualism is then in short the idea that “social order,” as he would soon call it, must be explained in terms of individual actions, beliefs and desires. While Hayek’s Austrian approach would soon become marginalized in the economics discipline, methodological individualism was there to stay.<sup>1</sup>

Many social scientists have been unhappy about methodological individualism. In search for an alternative paradigm, some have promoted an evolutionary approach to social science, more recently baptized as “generalized Darwinism” (Aldrich et

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<sup>1</sup> The definition of methodological individualism is the topic of extensive debate (Udehn, 2001; Hodgson 2007a, p. 212), and there are many variants of methodological individualism. It is clear that the methodological individualism of mainstream rational choice theory differs from Austrian methodological individualism. I will be mainly concerned with Hayek’s conception.

al., 2008), applying the powerful Darwinian theory of biological evolution to social, cultural and economic evolution. Perhaps the most important advocate of a generalized Darwinism for the social sciences is Geoffrey Hodgson. Almost twenty years ago, Hodgson started his campaign for “the application of an evolutionary approach to economics” (1993, p. 32), for *bringing life back into economics*, as the subtitle of his book *Economics and Evolution* states. Recently, he co-authored another book, entitled *Darwin’s Conjecture: The Search for General Principles of Social and Economic Evolution*, in which he suggests that “generalized Darwinism could become the backbone of a unified evolutionary framework for the social and behavioral sciences” (2010, p. 3).

In contrast with anti-individualist Darwinians like Hodgson, Hayek supported both methodological individualism and an evolutionary approach to social science. Now, Hayek’s methodological individualism itself already has an evolutionary flavor to it. That social order must be explained in terms of individual actions, beliefs and desires, in Hayek’s view, does not mean that social order is deliberately created by individuals (Hayek 1944, pp. 27–28). On the contrary, only if something, while resulting from the purposeful action of individuals, is not deliberately created, can it truly be called a “social” phenomenon. Because social order is not the result of deliberate design, Hayek would later call it “spontaneous order.” Hayek’s own theory of spontaneous market order is based on the idea of prices as a communication mechanism and the disappointment of expectations as a negative feedback mechanism coordinating the plans of market agents.

The concept of spontaneous order will become increasingly important for Hayek. When evolutionary themes become prominent in later writings, it is clear that evolution and spontaneous order are closely related. He even speaks about the “twin ideas” of evolution and spontaneous order (Hayek, 1967b, p. 77; 1973, pp. 23, 158; 1988, p. 146). His evolutionary social theory, a theory about how the rules of the market emerged, is most fully elaborated in his last book, *The Fatal Conceit* (1988):

That rules become increasingly better adjusted to generate order happened not because men better understood their function, but because those groups prospered who happened to change them in a way that rendered them increasingly adaptive. This evolution was not linear,

but resulted from continued trial and error, constant “experimentation” in arenas wherein different orders contended. Of course there was no intention to experiment—yet the changes in rules thrown forth by historical accident, analogous to genetic mutations, had something of the same effect (p. 20).

This is a theory of “cultural evolution” through “group selection.” Like his theory of spontaneous market order, his theory of cultural evolution is directed against the idea of deliberate design. To adapt Pascal’s famous quote: *Rules have their reasons that reason does not know of.*

While there are some similarities, there are clearly differences between Hayek’s methodological individualism and his cultural evolutionism. Hayek says that “there was no intention to experiment” in cultural evolution, that cultural evolution is based on something like “genetic mutations.” The idea of behavior as random mutation, however, seems to conflict with the methodological individualist principle that social phenomena should be explained in terms of purposeful behavior. Moreover, Hayek explains social phenomena in terms of functionality to the group rather than in terms of individual motives. It has thus been a perennial question whether the methodological individualism of the earlier Hayek and the evolutionism of the later Hayek are compatible. A large number of scholars (e.g., Vanberg, 1986) have concluded that methodological individualism and evolutionism are incompatible.

One of these scholars was Geoffrey Hodgson (1991; 1992, p. 1993). Hodgson (1993, p. 169) ironically speaks of a “fatal conflict” between Hayek’s methodological individualism and his evolutionary thinking—obviously an allusion to Hayek’s *The Fatal Conceit*. To show why there is such a fatal conflict, Hodgson introduces an interesting new argument, which will be the topic of this paper. He basically argues that Hayek wrongly views society as a kind of “social organism” that, on the basis of a fixed set of instructions, develops towards a predetermined end, as a fertilized egg automatically develops into a mature organism because of the instructions contained in its fixed set of genes. According to Hodgson, the fixed “genes” of the Hayekian market are the fixed beliefs and preferences of the market agents, and the fixed rules of the market order. Since biologists call the development of an

organism “ontogeny,” Hodgson calls Hayek’s views “ontogenetic” (pp. 179–180). Moreover, these ontogenetic views conflict with his evolutionary theory, because evolution, or “phylogeny,” is different from development, or “ontogeny.” Much in the spirit of Hodgson’s book, I will refer to ontogenetic tendencies in social science as *ontogenism*. We can add it to the long list of *isms* that have been attributed to social scientists, often with the intention to insult: optimism, Spencerianism, utopianism, perfectionism (cf. Hodgson 1993, pp. 180–181), Panglossianism (cf. p. 197), teleologism, totalitarianism (cf. p. 185), etc.

In this paper, I assess Hodgson’s ontogenism critique of Hayek’s economics and his cultural evolutionary theory. I will agree with Hodgson that, since the market rules are indeed taken as given, methodological individualism and the theory of spontaneous economic order are in a sense “ontogenetic.” However, I disagree with the idea that such an ontogenetic approach is problematic and that a phylogenetic theory of cultural evolution is incompatible with the ontogenetic views of methodological individualism and spontaneous order. Taking Hodgson’s social-scientific application of the concepts of ontogeny and phylogeny seriously, I will conclude that the idea of cultural evolution is perfectly compatible with the ideas of methodological individualism and spontaneous order. My argument is based on the rather obvious fact that, in biology, the mechanisms of ontogeny and phylogeny, and the respective studies of these mechanisms are not incompatible but complementary.<sup>2</sup> I will argue that the same can be said of market order and cultural evolution. Hence, there is nothing wrong with an ontogenetic approach, and there is no conflict with a phylogenetic approach. If the rules of the market are the “genes” of the market, then we could legitimately study either the phylogeny or the ontogeny of the market—the same is true of beliefs and preferences.

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<sup>2</sup> Biologists themselves have already tried to explain to social scientists (economists) that ontogenetic and phylogenetic accounts are complementary. Recently, Oxford zoologists West, Mouden and Gardner (2011, pp. 242–243) listed the confusion between “proximate” and “ultimate” explanations of behavior (or ontogeny and phylogeny, if you like) as the fourth of “sixteen common misconceptions about social evolution theory” by social scientists. At first sight, this seems to support Hodgson’s criticism of Hayek. However, they point out that the “key point is that these different methodologies are complementary and not competing alternatives.”

I will say more on Hodgson's argument and the concepts of ontogeny and phylogeny in the following section. The second section then investigates Hodgson's claim that Hayek considers beliefs and preferences to be fixed, just like genes are fixed in the ontogeny of an organism. I also discuss Bruce Caldwell's replies to Hodgson. Section 3 tackles Hodgson's claim that Hayek is an ontogenist because he considers rules to be fixed. I discuss the later Hayek's views on rule-guided behavior and conclude that the later Hayek still adhered to a kind of methodological individualism, which I call *naturalized methodological individualism*. In Section 4, I discuss Viktor Vanberg's trick to make cultural evolution compatible with methodological individualism, based on an individualistic conception of cultural evolution. I introduce my own compatibility argument based on the ontogeny/phylogeny distinction and the related proximate/ultimate distinction in Sections 5 and 6. I show that there are two relatively autonomous projects discernable in Hayek's writing, concerned with, respectively, the ontogeny of the market order and the phylogeny of the market order, and, ultimately, *evolution within the market* and the *evolution of the market*. The last section contains a conclusion.

