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AUSTRIAN ECONOMICS AND THE EVOLUTIONARY PARADIGM*

Abstract. This article discusses the challenges raised by the inclusion of evolutionary elements in the theories of Carl Menger, Joseph Schumpeter, and Friedrich Hayek. Each adopted an idiosyncratic position in terms of method of inquiry, focus, and general message. The breadth of the topics and phenomena they cover testifies to the great variety of interpretations and potential uses of evolutionary concepts in economics. Menger, who made no reference to Darwin's theory, advanced an "organic" view of the emergence of social institutions. Schumpeter elaborated an original theory of industrial development based on the recurrent emergence and dissemination of innovations. Hayek adopted the biological notion of group selection and made it the central element in his theory of cultural evolution and the rise of the free market. The chapter concludes with a preliminary evaluation of the possible role that evolutionary theorizing might play in the future development of Austrian economics.

Keywords: Darwin, evolution, free market, Friedrich Hayek, innovations, institutions, Carl Menger, Joseph Schumpeter

Introduction

The question of the relationship between Austrian economics and evolutionary theory is a rather complex one, primarily because the label *Austrian economics* does not refer to a homogeneous body of thought. The geographical attribute in the school's name is misleading since an Austrian school as such no longer exists. Its active branch resides today mainly in the United States and is therefore sometimes referred to as the Austro-American school of economics (see Boettke 1994). However, with respect to the three economists whose "evolutionism" we will discuss here – Carl

Menger, Joseph Schumpeter and Friedrich Hayek – the geographic criterion is relevant and historically accurate. The thinking of all three bears the mark of the intellectual environment of the Austro-Hungarian empire, in particular that of Vienna before and after World War I. Furthermore, despite considerable differences among their views, Menger, Schumpeter, and Hayek share what are deemed to be the core elements of Austrian economics: a preference for methodological individualism, a sceptical attitude toward static equilibrium economics, and a focus on the role of entrepreneurship and free markets in advancing the economy.

The theories proposed by these three thinkers constitute the lion's share of evolutionary thought in economics up to the present time (leaving aside game theory; see Witt 2008b). And the breadth of the topics and phenomena they cover testifies to the great variety of interpretations and potential uses of evolutionary concepts in economics. Indeed, each adopted an idiosyncratic position in terms of method, focus, and general message. Menger, who made no explicit reference to the Darwinian theory of natural selection, advanced an "organic" view of the emergence of social institutions (p 578). Schumpeter overtly rejected the application of the theory of natural selection in economics, which, at the time, was negatively associated with nineteenth-century "social Darwinism." Instead, he elaborated a theory of industrial development based on the recurrent emergence and dissemination of innovations (note that in German, the same word is used for *evolution* and *development*). With Hayek, the evolutionary worldview received prominent expression. Inspired by the biological notion of group selection, Hayek sought to depict the rise of the free market as the result of an evolutionary process that favours groups whose rules of behaviour allow for maximum expansion.

The present chapter discusses the challenges raised by the inclusion of evolutionary elements in the theories of these three key figures of Austrian economics. The adjective *evolutionary* is used in a general sense, referring to systematic development over time, without confining it to the *theory* first expounded by Charles Darwin. This allows us to include Menger and Schumpeter in our analysis although strictly speaking, only Hayek's *theory* can be considered to have a clear connection with a common understanding of evolution. We begin with a review of Menger's *theory* of institutional evolution and the particularities of the explanation he advanced in his historical analysis of money. Next, we focus on Schumpeter's theory of industrial development and contrast it with ulterior views in neo-Schumpeterian literature. The third section turns to Hayek's *theory* of cultural evolution, in which the predominant position devolved to group selection led some

to question the strength of Hayek's adherence to the principle of methodological individualism. The conclusion offers a preliminary evaluation of the possible role of evolutionary theorizing in the future development of Austrian economics.