## 1. HODGSON'S ONTOGENISM CRITIQUE

To understand Hodgson's new incompatibility argument based on the distinction between ontogeny and phylogeny, I will first explain in more detail what these terms mean in biology. Simply put, the distinction between ontogeny and phylogeny is that between the development of an individual organism and the evolution of a species. In Hodgson's own words, ontogeny, or ontogenesis, is "the development of a particular organism from a set of given and unchanging genes" (p. 40).<sup>3</sup> It is the subject of developmental

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<sup>3</sup> *Encyclopædia Britannica* (retrieved August 26, 2010, from <http://www.britannica.com/>) defines *ontogeny* as "all the developmental events that occur during the existence of a living organism": it "begins with the changes in the egg at the time of fertilization and includes developmental events to the time of birth or hatching and afterward—growth, remolding of body shape, and development of secondary sexual characteristics." Similarly, *biological development* refers to "the progressive changes in size, shape, and function during the life of an organism by which its genetic potentials (genotype) are translated into functioning mature systems (phenotype)." Biological development is contrasted with evolution and metabolism.

biology, of which embryology is an important subdiscipline. While the causation of behavior is different from ontogeny in the strict sense, the organism's behavior is also part of its ontogeny in the broader sense, and I will adopt this broader usage of the term (*cf.* note 22). This development is directed by the organism's "genotype," but environmental factors influence the "phenotypic" expression of genes. Hence, we could say that ontogeny has two characteristics: it starts from fixed elements, namely the genes, and it has a predetermined end, namely the mature organism. Of course, the end is not fully predetermined, since the environment will influence the specific course of development. But genes clearly give some direction to the organism. Moreover, no end is consciously determined by anybody, of course.

Phylogeny, or phylogenesis, on the other hand, is defined by Hodgson as "the complete and ongoing evolution of a population, including changes in its composition and that of the gene pool."<sup>4</sup> Phylogenetic systematics or cladistics studies how species or other groups are related and maps this relatedness in "phylogenetic trees," gradually unveiling the whole "tree of life." Phylogeny is characterized by variable elements, namely genes, and the lack of a predetermined end—man is not the end of evolution, contrary to what many believe.

In short, ontogeny is the development of an individual organism—"from fertilized egg to mature organism"—and phylogeny is the evolution of a whole species—"from bacterium to homo sapiens." Now, Hodgson applies these concepts to the social sciences. An "ontogenetic" social or economic theory, or an "ontogenetic" conception of social or economic evolution, is then characterized by fixed elements (the individuals, their beliefs and desires, or the rules they follow) and a predetermined end (contemporary Western capitalist society, say). On the other hand, "phylogenetic" theories view society as characterized by "renewed variety and diversity" and "the possibility of spontaneous disorder" (Hodgson, 1993, p. 179).

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<sup>4</sup> *Encyclopædia Britannica* (retrieved August 26, 2010, from <http://www.britannica.com/>) defines *phylogeny* as "the history of the evolution of a species or group, especially in reference to lines of descent and relationships among broad groups of organisms." The biological theory of *evolution* refers to the idea that "animals and plants have their origin in other preexisting types and that the distinguishable differences are due to modifications in successive generations."

In Hodgson's view, Hayek's methodological individualism and his theory of spontaneous order are ontogenist.<sup>5</sup> It is as if Hayek's "social organism" develops spontaneously from a fixed set of "genes." Hayek calls evolution and spontaneous order "twin ideas," but this is a mistake according to Hodgson because evolution is always phylogenetic: that Hayek thinks that evolution and spontaneous order are the same might be due to the fact that his earlier methodological individualist ontogenism contaminated his later views on cultural evolution. In other words, his ontogenist theory of social order might be compatible with his later theory of cultural evolution because the latter is also ontogenist.

On the other hand, Hodgson does suggest that the later Hayek made some steps towards a fully-fledged phylogenetic theory of cultural evolution. While he is not entirely clear on this, Hodgson seems to be arguing that *either* Hayek had an ontogenetic conception of evolution, but then it is the wrong conception, *or* he had (or at least gradually developed) a truly phylogenetic conception of evolution, but then this conflicts with the ontogenism of his methodological individualism and his spontaneous order view.<sup>6</sup>

<sup>5</sup> Independent and also different from Hodgson's views, Ioannides (2003, p. 542) speaks about "an *ontogenetic* approach to the formation of orders." Somehow this is linked to the so-called fact that the spontaneous origin of spontaneous order is an essential characteristic of spontaneous orders according to Hayek. I believe that this is not only a mistaken representation of Hayek's views but also a dubious use of the word "ontogenetic."

<sup>6</sup> Hodgson (2004b, p. 296) insists that his view is more nuanced than just asserting that Hayek's methodological individualism and his conception of evolution are "ontogenetic." Hodgson (1993, ch. 3) indeed constructs a quite elaborate taxonomy of theories of economic evolution. While Adam Smith and Carl Menger are in the "ontogeny" category, Hayek is not. But Hodgson further distinguishes "consummatory" from "non-consummatory" notions of phylogenetic economic evolution. The term "consummatory" refers to Thorstein Veblen, according to whom "there is no trend, no final term, no consummation" in evolution (quoted by Hodgson). The distinction between consummatory and non-consummatory evolution "rests on the degree of creativity and variety in the system and its effect on any consummatory progress towards order or equilibrium." According to Hodgson, both Herbert Spencer's and Hayek's theory of social evolution are phylogenetic in nature, but still consummatory. In consummatory theories of phylogenetic evolution, there initially is variety and a selection mechanism, but eventually the variety dries up, is limited or cannot prevent the system from tending towards equilibrium. Hodgson says that Spencer and Hayek adhere to some kind of "reversed Haeckel's law" in which phylogeny "recapitulates" or "is



Perhaps the difference between ontogeny and phylogeny in biological and social evolution is still a bit confusing. Hodgson's own work on "generalized Darwinism" can shed light on the difference. Abstracting from all the details of the specific mechanisms of biological evolution, the process of phylogenetic evolution can be said to be based on three principles: variation, heredity and selection (Hodgson 1993, p. 46). To speak of "evolution," there must be sustained *variation* in a certain population, some of this variation must be *inherited*, and the better adapted variants must be *selected*. In evolutionary biology, variation is caused by mutation and cross-over of DNA, traits are inherited through the copying of DNA, and "nature selects" through differential survival in specific environments.

In this threefold process, there are two types of entities at work. Richard Dawkins famously called the entity that varies and is copied a *replicator*. In evolutionary biology, the gene is the replicator. Elaborating Dawkins' ideas, David Hull (1988, p. 134) defines a replicator as "an entity that passes on its structure largely intact in successive replications." It is the unit of variation and heredity. The entity that interacts with its environment is called an *interactor*.<sup>7</sup> In evolutionary biology, the organism is normally the interactor. Hull defines an interactor as "an entity that interacts as a cohesive whole with its environment in such a way that this interaction causes replication to be differential." It is the unit of interaction and selection. Selection then is "a process in which the differential extinction and proliferation of interactors cause the differential perpetuation of the replicators that produced them." Note that the replicator/interactor distinction is similar to the genotype/phenotype distinction.

Because the replicator contains instructions on how to build an interactor and on how this interactor has to interact, Hodgson (1993, p. 164) calls it an *instructor* as well. He describes it as an entity that contains information consisting of "coded instructions

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asymptotic to" ontogeny (pp. 90–92; 179–180). In what follows, I will not explicitly make the rather scholastic distinction between the category of ontogeny and the "consummatory" category of phylogeny.

<sup>7</sup> Hodgson (1993, pp. 167–168) uses Dawkins' term "vehicle." In later writings, he uses Hull's term "interactor" (e.g., Hodgson and Knudsen, 2004).

programming or directing behavior or growth.”<sup>8</sup> Instruction could also be seen as a principle of evolution in addition to variation, heredity and selection.

The principle of variation in phylogenetic evolution implies that there is diversity of instructors. Due to diversity of instructors, there is also diversity in interactors, which is crucial for the selection mechanism. The principle of selection, on the other hand, should not be understood in the sense that eventually a final product will be selected: a perfect interactor or a perfect group of, or harmony between, interactors. There is no predetermined end towards which evolution “develops.” Because of endless variation in instructors, interactors and environmental conditions, evolution is open-ended.

In ontogeny, by contrast, the instructors only function as instructors and not as variable replicators; instruction is indeed the one and only principle of ontogenetic development. Since there is no variation in instructors, there will be no variation in interactors in ontogeny: the instructors (together with the environment, of course) determine what the interactor will look like.

## 2. “FIXED” BELIEFS AND PREFERENCES

According to Hodgson (2004b, p. 296), “the key distinction between ontogeny and phylogeny hinges on whether the population of gene-like units (say individuals, beliefs, habits or rules) is fixed or changing.” Therefore, if we want to assess the ontogenism critique, we must first identify the “gene-like unit” or the “instructor” in Hayek’s economics. In this paragraph, I will discuss beliefs and preferences; in the next paragraph, I discuss rules.