Carl Menger (1840–1921) gained prominence as founder of the Austrian school of economics through the *Methodenstreit* ("method dispute") with the German historical school. It was in this context that Menger's opponent, Gustav von Schmoller, introduced the designation *Austrian economics*, to which he attached a pejorative connotation. This is not the place to discuss in detail the *Methodenstreit*. Suffice to say that it revolved around the issue of whether to assign priority in economics to deductive theorizing, as Menger proclaimed, or to historical and statistical inductions, as Schmoller and his followers advocated. Although Menger weighed in on the theoretical side, giving little room to historical and cultural specificities in economic reasoning, his reflections on the genesis of social institutions involved what might be described as a historical-evolutionary perspective. Menger was interested in the causes and mechanisms that lead to the spontaneous emergence of social institutions. His special focus was on the institution of money (Menger 1892; 1909), yet he claimed that his analysis could be extended to explain the emergence of other social institutions such as customs and manners, the law, the price mechanism, language, and even the formation of states in the course of history (Menger [1883] 1985, book 3).

Menger's study of money had a double objective. On the one hand, he wanted to examine the various advantages of money as a medium of exchange. Among these advantages he counted among them the facilitation of trade, the simplification of transfers of purchasing power, the preservation of value, the possibility of wealth accumulation, and the easy measurement of exchange ratios. On the other hand, Menger (1892, 241) sought to provide an account of the genesis of money by explaining "how it has come to pass that certain commodities ... should be promoted amongst the mass of all other commodities, and accepted as the generally acknowledged media of exchange." This double-pronged analysis corresponds to the distinction in modern evolutionary biology between proximate and ultimate causes. Proximate causation explains biological function in terms of immediate physiological or environmental factors, while ultimate causation explains biological traits in terms of evolutionary forces, such as natural selection (Mayr 1961; Tinbergen 1963). Menger's first object of study, the various functions of money, can be viewed as providing a proximate explanation in economics for how and why a monetary medium works. His attempt to offer a causal explanation for the emergence of the social institution of money is tantamount

to giving an ultimate explanation not only of the functions of a medium of exchange but also of how these functions mattered for its coming into being. Since ultimate explanations are the core concern of evolutionary theorizing, Menger's explications of the latter kind are pertinent to our discussion.

Menger ([1883] 1985, book 3) maintained that money is an "organic" institution. This means that it is originally not the result of a deliberate creation by some authority (although authorities my later regularly modify, regulate, and legitimate this medium of exchange). Explaining the origins of money requires, therefore, understanding how a commodity comes to exist in a spontaneous manner as a commonly used medium of exchange. Menger believed the answer lay in the basic problem faced by anyone who wishes to engage in barter: an initial offer rarely meets with an equivalent counteroffer that exactly matches the first party's desires. If an exchange is to take place in such a situation, a loss (unrealized value) would usually have to be incurred. To avoid such a loss, one can engage in a chain of barters in order to eventually obtain what one wants in return. In such a scenario, Menger argued, it is advantageous to barter for commodities that are traded frequently and qualify as intermediaries because they are easy to measure, compare, store, transport, and – most important – exchange again. In Menger's (1892, 248) words, "each individual would learn, from his own economic interests, to take good heed that he bartered his less saleable goods for those special commodities which displayed, beside the attraction of being highly saleable in the particular locality, a wide range of saleableness both in time and place." In a detailed historical examination, Menger (1909) explored the different commodities that have served as money in different geographical conditions.

Menger's explanation of the spontaneous evolution of money thus puts methodological individualism to work. He hypothesized that individual agents take advantage (p. 579) of the differential "saleableness" of a commodity or, for that matter, its fitness in serving as a medium of exchange for other commodities. If the agents assess this "saleableness" (along with other fitness features) similarly, the "fittest" commodities are likely to eventually be the ones used most frequently in facilitating chains of barter. In a region in which frequent barter takes place, it would then make sense to adopt the commodity most commonly used as the medium of exchange. Accordingly, Menger (1892, 249) emphasized habit as the "highly significant" factor "in the genesis of such generally serviceable means of exchange." Thus, in a self-perpetuating manner, a social institution such as money can emerge as the most conveniently tradable medium, given the acquired habit to use it and the expectations of future trading partners.

Compared with theories of social evolution that reduce all notions of fitness to the biological measure of reproductive success, Menger's account of the origins of money seems remarkably sophisticated. In his theory, the "adaptive value" of money as an institution is not determined by increased survival and reproduction chances. It is represented instead by efficiency gains that are realized individually in repeated transactions. Naturally, in early stages of human development, realizing such efficiency gains must have had a positive effect on survival and reproduction. But this is not part of Menger's explanation. Nor can it be claimed to be the reason for which money endured. Its "selection" lies in the properties of money as an institution that allows individual agents to save transaction costs. Since such saving turns out to be the most efficient by adopting a universal medium of exchange, money emerged and prevails. This type of reasoning exemplifies Menger's method, which seeks to connect the causes of a phenomenon to its origins and manner of development.[1]

Although historical studies as such are not central in Menger's oeuvre, they are significant for his methodology (Menger [1883] 1985, book 3). Menger wanted to delve into the ultimate causes of the evolution of social institutions, which he attributed to the specific motivations of individual behaviour. This behaviour, he argued, led to a collective outcome that was not the deliberate aim of the acting individuals in the first place. Accordingly, Menger juxtaposed "organic" institutions such as money with "pragmatic" institutions, which are deliberately created by some individually or collectively designed plan (Menger [1883] 1985, book 3). However, Menger's explanation of organic (i.e., spontaneously emerging) institutions rests on a critical assumption. He assumes that the interacting agents make choices that do not involve conflicts of interest between them. While in the case of money this assumption may be justified, it isn't necessarily warranted in other cases.[2] Typical situations in which the condition is not met, and in which Menger's explanation of spontaneously emerging institutions does not work, are social dilemmas. The question of whether and how they can be circumvented in an organic, bottom-up (p. 580) manner occupies much of the analysis of institutional evolution in recent times (e.g., Ostrom 2014).

Schumpeter's Theory of Economic Development

Unlike Menger, Joseph Schumpeter (1883–1950) is not usually considered a patron saint of Austrian economics. However, as far as Schumpeter's early works are concerned, there are good reasons not to exclude him from

the Austrian school (see Simpson 1983). Schumpeter received his education from, and was strongly influenced by, Menger's successors Friedrich von Wieser and Eugen von Böhm-Bawerk. He was as much an advocate of methodological individualism as Menger before him, although the subjectivism of individual decision-making – often taken to be another characteristic of Austrian economics (see Boettke 1994, 4) – had minor relevance for Schumpeter's thought. Note, however, that for Menger, too, subjectivism did not have the same canonical meaning it would later receive in the theories of Ludwig von Mises and his students (see Streissler and Streissler 1994, 9). While the methodologies of Menger and Schumpeter can be seen to present some affinities, their political opinions differed significantly. If the free-market credo is considered the decisive criterion for membership in Austrian economics (see Rizzo 1992), Schumpeter is likely to be left out. But from an academic point of view, there is a clear link between Schumpeter's early interest in development – to which the present discussion will be confined – and positions usually associated with Austrian economics. Core concepts of Schumpeter's ([1912] 1934) theory of development such as entrepreneurship, innovativeness, and the rejection of an equilibrium representation of a market economy, were later shared by almost all proponents of the Austrian school, some interpretative differences of the details notwithstanding.

Schumpeter made his first appearance on the Austrian academic scene with a habilitation thesis (Schumpeter 1908), submitted to the University of Vienna and approved by his teachers Wieser and Böhm-Bawerk. It presented a review of contemporary economic theories, including, among others, those of Irving Fisher, Alfred Marshall, Arthur Pigou, and Léon Walras. These theories, Schumpeter claimed, depict the economy in a state of equilibrium. Such a characterization contrasts with the Marxist tenets of an unstable development of capitalism, which Schumpeter knew well from debates in university seminars and in various student circles in Vienna. His personal experience must have also been at odds with the equilibrium representation. Schumpeter's father was an entrepreneur during the peak of industrialization of the Austro-Hungarian empire, a time when the actions of single individual promoters were visibly transforming the economy.