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<sup>8</sup> “Instructor” is Hodgson’s original term. What Hodgson calls “instruction” is very similar to what Ernst Mayr calls “decoding” (cf. Vanberg 2002, p. 16). In later writings, Hodgson no longer uses the instructor concept. However, recently, he seems to have implicitly revived the idea by adding an extra characteristic to the replicator concept. Hodgson and Knudsen (2008, p. 53; 2010, p. 122) characterize *generative replicators* as “material entities that embody construction mechanisms (or ‘programs’) that can be energized by input signals, containing information about a particular environment. These mechanisms generate further instructions from the generative replicator to the interactor, to guide its development.” He calls these mechanisms “conditional generative mechanisms.” Hodgson and Knudsen actually say that “generative replicators” are a subset of replicators, but one might as well say that replicating instructors are a subset of instructors.

One would expect that the individual is the relevant unit in a methodological individualist explanation. However, according to Hayek (1942, p. 284), the concepts, views and attitudes of individuals are the units of explanation. Beliefs and preferences are actually a subset of these views and attitudes but, for the sake of the argument, I will accept the simplification, which is also to be found in Hodgson's discussion of Hayek.

Hodgson criticizes the methodological individualist assumption that beliefs and preferences are given: in a truly phylogenetic evolutionary approach beliefs and preferences should be variable. Methodological individualists do not give good reasons for stopping short with the individual; they just install a dogmatic demarcation between the social sciences and psychology (Hodgson, 1991, p. 77; 1993, pp. 153–156), "a Berlin wall" (2004a, p. xv). Moreover, the consistent evolutionist should perhaps take the "genetic reductionists" seriously and pursue his reduction to the level of the gene, rather than stopping at the level of the individual (Hodgson, 1993, p. 167). Hodgson himself insists that institutions influence individual preferences.

Bruce Caldwell, the current editor of Hayek's collected works, has gone through the effort of answering Hodgson's ontogenism critique.<sup>9</sup> Caldwell denies that Hayek was a "methodological individualist" or, in any case, that he remained one throughout his academic career (Caldwell, 2001, pp. 549–551). Caldwell approvingly quotes Hodgson (1993, p. 211) saying that "[t]here have been some shifts in Hayek's work over the years." According to Caldwell, methodological individualism is an early and quite marginal phenomenon in Hayek's work: something pertaining to

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<sup>9</sup> In contrast with some of Hodgson's other arguments against Hayek, his ontogenism critique has not received that much attention (see however Steele [1996] and Rizzello, [2000], p. 138, n. 13). Perhaps scholars believed that ontogeny was "just another metaphor" not to be taken too seriously. An exception to the neglect of Hodgson's ontogenism critique is this interesting discussion with Caldwell on Hayek and evolution: see Hodgson (1993, 2004b) and Caldwell (2001, 2004b). (Hodgson gave one more reply, entitled "Caldwell on Hayek on Historicism, Institutionalism and Evolution," which should be forthcoming in *Journal des Economistes et des Etudes Humaines*: see <http://www.geoffrey-hodgson.info/debates-2.htm>.) Many problems are cleared out throughout the discussion, but Caldwell (2004b) concludes that the ontogeny issue is one of the things on which they *simply disagree*.

the wartime essay quoted at the beginning of this paper (Hayek, 1942–1944)—Caldwell calls it the “Scientism” essay—and some other related work (Hayek, 1948).

Moreover, in as far as he was a “methodological individualist” (maybe only at a particular time), Hayek’s methodological individualism was not mainstream but *sui generis*, Caldwell (2001, pp. 550–551; 2004b, pp. 303–304) argues. Hayek is not claiming that preferences do not change, but rather that we have “so little information” on preferences and changes in preferences. Caldwell distinguishes between “fixed” and “given” preferences: that something is given in a theory does not mean that it is fixed in reality but merely that it remains unexplained in the theory.<sup>10</sup> I would add: that something is given also does not mean that it is “uncaused” (cf. Hodgson, 1993, pp. 154–155; 2002, p. 276). “Fixed” and “uncaused” are descriptive or ontological terms while “given” refers to a methodological strategy.

Caldwell (2001, p. 550, n. 2) says that “[a]s far as I know, Hayek never explicitly discussed the stability of preferences issue.” Let me point out two passages where Hayek discusses this issue. In *The Pure Theory of Capital*, Hayek (1941, p. 216) argues that it will be “advisable at first” to study decisions about saving and consuming on the “assumption of constant data.” This assumption will in particular include the “assumption that the tastes and the knowledge of the economic subject and the flow of services from the permanent resources which he commands remain the same.” Importantly, the idea of constant tastes “is of course again not something which is supposed to exist in reality; it is merely an expository device and is closely connected with the concept of the stationary state” (p. 217), i.e. the state of stationary equilibrium. Much of this chapter on “time preference” is copied from an earlier article on utility analysis published in *The Economic Journal* in 1936 (p. 216, n. 1). Again, in a review of John Kenneth Galbraith’s *The Affluent Society* (1958), which famously argued that desires depend on production, Hayek (1961, p. 347) agrees with Galbraith that “the tastes of man, as is also true of his opinions and beliefs and

<sup>10</sup> Hodgson (2007a, pp. 214–215) says that it is not clear whether methodological individualism is about “social ontology” or a “social explanation”: methodological individualism is often confused with “ontological individualism.”

indeed much of his personality, are shaped in a great measure by his cultural environment." But this does not mean that economists should explain tastes.

Hodgson (2004b, pp. 297–298) replies to Caldwell that it is an unscientific attitude to leave phenomena unexplained. Social scientists need data and theories on preferences, and they in fact have them, Hodgson says. Let me give two comments on this. First, it is true that Hayek claimed that a detailed explanation of all human thought is impossible (Hayek, 1943, p. 38; 1952, pp. 184–190). However, Hodgson is wrong to say this is unscientific because Hayek's criticism does not preclude detailed explanations of particular psychological phenomena or explanations in terms of the principles that underlie all thought. Second, it is true that the Hayekian methodological individualist stresses that one scientist cannot explain everything. This is even more than a practical matter: there is always something that remains unexplained. All science, and all thought must remain abstract to some extent (Hayek, 1943, p. 53), which Hodgson (1993, p. 156; 2004b, p. 298) himself recognizes. However, scientists can focus their attention on ever-new objects and thus push the boundaries of the known.

Even when things can be explained, it can still be scientifically justified to leave them unexplained. We need not resort to ignorance, as Caldwell does, to save the idea of given preferences. The fact that a phenomenon has to remain "unexplained" is a relative matter: while it remains unexplained *in a certain theory or a certain discipline*, it must not necessarily remain unexplained *in all theories or all disciplines*. Of course, preferences cannot remain unexplained *in psychology* (cf. Caldwell 2004b, p. 304). Taking preferences as "given" in the sense of "unexplained" does not imply that they are ontologically "fixed" or "uncaused," or epistemologically "unexplainable." Preferences might be perfectly explainable (at least the principle), but are explained by psychologists rather than social scientists. In other words, social scientists can legitimately study the developmental consequences of preferences—the "ontogeny of preferences"—while leaving the evolutionary causes of preferences—the "phylogeny of preferences"—to the psychologist.

Hodgson recognizes Hayek's idea that preferences need not remain unexplained in psychology. But he insists that this is a "dogmatic and over-restrictive conception of the domain of the

social sciences" (Hodgson, 1993, p. 154; cf. 2004a, pp. 38–39). However, Hayek's point is that, even if a social scientist can explain psychological phenomena such as beliefs and preferences, "for the task of the social sciences such an explanation of the formation of mental entities... is unnecessary, and... would help us in no way in our task" (Hayek, 1943, p. 38).

Hayekian methodological individualism is best understood as the application of a kind of methodological proportionality principle to the case of social science, according to which the means or methods must always be proportional to the aim.<sup>11</sup> While the "collectivist" who fails to reduce aggregate phenomena to individual interaction does not explain enough, the physicalist or genetic "reductionist" who wants to reduce everything to the smallest unit explains too much for the purpose of explaining social phenomena. Proportionality is important in science because of the limited time and energy of the scientists: a scientist must set himself a "micro-task," for instance explaining business cycles, and use all the means available *but no more than necessary* to bring this task to an end. On the other hand, I believe that the earlier Hayek forgot that when psychological information is relevant to the explanation of certain economic phenomena it should be used in economic modeling. But even then, Hayek could argue that it is psychologists who tell the economist what the preferences and beliefs of individuals are, and economists *as economists* take this for granted.

Note that methodological individualism does not necessarily imply that social scientists, as individuals or scientists in general, should abstain from studying the causes of mind and behavior. It only implies that when scientists are studying mind and behavior,

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<sup>11</sup> Hodgson (2007a, pp. 212–214; see also Udehn, 2002, p. 501) says that it is not clear whether methodological individualism is a "universal methodological imperative" or a "(sub)disciplinary demarcation device." According to Schumpeter, methodological individualism is not a universal principle but demarcates economics from sociology. Schumpeter argued that, when thinking about economic method, "[w]hat counts is not how... things really are, but how we put them into a model or pattern to serve our purpose as best as possible," so that "the nature of a political economy" and "even the nature of economics is not important to us" (Schumpeter, 1980, p. 5). In his writings on the difference between social science and psychology, Hayek has a Schumpeterian view of methodological individualism as a demarcation device. Note that Hayek approved of the younger Schumpeter's works (see the preface to Schumpeter [1980], written by Hayek).

they cease to be social scientists and become psychologists. This is so because Hayek categorizes scientific disciplines according to their “macro-aims.” The social scientist studies social phenomena and inquires how they are the *consequence* of purposeful thought and behavior (*cf. supra*), while the psychologist studies psychological (and behavioral) phenomena and thus inquires into the *causes* of thought and behavior. This is not a dogmatic, prohibitive statement; it is an analytic, definitional statement: we just call one thing “social science” and another thing “psychology.” It is not because someone is an economist that he *must not* study the mind, but it is because someone studies the mind (rather than society) that he *is not* an economist. That Friedrich Hayek is an economist is not a reason for him to refrain from studying the mind. However, in as far as Friedrich Hayek studies the mind and the mechanisms underlying the mental order, which he in fact did, he is a psychologist rather than an economist: if he would write a book on this, he would call it an enquiry into the foundations of *theoretical psychology* rather than theoretical economics, as he in fact did (*cf. Hayek [1952]*).

But Hayek’s economics does not even take preferences and especially beliefs as given. He tried to understand how economic equilibrium will be disturbed when an individual changes his plans “either because his tastes change... or because new facts become known to him” (Hayek, 1948, p. 52). Expectations differ from individual to individual<sup>12</sup> and change after being disappointed, which is important for the “tendency towards equilibrium.” Competition is a “discovery procedure” (Hayek, 2002; 1979, p. 67) in which entrepreneurs<sup>13</sup> discover new production methods, products and desires. But competition is also a selection process: entrepreneurs try out new strategies and profits and losses work as a cybernetic negative feedback mechanism (Hayek, 1976, p. 125) selecting the strategies that work and eliminating those that do not work. The Hayekian market can thus be seen as a process of phylogenetic

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<sup>12</sup> Hayek criticizes the “objectivist” assumption that “all the knowledge and beliefs of different people [are] identical” (Hayek, 1942, p. 280).

<sup>13</sup> Contrary to what Hodgson (1993, p. 179) contends, Hayek (2002, p. 18) is explicit about the role of the entrepreneur in treading new paths.



evolution of entrepreneurial ideas or *evolution in the market*.<sup>14</sup> Hence, Caldwell (2004b, p. 303) is right that “the fact that within a market system new knowledge is constantly being discovered and that the market process itself aids in the discovery and transmission of new knowledge means that there are manifold sources of variety in a market system” (see also Steele, 1996, p. 396), and Hodgson’s claim that there is no variety is false. Hayek (1948, p. 39) often mocked and vigorously criticized economists’ tautological references to “given data” (it could have been written by Hodgson). Moreover, Hayek recognized the necessity of an empirical theory of learning for economics.

While Hayek attaches a great deal of importance to change and variety of beliefs, Hodgson might be right that he underestimates the importance of changing preferences. With regard to the tendency towards equilibrium, Hayek (1948, p. 52) says that changes in tastes *do not concern him there*, and he has never seriously thought about the consequences of evolving preferences. I believe that an evolutionary economics that endogenizes preferences has great potential. However, Hayek’s micro-task was to explain market order in terms of learning individuals. Can we reproach him for not taking changing preferences into account in his theories? I think that the only way we can do this is by showing that the economic phenomena Hayek tried to explain are better explained by assuming changing preferences, or by showing that the social phenomena Hayek believes to occur, actually do not occur because of changing preferences. If we cannot show such things, we might as well reproach him for not taking into account the curving of space-time.

### 3. “FIXED” RULES AND SOCIAL ORDER

Hayek’s theory of spontaneous market order is thus about real phylogenetic evolution in the market. However, Hodgson (1993, p. 176) has another argument to prove that Hayek was an

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<sup>14</sup> Hayek (1979, p. 203, n. 43) also appraisingly refers to Chicago school economist Armen Alchian’s (1950) evolutionary view on the market. The evolutionary nature of his *political philosophy* is illustrated by the importance Hayek (1960) attaches to “the emergence of what we shall want when we see it” (p. 29) and “the growth of knowledge and the gradual advance of moral and aesthetic beliefs” (p. 394).



ontogenist: Hayek took at least the rules of the market as given. Before tackling this issue, I will clarify Hayek's ideas on rules and rule-guided behavior.

Hayek's old interest in psychology was revived ever since working on *The Sensory Order* (1952). He realized that man's behavior is often not guided by conscious thoughts and explicit purposes, but by unreflected rules of conduct. A rule, for Hayek, is a habit or a custom, a disposition to act in a certain way (Hayek, 1967a, p. 57). Typically, rules are followed blindly: we do not follow them because we understand their function. The rules of property and contract are especially important for Hayek because of the function they fulfill in generating the market order.<sup>15</sup>

But is the later Hayek who emphasizes rule-guided behavior still a methodological individualist? According to the earlier Hayek, the task of the social sciences is to study the unintended consequences of *purposeful* behavior. In the "Scientism" essay, Hayek (1942, pp. 276–277) states that people's "unconscious reflexes or processes" are the subject of the "natural sciences of man" rather than the "social sciences in the narrower sense," which are concerned only with "conscious or reflected action." Hence, it seems that the later Hayek who emphasizes rule-guided rather than purposeful behavior is no longer a methodological individualist.

This is the conclusion Caldwell draws. He argues that methodological individualism is merely an early phenomenon restricted to his wartime "Scientism" essay.<sup>16</sup> For Caldwell, this is a reason to

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<sup>15</sup> In the light of Hayek's writings on the rules of the market, it is very strange that Hodgson criticizes him for neglecting institutions. Rightly so, Hodgson (1991, pp. 67, 79; 1993, p. 176) agrees with Vanberg (1986, p. 75) that there is no absolutely free market without any rules but that the market "is always a system of social interaction characterized by a specific *institutional framework*." But, oddly enough, Hodgson says that Vanberg is "criticizing Hayek on this point." However, it is simply not correct that Vanberg criticizes Hayek there: Vanberg (1986, p. 97) says explicitly that "Hayek has to be credited for having addressed this issue more explicitly and more systematically than most 'free-market economists.'" More recently, Hodgson and Knudsen (2010, p. 230) repeat that "the market itself requires rules in order to operate" but now add "as Friedrich Hayek (1960) accepts."

<sup>16</sup> Hodgson has not made up his mind on the issue when, if ever, Hayek was a methodological individualist. Hodgson (2007a, pp. 215, 221) considers that perhaps at least the *later* Hayek is not adequately referred to as methodological individualist, referring to Caldwell (2004a), and a bit further states that Hayek

rebut the allegation that there is an inconsistency in Hayek's work between his methodological individualism and his evolutionism. Caldwell's chronological consistency argument could be reinforced by Hodgson's (1993, p. 153) claim that Hayek's evolutionism is a late development: his theory of cultural evolution is fully elaborated only in his book *The Fatal Conceit*, published in 1988. Caldwell (2001, p. 541) refers to earlier proofs of an evolutionary approach, for instance, in Hayek (1960): but luckily it is all later than the wartime "Scientism" essay. The full-fledged theory of cultural evolution can be found, according to Caldwell (2002, p. 293), in the 1967 "Notes on the Evolution of Systems of Rules of Conduct."