Schumpeter's examination convinced him of the need to look for a substitute for the counterfactual equilibrium assumption of contemporary theories. Indeed, two years after the defense of his thesis, he published an article titled "On the Essence of Economic Crises" (Schumpeter 1910), in which he proclaimed that the dynamics of the capitalist engine originate from entrepreneurial activity. This alternative view put forward the hypothesis that

incessant innovative change "from within" the economy is the endogenous cause that disrupts an equilibrium when such a stationary state is reached. Schumpeter's article anticipated the main argument of his path breaking *Theory of Economic Development* ([1912] 1934), according to which capitalist progress is an innovation-driven process with a peculiar cyclical structure (see Witt 2002 and Andersen 2009 for discussion). The growth phase begins when pioneering entrepreneurs accomplish a major innovative breakthrough, which induces a multitude of less innovative entrepreneurs to engage in imitative activities. This causes heavy investments, multiplier effects, and eventually a boom. After the wave of imitations fades out, the overcapacities that were built up result in profit erosion, and the volume of investment breaks down. A period of economic adjustment – a depression – occurs before the economy returns to a state of equilibrium. The difference between the new state of equilibrium and the older one indicates economic progress. The next cycle of growth begins when a new major innovation is introduced.

The business cycle framework that Schumpeter chose for his theory of innovation-driven capitalist development was quite popular at the time. It was a new and promising field of research in which *other* members of the Austrian school, including Mises and Hayek, engaged and gained much of their reputation (Haberler 1937). What was unique in Schumpeter's contribution was the specific use of the business cycle for attacking the heuristic bias of the equilibrium concept at the heart of mainstream economic theorizing. No other economist in the Austrian school has been more determined to overcome the limitations of the equilibrium heuristic, as is evident in the seventh chapter of the *Theory of Economic Development* (Schumpeter 2002).[5] In this chapter – a kind of epilogue – Schumpeter points to the analogy between a market economy in an evenly rotating state and a gravitating physical system such as Newton's representation of the planetary system. Disturbances of systems of the latter kind can occur only through exogenous forces affecting the gravitational field. In economics, exogenous forces such as natural disasters or military invasions (i.e., forces not usually subject to economic explanations) can, of course, also affect a capitalist system. However, the key to understanding economic development is the endogenous force of entrepreneurial innovativeness. On the basis of this premise, Schumpeter put forward a new method for economic analysis: the developmental method.

The developmental method differs from equilibrium analysis and comparative statics in that it focuses on the process of unfolding of the economy. This process is described as an incessant sequence of fundamental economic innovations, which, after their occurrence, disseminate throughout the econ-

omy and, in so doing, transform it. Schumpeter (2002, 95) explicitly states that the developmental method "has neither formal nor material connections with the biological development of any organic body." Nor was it his intention to evoke "evolutionary analogies or theorems" (107) with reference to Darwin's biological theory. In fact, Schumpeter considered the Darwinian theory of evolution to be irrelevant for the economic domain and did not rely on it, not even metaphorically. This manner of reasoning may appear alien to the modern reader, given the strong impact of Darwin's biology on our understanding of evolution. Nowadays, wide use is made of analogies and metaphors borrowed from biology to explain various phenomena in the human and social sciences. The "universal" or "generalized" Darwinism advanced by some (Dawkins 1983; Hull 2001; Hodgson and Knudsen 2010) is the strongest version of the claim that the general principles of evolution apply outside biology.[6] But Schumpeter took a different path (see Witt 2003) and offered an original theory of economic evolution/development.

The fact that Schumpeter did not appeal to the principle of natural selection in his analysis sets him apart from the neo-Schumpeterian literature (e.g., Hanusch and Pyka 2007) that follows in the footsteps of Nelson and Winter (1982). The theory proposed by Nelson and Winter focuses on the consequences of competitive innovative activities at the level of firms and industries (while completely abandoning Schumpeter's macroeconomic business cycle framework). Drawing on the notion of bounded rationality (see Simon 1972), Nelson and Winter (1982, chap. 5) argue that firms rely on rules of thumb and organizational routines in their internal interactions. In other words, routines determine activities such as the planning of production, the calculation of costs, setting prices, allocating R&D funds, and so on. These routines form a reservoir of alternative modes of action within an industry in a manner analogous to the different genotypes that exist in the gene pool of a population. The specific decisions resulting from applied routines can be perceived, according to Nelson and Winter, as the equivalent) of phenotypes. If these phenotypes have a positive effect on the firms' overall performance, the routines that underlie them will be favoured. Thus, the differential growth of firms translates into a corresponding recomposition of the routines in an industry's routine pool following the principle of natural selection: the more successful routines will become more frequent, the less successful ones less so. In this sense, firms and industries adapt to their competitive environment and evolve.