Now, a careful reading of the 1967 "Notes" reveals that Hayek was still a methodological individualist at that time, so that Caldwell's chronological consistency argument does not work. More specifically, it seems that Hayek adapted rather than dropped his earlier methodological individualism of the "Scientism" essay. In the "Notes," Hayek (1967b, pp. 71–72) defines social science as "an effort to reconstruct the overall orders" which are formed through "the interplay of the rules of conduct of the individuals with the actions of other individuals and the external circumstances." Likewise, economics is "an endeavour to reconstruct from regularities of individual actions the character of the resulting [market] order." Although Hayek does not explicitly use the term in the text, this clearly implies a kind of methodological individualism. As in the "Scientism" essay, the task of the social sciences is to explain social order in terms of individual behavior. But the later Hayek no longer believes that it is necessary to start from action that is (subjectively) believed to serve a certain end which is (subjectively) valued: nonpurposive rule-following behavior too can result in social order.

Because of the radical exclusion of "unconscious reflexes or processes" from social science in the "Scientism" essay, I believe it

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was impelled to abandon the term. He quotes the *later* Hayek (1967b) arguing that he has a non-individualist social ontology featuring individuals as well as relations (see also Hodgson, 1991, p. 77). This contrasts with Hodgson's earlier view that Hayek's later evolutionism is contaminated by his *persistent* methodological individualism. At other times, Hodgson (2004a, p. 18) quotes the *earlier* Hayek (1948) to show that he was not (and presumably has never been) really a methodological individualist.

is useful to distinguish between Hayek's earlier more *hermeneutical* and his later *naturalized* methodological individualism. While hermeneutical methodological individualism wants to explain social phenomena in terms of purposeful behavior based on (boundedly) rational choices, naturalized methodological individualism advocates explanations in terms of regular behavior: behavior guided by rules but not necessarily by rational choice. This nuance was not captured by Caldwell (2004a, p. 260) and Vanberg (2004), who simply call the methodology promoted in the "Scientism" essay "naturalistic subjectivism" and "scientific subjectivism."

At first sight, a naturalized rather than hermeneutical methodological individualism is more easily reconciled with an evolutionary approach. However, it is exactly Hayek's view of economics as "an endeavour to reconstruct from regularities of individual actions the character of the resulting order" which urges Hodgson (1993, p. 161) to claim that "he is letting the cat out of the bag," since "[b]iological ontogeny is precisely the endeavor to explain the development of organisms from the regularities of their genetic endowment, in contrast to phylogeny which considers the sifting and changing of the gene pool through natural selection or drift." Hodgson has a point there: Hayek even goes on to say that "for the explanation of the functioning of the social order at any time the rules of individual conduct must be assumed to be given" (Hayek 1967b, p. 72). In other words, the economist must assume that the rules of property and contract are given. This suggests an ontogenetic metaphor of development from a given set of gene-like elements. So, even if Caldwell is right that *within a market system* new knowledge is constantly being discovered, Hodgson is right that for the Hayekian economist the rules *of the market* are still fixed so that, in a sense, the market system itself does not evolve.

However, Hodgson should realize that rules are again "given" to the economist rather than really "fixed" and that they are not something which cannot be studied, in Hayek's view. The description and explanation of these behavioral rules is a task for psychology, Hayek (1967b, pp. 72–73) says: showing how "these rules have been selected and formed by the effects they have on the social order" is the task of "evolutionary social psychology." Hayek himself would become increasingly interested in such evolutionary social psychology and elaborated a theory of cultural

evolution that tried to explain how the property rights and contract law evolved. It is perhaps strange to call this theory of cultural evolution “psychology,” but that has to do with how Hayek classifies the scientific disciplines. Moreover, “psychology” is just a name and any other will do.

In addition to claiming that Hayek’s evolutionism is incompatible with his individualism, Hodgson doubts whether Hayek’s theory of cultural evolution is genuinely phylogenetic. To assess Hodgson’s doubts, we can make use of the conceptual framework developed earlier to think about evolution. The candidate instructor-replicators in Hayek’s theory would be the rules (Hodgson 1993, pp. 164–165). Rules definitely qualify as instructors; Hayek sees rules as dispositions, or *instructions*, to behave in a certain manner in a certain situation. However, Hodgson denies that Hayek’s rules are genuine replicators; he complains that the mechanism of replication is not sufficiently clarified in Hayek’s theory of cultural evolution. That is a bit unfair; Hayek clearly explains that in biological evolution transmission occurs “by the “genetic” process,” while in cultural evolution instructions are transmitted “by imitative learning” (Hayek 1988, p. 24). Hayek calls them respectively “genetic” and “cultural transmission.”

Moreover, even Hodgson (1993, p. 179) has to admit that Hayek recognizes the crucial role of variation in cultural evolution. For Hayek (1960, pp. 63, 146; 1979, pp. 161, 167, 204 n. 48), it is important that rules are not too rigid, so that individuals can sometimes break the rules; it is “this flexibility of voluntary rules which makes gradual evolution and spontaneous growth possible, which brings it about that further experience leads to modifications and improvements” (Hayek 1960, p. 63). This is an argument for Hayek not to use coercion to enforce all rules.

If rules are the instructor-replicators, Hodgson (1993, pp. 167–168) rightly suggest that in Hayek’s theory of cultural evolution the interactor function is fulfilled by the group or the social order.<sup>17</sup> In phylogenetic evolution, there must be ongoing variety of

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<sup>17</sup> Hodgson suggests that individuals can be interactors as well; then we speak of individual selection. Perhaps the most popular criticism of Hayek is that group selection is incompatible with methodological individualism but individual selection not (e.g., Udehn, 2001, p. 282). I believe that only naive group selectionism

social orders and ongoing selection of different social orders in an ever-changing environment. In contrast, Hayek regards the liberal market order as the ultimate end, according to Hodgson (pp. 178–180). For the authentic evolutionist, there is no such guarantee of order, equilibrium or coordination: there is always the possibility of disorder, disequilibrium and chaos. I disagree with Hodgson. If one reads Hayek on cultural evolution, it is clear that he recognizes that there is a variety of social orders. Hayek believed there was a time when groups structured according to market principles competed with groups structured according to egalitarian, authoritarian and other non-market principles. Hodgson is wrong to dismiss it all as ontogenism.<sup>18</sup>

#### 4. THE INDIVIDUALISTIC CONCEPTION OF CULTURAL EVOLUTION

But if Hayek's theory of cultural evolution was truly phylogenetic, does the blindness of evolution not conflict with methodological individualism and its assumption of rationality—be it bounded? If methodological individualism is interpreted as naturalized,

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that does not tackle the free-rider problem is incompatible with methodological individualism, but limited space does not allow me to discuss this issue here.

<sup>18</sup> Hodgson also wrongly claimed that Hayek did not really understand what evolution is. Earlier in his book, Hodgson (1993, p. 37) writes that the technical meaning of the word evolution contrasts with its etymology. The Latin verb *evolvere* means “unrolling,” but this is development rather than evolution: “the scroll is unrolled to reveal that which is immanent and already within,” Hodgson says. But Hayek (1973, p. 24) was aware of the ambiguity of the term evolution, which suggests “an ‘unwinding’ of potentialities already contained in the germ” (see Caldwell, 2001, p. 548). Further in the book, Hodgson (1993, p. 160) actually quotes this passage but quickly puts it aside. There are more proofs that Hayek understood very well what evolution is. Hodgson (1993, p. 46) says it is based on the principles of variation, heredity and selection. Well, Hayek identifies the same three mechanisms (Caldwell, 2001, p. 546). Moreover, Hayek implicitly (Hayek, 1973, p. 24) and even explicitly (Hayek, 1988, p. 26) applies the ontogeny/phylogeny distinction to social science (Caldwell, 2001, p. 548). More specifically, Hayek argues that “historicists” confuse ontogeny and phylogeny. Paradoxically, Hayek's argument against historicism (which includes Veblenian institutionalism) is thus similar to (the Veblenian institutionalist) Hodgson's argument against Hayek and Austrian liberalism. That Hodgson (1993, p. 291, n. 1) quickly dismisses Hayek's use of the ontogeny/phylogeny distinction only shows that he has made his judgment before confronting the evidence.

rule-based individualism, there is no conflict. But advocates of a more hermeneutical, choice-based individualism might still see problems. Viktor Vanberg (1986), for instance, starts from a choice-based definition of methodological individualism and concludes that Hayek's theory of cultural evolution through group selection is incompatible with it.

However, Vanberg believes that another conception of cultural evolution is possible which is compatible with (hermeneutical) methodological individualism (p. 82). Vanberg calls it the "individualistic, invisible-hand conception of cultural evolution." Moreover, Vanberg shows that this conception can occasionally be found in Hayek's work. In this conception of cultural evolution, variation and selection are wise rather than blind—and I would add that the same is true of instruction and replication.

Let us consider variation first. If cultural evolution is to be compatible with methodological individualism the variation of rules cannot be blind. In the individualistic conception of cultural evolution, Vanberg says, the process of variation is based on individual choices: it is "a process of individual innovation." Rules are thus somehow conceived by individuals; the individual is the intelligent "variator."

Second, in an individualistic account, the individual would be the intelligent "instructor" rather than the one being instructed. This would answer Hodgson's (1993, pp. 165–166) claim that viewing genetic and cultural rules as "instructors" instructing the individual is incompatible with methodological individualism.

Third, replication and selection are intelligent in the individualistic conception of cultural evolution. Vanberg (1986, p. 82) says that in this conception the process of selection is based on individual choices: it is "a process of individual imitation" (see also Whitman 1998, pp. 61–62). Selection is thus intelligent or artificial rather than natural. Since a rule is selected when it can replicate itself through people imitating others, replication too can be said to be intelligent in the individualistic conception. All this offers an escape to Hodgson's (1993, p. 165) argument that there is a conflict between the idea that we are programmed to blindly follow others and methodological individualism. Imitation just need not be blind.

As an example of an individualistic conception, Vanberg names Carl Menger's evolutionary theory of institutions. Menger's theory on the origin of money is probably the best example. The institution of money was as such never designed by anybody. Still, money evolved because people had a personal interest in the marketability of the goods they received in exchange for their own products.

A more recent example of an individualistic conception of cultural evolution is Oliver E. Williamson's theory of the evolution of organizational forms (Williamson, 1989, pp. 170–172). According to Williamson, chief executive officers created the multidivisional structure, the "M-form," in the twenties as a solution to problems of administrative and communicative overload in the unitary firm, the "U-form," for boundedly rational managers. But the M-form turned out also to solve another problem, namely that managers were not planning for the long term in the U-form structure: "the M-form innovation..., which had mainly bounded rationality origins, also had unanticipated effects on corporate purpose... by attenuating subgoal pursuit." Subsequently, multidivisionalization spread through takeover, yielding a "reproductive link." In addition to takeover, divesting parts that are no longer profitable also qualifies as a reproductive link if these parts stay multidivisional themselves. Williamson compares this "quasi-biological process" to cell division. Nevertheless, the creation of the M-form as well as subsequent copying were all rational behaviors.

In both Menger's theory of money and Williamson's theory of business organization, we have individualistic-evolutionary processes within the market framework that give rise to processes of selection between orders: money versus barter, and M-form versus U-form. Within the framework of the market, innovations emerge that change the very framework. Markets are thus able to transform themselves. These individualistic-evolutionary theories escape Hodgson's ontogenism critique because they postulate ongoing variety of social orders and ongoing selection of different social orders in an ever-changing environment.<sup>19</sup>

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<sup>19</sup> With regard to what has been said about Williamson's individualistic theory of organizational evolution and Hodgson's criticism of individualism, I must acknowledge the advice of an anonymous referee.



However, from a Hayekian perspective, the individualistic conception of cultural evolution cannot account for *all* instances of cultural evolution. In the social domain, some things are too complex for individuals to grasp. Moreover, it is impossible to explain all rules in terms of rational choice. In the paradigm of rule-guided behavior, reason is itself nothing but the following of cognitive rules. To argue that the rules of reason must themselves have been rationally constructed is viciously circular. Ultimately, some of these rules must have been generated blindly. As Hayek (1979, p. 163) says, "Man did not adopt new rules of conduct because he was intelligent. He became intelligent by submitting to new rules of conduct." The wisdom of rules must be the result of a selection process. Moreover, this selection cannot have been intelligent for the same reason that variation cannot have been intelligent: intelligence is what we are trying to explain. On the other hand, since intelligence means following evolved rules, there is no conflict between rule-guided behavior and rational behavior.

## 5. ONTOGENETIC AND PHYLOGENETIC APPROACHES ARE COMPLEMENTARY

If Vanberg's compatibility argument, based on the idea of an individualistic conception of cultural evolution, cannot hold for all instances of cultural evolution, I must look for other arguments. Ironically, I will be helped in this task by Hodgson's critique of methodological individualism, spontaneous order and Hayekian cultural evolution. Hodgson made a tactical mistake by summarizing his critique under the heading of "ontogeny": it contains the seeds for a powerful compatibility argument. The evident truth is that the biological processes of ontogeny and phylogeny, and the study of these processes, are fully compatible and even complementary.

Among compatibilists in the individualism/evolutionism debate, this has been at least implicitly recognized. For instance, Whitman (1998, pp. 60–62; 2004) argues that methodological individualism demands that we should start from the individual rather than the collective, but it does not answer the question which preferences and beliefs the individual has, whether he is rationally choosing the best options or blindly following rules, or which rules individuals follow. Group selection might give an answer to some of these



questions. According to Whitman (2004, p. 246), "MI dictates that individual choices lead to social outcomes; GS is one force (among many) that determines what sort of individuals are present in the system." In contrast with Vanberg's compatibility argument, based on the idea that cultural evolution can be conceived as an application of methodological individualism, Whitman's compatibility argument says that evolution and methodological individualism are just concerned with other aspects of social reality.

In a comment on Whitman's paper, the advocates of group selection Sober and Wilson (2004, p. 251) agree with Whitman that group selection is in theory compatible with Hayekian methodological individualism. This assent is noteworthy because Sober and Wilson (1998, pp. 329–330) used to be convinced incompatibilists who believed that the empirical evidence is in favor of group selection rather than individualism.<sup>20</sup> Interestingly, they link the distinction between methodological individualism and evolution to the distinction between *proximate* and *ultimate* explanations.

The proximate/ultimate distinction was coined by the evolutionary biologist Ernst Mayr and clearly refers to compatible approaches. In biology, proximate causes "govern the responses of the individual (and his organs) to immediate factors of the environment," while ultimate causes "are responsible for the evolution of the particular DNA code of information with which every individual of every species is endowed" (Mayr, 1961, p. 1503). The "functional biologist" is interested in proximate causes, while the "evolutionary biologist" is interested in ultimate causes; the one asks *how* something works, while the other asks *why*. Functional and evolutionary biology are not incompatible in Mayr's view: "There is always a proximate set of causes and an ultimate set of causes; both have to be explained and interpreted for a complete understanding of the given phenomenon" (cf. Tinbergen, 1963, pp. 411, 427).

Now, according to Sober and Wilson (2004, p. 252), "MI addresses what biologists call the question of proximate mechanism, whereas hypotheses of natural selection are part of the project of ultimate explanation." More specifically, methodological individualism constrains possible proximate explanations: it demands that

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<sup>20</sup> Hodgson (2004a, p. 17 n. 6; 2007a, p. 224 n. 11) still cites Sober's old view.

proximate explanations of collective phenomena refer to the beliefs and desires (and behavioral rules) of individuals. The biological phenomenon of sunflowers turning towards the sun, for instance, can be given both a proximate explanation referring to the processes and mechanisms within this plant and an ultimate explanation referring to the reconstructed evolutionary history of the sunflower. Likewise, a social phenomenon like the egalitarianism of adult male hunter-gatherers can be given both a proximate explanation referring to the psychological characteristics of these hunter-gatherers and an ultimate explanation referring to the reconstructed evolutionary history of the hunter-gatherer tribes.

The proximate/ultimate distinction is of course very similar to the ontogeny/phylogeny distinction (Francis, 1990, p. 405).<sup>21</sup> According to Sober and Wilson's interpretation of Whitman's compatibility argument, methodological individualism is thus concerned with ontogeny while cultural evolutionary theory is concerned with phylogeny, *and they are therefore compatible*. Sure, embryology with its "ontogenetic" approach and cladistics with its "phylogenetic" approach are not incompatible! Should we criticize the embryologist for taking the genome as given? If the "evolutionary biologist" should tolerate the ontogenism of the "functional biologist," should the "evolutionary economist" not also tolerate the ontogenism of the "functional economist"?

In a footnote (!), Hodgson (2004b, p. 289, n. 1; cf. 2001, p. 28) specifies the following:

Contrary to Caldwell (2001, p. 549), I do not assert that "phylogeny is the appropriate evolutionary metaphor for the social sciences, and ontogeny is a poor one." I argue that, in natural as well as social evolution, a full-blown evolutionary process must be phylogenetic as well ontogenetic. Ontogeny is not inappropriate but incomplete.<sup>22</sup>

<sup>21</sup> Strictly speaking, the proximate/ultimate distinction is broader than the ontogeny/phylogeny distinction. Niko Tinbergen (1963) famously distinguished between *four* topics in biology: the physiological causation, the ontogeny, the survival value and the evolution of a trait. Both Tinbergen's causation and ontogeny involve Mayr's proximate causes and both Tinbergen's survival value and evolution (or phylogeny) concern Mayr's ultimate causes (Nesse, 2009, p. 159). However, in the broad sense, we can say that ontogeny includes physiological causation so that it refers to *all* proximate causes.

<sup>22</sup> Likewise, Hodgson argues that self-organization theory, since it is ontogenetic, "cannot provide a *complete* evolutionary description" (Hodgson, 2002, p. 266;

Of course, Hayek's theory of spontaneous market order, like any other theory, does not explain everything, nor does Hayek claim that it does. More importantly, the fact that ontogeny is "incomplete" without phylogeny does not imply that ontogeny is "incompatible" with phylogeny. So, why does Hodgson (1993, p. 152) insist that there is "a tension between ontogenetic and phylogenetic conceptions of change"; why is it so that "[i]f evolution is phylogeny, then it conflicts with the more plausible ontogenetic interpretation of the emergence of a relatively stable and durable order" (p. 180); and why would there be a "fatal conflict" (p. 169) or "inconsistency" (2001, p. 78) between Hayek's methodological individualism and his evolutionism? If Hayek's theory of spontaneous (market) order is ontogenetic and his theory of cultural evolution phylogenetic, then the two theories are compatible!

Hodgson (1993) claims that his book is "informed by the pluralistic sentiment that economics should not be constituted by fixed methods or assumptions" (p. 8) and the pluralism he found in biology was one of the reasons to turn to that discipline to help economics (p. 33). Nevertheless, Hodgson fails to grasp the pluralist fact that different does not necessarily mean incompatible. With regard to theoretical pluralism, Mäki (1997, p. 40) distinguishes between theories "being substitutes, being *rival claims to nothing but the truth*" and theories "being complements, being *complementary claims to parts of the whole truth*," and he notes that economists tend to conflate these issues. Methods too can be either substitutes or complements. Hodgson's problem is that he wants to impose his evolutionism (and pluralism) on all social scientists. He fails to see that not everybody has to be an evolutionist and a pluralist; there is nothing wrong with doing "functional economics" and nothing else. The academic world would even be less pluralistic without them. Hodgson is right that not all economists, i.e. scientists studying the market, should take beliefs, preferences and the rules of the game as given—if variable beliefs, preferences or rules are relevant to explaining certain market phenomena. However, likewise, not all economists should take beliefs, preferences and the

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2004a, p. 51; Hodgson and Knudsen, 2006b, p. 10; cf. Hodgson, 2007b, p. 178; Hodgson and Knudsen, 2010, p. 56).

rules of the game as endogenous variables, even if that is relevant to explaining certain market phenomena.

Perhaps, after *Economics and Evolution* (1993), Hodgson gradually realized that there is no problem with an ontogenetic approach and that it is compatible with a phylogenetic approach (his views on Hayek seem to have softened too: see note 17). For instance, Hodgson (2007b, p. 178) now distinguishes between “[o]ntogenetic theories that focus solely on the development or behavior of *single* entities, organisms or systems” and “[p]hylogenetic theories that address the evolution of the fundamental propensities of *populations* of multiple entities, organisms or systems,” and his updated taxonomy is this time not meant as a criticism of some theories. However, in the old vein (see note 23), he continues that, while “[p]hylogeny does not exclude ontogeny... purely ontogenetic theories fail to consider the phylogenetic evolution of populations.”

Vanberg (1986, p. 85), who also believes that Hayek’s conception of cultural evolution is incompatible with methodological individualism, makes a mistake similar to Hodgson’s. Vanberg includes Ullmann-Margalit (1978, p. 282) among the scholars who have noticed the “inconsistency” in Hayek’s work. Now, Ullmann-Margalit distinguishes between “the aggregate mold” and “the functional-evolutionary mold” of invisible hand explanations (p. 283), which boils down to the distinction between individualist and evolutionary explanations. However, she merely “contrasts” these two molds only to indicate “where they may converge” and “how they may be superimposed” (p. 285). The two molds of explaining a social pattern or institution give answers to different questions. The question “how did it—or how could it have—come about?” is answered by the aggregate mold, and the question “why is it in existence?” is answered by the functional-evolutionary mold. The suggested answers to these questions, as well as the questions themselves, are absolutely compatible and even complementary: Ullmann-Margalit says that together they yield a satisfactory explanation. Her distinction between the aggregate mold and the functional-evolutionary mold of invisible hand explanations is very much reminiscent of Mayr’s distinction between functional and evolutionary biology, or proximate and ultimate causation. Both Mayr and Ullmann-Margalit stress the difference between *how* and *why* questions.

Let me apply these concepts to Hayek's theories and social science in general. Hayek's theory of spontaneous market order is about the ontogeny of market order. It is a proximate economic explanation: it explains how a certain economic phenomenon, namely "market order," emerges from many rule-guided interactions between individuals and thus answers the question *how* the market order works. It is here that Hayek speaks about spontaneous order and methodological individualism. The discipline concerned with proximate causes of economic phenomena is what I called *functional economics*. In Hayek's functional economics, the rules of the market are given.

Hayek's theory of the cultural evolution of the rules of private property and contract law, on the other hand, is about the phylogeny of market order. It is an ultimate economic explanation: it explains where the rules which generate the market order come from and thus *why* the market order does what it does. The discipline concerned with ultimate causes of economic phenomena could then be called *evolutionary economics*. Hayek might want to call it a kind of evolutionary "psychology" rather than "economics," but that is just an issue of naming. Of course, rules are not given in Hayek's evolutionary economics. Rules are the *explanantia* in his functional economics, but the *explananda* of his evolutionary economics.<sup>23</sup> As in biology, the difference between a functional and evolutionary approach in economics is temporal: the generation of market order from rule-guided behavior is a relatively short-run process compared to the evolution of market orders.<sup>24</sup>

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<sup>23</sup> Similarly, according to Langlois (1986, p. 7), there is a "dual role of institutions" in *new institutional economics*: first, institutions are the framework within which people act so that the resulting order will be very much determined by the content of these institutions, and, second, institutions need themselves to be explained. We could distinguish between "functional" and "evolutionary" institutional economics.

<sup>24</sup> Hodgson (1991, p. 78) recognizes that "[w]ith investigations into short-run processes, or partial equilibria, tastes and preferences could be taken as given" but adds that "in an unfolding and evolutionary perspective, involving long-run changes and developments in a social context, this compartmentalization is arguably out of place." While I believe that this temporal distinction shows why Hayek is consistent, Hodgson immediately concludes that "[t]hus, there is an inconsistency in Hayek's work between, on the one hand, the ideas emanating from his individualist roots, and, on the other, his growing commitment to an evolutionary perspective."

The distinction between the ultimate and proximate explanation of social order is clearest in Hayek's trilogy *Law, Legislation and Liberty*. Hayek (1973, pp. 45–46) distinguishes between “the spontaneous character of the resulting order” and the “spontaneous origin of the rules on which it rests.” Two different issues are at stake: the spontaneous development of the social order and the spontaneous evolution of the social rules. Hayek's “functional economics,” his theory of the spontaneous character of the market order, can be found in chapter 10 of *Law, Legislation and Liberty* on “The Market Order or Catallaxy,” for instance. Hayek's “evolutionary economics,” his theory of the spontaneous origin of the market rules, is to be found in the Epilogue<sup>25</sup> of the third volume of *Law, Legislation and Liberty*, and in chapters 2 and 3 of *The Fatal Conceit*, on respectively “The Origin of Liberty, Property and Justice” and “The Evolution of the Market.” As a theory of the spontaneous origin of the market rules, it is of course also a theory of the origin of the market order—since this order is made possible by those rules.

What is the relation between functional and evolutionary economics? Both functional and evolutionary economics take each other's results as given. Functional economics takes the market rules for granted: it does not explain why these rules emerged. Because functional economics does not depend on the question whether the rules on which this society is build were deliberately designed in the past or whether they spontaneously evolved, it is methodologically autonomous to a certain extent. Evolutionary economics, on the other hand, takes the functioning of the order for granted: it does not explain how economic order works; it presupposes that it works and then tries to explain why such an order would have evolved. The whole mechanism from rules to order can be neglected by evolutionary economists. They assume that certain rules result in a certain order and then study how differences in “fitness” of this order might cause the differential replication of rules. Because evolutionary economics does not depend on the specific mechanism according to which order results from rules, it is also relatively autonomous. However, the

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<sup>25</sup> Hayek regrets not being able “to account for the succession of the different economic orders through which civilization has passed in terms of changes in the rules of conduct” (Hayek, 1979, p. 161). He was already eighty years old by then.

ultimate explanation does render the proximate explanation more plausible: that property rights work makes sense when one realizes that they evolved in a selection process. The relative autonomy of proximate and ultimate explanations is related to what I have called the methodological proportionality principle: what one incorporates in one's explanation must be proportionate to the aim of the explanation.

## 6. PHYLOGENY WITHIN ONTOGENY

So far, I have agreed with Hodgson that Hayek's theory of spontaneous market order is an ontogenetic theory, while disagreeing that this entails consistency problems. But what about Caldwell's argument that beliefs are variable in the market order? I believe Hodgson and Caldwell can both be right because it is possible that the ontogeny of the market order involves phylogenetic evolution of entities *within the market order*. In general, ontogenetic development can involve phylogenetic selection of higher-level entities.<sup>26</sup> A typical biological example of phylogeny within ontogeny is the adaptive immune system. Since pathogens evolve rapidly, our immune system also rapidly evolves the antibodies that need to fight these pathogens. This evolution of antibodies occurs within the developing individual. Phylogeny within ontogeny is yet another way in which ontogeny and phylogeny can be compatible.

But what is the impact of entrepreneurial trial-and-error as a phylogenetic process on market order as an ontogenetic process? An anonymous referee commented that "these phylogenetic processes do not change the character of the overall process of ontogeny, i.e. the constant reproduction of the market order itself." This is nicely illustrated by Israel Kirzner's ideas on entrepreneurship and

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<sup>26</sup> Hodgson himself considers "the possibility that that ontogeny can also involve the natural selection of entities *within* the organism" (Hodgson, 2002, p. 266; 2004a, p. 51; Hodgson and Knudsen, 2006b, p. 10; Hodgson and Knudsen, 2010, p. 55). Hodgson and Knudsen (2006a, p. 358) argue that "[f]rom the biological point of view, habits are part of the biological phenotype" but "from the social viewpoint, habits become genotypes." Hodgson and Knudsen (2008, p. 49) state in general that "what might emerge as an interactor at one level might conceivably act as a replicator at another (higher) level."



equilibrium, and his criticism of Joseph Schumpeter (Kirzner, 1973, pp. 72–75). Schumpeter believed that entrepreneurs disturb the existing equilibrium (which is in line with Hodgson's claim that true phylogeny always implies disequilibrium). In contrast, Kirzner argues that the entrepreneur is the motor of equilibrization, since he "*brings into mutual adjustment* those discordant elements which resulted from prior market ignorance." Kirzner also criticizes Schumpeter's idea that equilibrium is approached because of imitators submissively following the entrepreneurs. In Kirzner's view, moving towards equilibrium requires real entrepreneurship, i.e., being alert or open to opportunities. Entrepreneurship does not disturb equilibrium but enables it. Entrepreneurial phylogeny does not disturb market ontogeny; it enables it.

Now, the evolution of entrepreneurial beliefs in the market order is an evolutionary process different from that of the rules of the market. This means that, in Hayek's work, economic evolution occurs at multiple levels, i.e. at the level of individual plans and expectations *within* the market system, and at the level of the constitutive rules *of* the market system. Instead of distinguishing between functional and evolutionary economics, one could thus distinguish between two types of evolutionary economics: the *evolution-of-the-market approach* and the *evolution-within-the-market approach*. Hayek's theory of spontaneous market order is then about evolution within the market, while his theory of cultural evolution is about evolution of the market. Evolution in the market and evolution of the market have different cultural replicators, i.e., the beliefs of entrepreneurs, and the rules of the market.

While we can call Hayek's theory of spontaneous market order an evolutionary theory, it is still legitimate to call it an ontogenetic theory. With evolution occurring at multiple levels, the concepts of ontogeny and phylogeny, proximate and ultimate, and functional and evolutionary become relative to the replicator level. From the viewpoint of the "fixed" market rules, Hayek's theory of spontaneous market order is about the ontogeny of the market order and thus a kind of "functional economics." But from the viewpoint of the variable beliefs, Hayek's theory of spontaneous market order is about phylogeny and thus truly a kind of evolutionary economics.

Hodgson fails to see this distinction between evolution *of* the market and evolution *within* the market in Hayek's work. Hodgson



(1993, p. 176) claims that Hayek's work is haunted by an "unresolved dilemma" of vital theoretical and political importance: "Does the market correspond to a particular type of *order*, or does it correspond to the general *context* in which the evolutionary selection of (all) orders takes place?" But if the market is itself an evolved order, Hodgson asks, would Hayek not need a *market for markets*? Alternatively, if the market is the context of selection, this context itself remains unexplained. Moreover, the market is only one possible institutional framework, Hodgson says. Somehow, this market order must have competed with other non-market or semi-market institutions. Therefore, supra-market selection processes should become the object of study.

However, Hayek does not ignore the possibility of selection at the level of structures, substructures or economic systems. Hodgson supposes that Hayek considers groups to be selected *within* the market, but Hayek's views are much closer to the supra-market selection process ideas Hodgson sketches. Moreover, Hodgson (1993, p. 49) recognizes himself that market orders are *both* objects and contexts of selection, so why would it be a "dilemma" in Hayek's case?<sup>27</sup>

## 7. CONCLUSION

In this paper, I formulated some objections against Hodgson's ontogenism critique of Hayek. Hodgson argues that Hayek's methodological individualism commits him to an ontogenetic approach to social order, which conflicts with the phylogenetic approach Hayek hinted at in his theory of cultural evolution. In Hodgson's view, methodological individualism and the theory of spontaneous social order start from given beliefs, preferences and rules that end in predetermined order, just like developmental biology starts from

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<sup>27</sup> If we recognize phylogenetic evolution at multiple levels, a problem might arise for Hayek's political conclusions though. Hodgson finds it ironic that Hayek endorses "the pluralism of individuals and entrepreneurs" while shunning "structural pluralism" (Hodgson, 1993, pp. 182–183, 85; cf. 1991, p. 80). While I see no "fatal conflict" between methodological individualism and evolutionism, I agree with Hodgson that there is a "policy contradiction." Eventually, without much reasoning, Hayek prefers evolution within the market to evolution of the market as foundation for his political philosophy.

given genes to end with the fully developed organism. However, as genes are variable and no organism is ever eternally perfected in evolutionary biology, so too beliefs, preferences and rules should be variable and social or economic order should never be attained for good in evolutionary economics, Hodgson argues.

Following Bruce Caldwell, I have argued that beliefs are not given in Hayek's economics: entrepreneurial beliefs evolve through the market process. In this sense, Hayek's economics is truly "evolutionary" or "phylogenetic." Moreover, there is no objection against studying the evolution of preferences in the market, although Hayek has not done this himself. On the other hand, even if beliefs are variable, his economics might still be called "ontogenetic" because the rules of property and contract are in a sense given. Hence, his economics is both ontogenetic and phylogenetic, i.e., phylogenetic relative to the variable (entrepreneurial) beliefs, and ontogenetic relative to the given rules of the market. This is already one reason that ontogeny and phylogeny are not incompatible.

Now, the fact that, in some of his writings, Hayek took the rules of the market as given does not mean that those rules are eternally "fixed." It merely means that *the functional economist* is not interested in explaining their existence. Functional economists want to explain market phenomena; other social scientists might be interested in explaining rules. Hayek himself got increasingly interested in explaining the origin of the rules constituting the market order. In his theory of cultural evolution, the rules are variable and there is an ongoing plurality of possible orders that are generated throughout cultural evolution. Hayek's cultural evolutionary theory is phylogenetic in all its characteristics. Methodological individualism belongs to his functional economics rather than his cultural evolutionary theory.

Ultimately, the reason that Hayek's "ontogenetic" theory of spontaneous market order is not incompatible with his "phylogenetic" cultural evolutionary theory is that ontogeny and phylogeny are not incompatible: proximate explanations of ontogenetic processes and ultimate explanations of phylogenetic processes are perfectly complementary. While the economist might want to explain how the beliefs of producers and consumers adapt to each other, he might just want to take the rules of the market as given. Moreover, the cultural evolutionist can take these economic coordination

processes for granted in his explanation. Hayek's two theories (the theory of spontaneous market order and the theory of the evolution of market rules) and the two methodological strategies they embody (methodological individualism and the evolutionary approach) are perhaps different but therefore not incompatible, as the true pluralist should recognize.

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