The problem with Nelson and Winter's assumption of inert organizational routines, which is necessary for obtaining the kind of systematic adaptation or evolution they describe, is that it stretches the concept of

bounded rationality so far that human agency seems to have no role. Deliberate change of individual behaviour, on which routines are based, is completely negated, as if the agents were mindless and unable to respond to subjectively perceived poor performance of routines. The analogy to natural selection thus induces a systematic heuristic bias. It ignores the agents' perceptions and inferences. Such a move may be legitimate in evolutionary analysis of behaviour that is genetically determined (e.g., studies in behavioural ecology). But when analysing human decision-making, the role of cognition, subjective deliberation, and learning cannot be disregarded, even though the agents' perceptions and inferences are far from perfect. Unlike his followers, Schumpeter chose to attribute a decisive role to individual deliberation in his depiction of pioneering innovators and their imitators as the drivers of economic development. As a result, his theory is not subject to the same criticism that can be levelled against neo-Schumpeterians.

Schumpeter, however, failed to do full justice to an important aspect of his theory, which figures prominently in the literature affiliated with Austrian economics: the role of novelty (Shackle 1979). In a somewhat artificial manner, Schumpeter distinguished invention (the emergence of an economically relevant novelty) from innovation (the carrying out of an existing novel action opportunities not tried before). He assumed that ideas about new action opportunities are abundant, that is, exist independently of any actions performed. An explanation of how novelty is being created, and why, is not part of Schumpeter's theory. But by making novelty an exogenously given resource, the important sphere of subjective mental processes such as the searching for, the discovery of, and the experimentation with new possibilities is ignored, as is the exploration of the respective individual motivations that drive these activities. Since the emergence of innovations crucially depends on the emergence of new action opportunities in the first place, Schumpeter's evolutionary mechanism remains incomplete. It lacks a satisfactory account of the emergence of novelty as an enabling factor of economic development.

It is true, of course, that the inclusion of the emergence of novelty in the explanatory domain of any theory faces an epistemological constraint or, as Shackle (1983) once put it, "bounds of acknowledge." Even if the mental processes by which novelty is created or discovered were fully intelligible (which they are not; see Witt 2009), because of the very nature of novelty, the revelation of its meaning would have to be awaited. Neither the meaning of novelty nor its implications can (fully) be anticipated. This situation raises an important question: if searching for, and experimenting with, novelty is an endeavour with unknown outcomes, why do agents en-

gage in such activities? One explanation would be that they act on the basis of subjective expectations that, lacking any experiential basis, amount to prophecy and wishful thinking. An alternative hypothesis refers to individual proclivities such as alertness (Mises [1940] 1949, 252–256; Kirzner 1982) or curiosity; that is, a preference for experiencing the thrill of novel stimuli, which may even be innate. Such a hypothesis can explain not only the motivation to experiment but also individual differences in the search for novelty. Yet another hypothesis, situational rather than personality-related, refers to the motivation to seek novelty under certain conditions, such as intensified competitive pressure, economic crisis, or the general need to look for alternatives when no satisfactory modus operand is available.

It is important to note that the motivation to search for, and experiment with, novelty idles if hard or soft institutional constraints discourage or inhibit the realization of promising novelties as innovations. Conservatism, taboos, religious beliefs, and fear of the new are all discouraging factors. Regulations and political bans can likewise prevent novelty-seeking action. Conversely, in free-market environments, competitive pressure caused by the innovations of rivals can lead to a self-amplifying process. An industry or even a whole economy with intense innovation competition can stimulate the search for novelty and thus encourage further innovative activity. The divergent evolutionary paths that different economic systems have taken in history bear witness to the impact of institutional constraints in situations where the motivational conditions were arguably quite similar. Alas, Schumpeter's silence on the issue of the emergence of novelty prevented his theory of industrial evolution from accounting for these important institutional contingencies.

Hayek's Theory of Cultural Group Selection

Like Schumpeter, Friedrich A. Hayek (1899–1992) was also a student of Wieser. His real mentor, however, was Mises, whose critique of socialism (Mises [1922] 1936) persuaded Hayek to abandon his youthful Fabian inclinations (Hayek 1992, 127). Mises argued that in the absence of freely adjusting prices in competitive markets, there could be no way to compare the costs of production or to evaluate revenues and detect scarcities. As a result, the data required for economic calculation by a central planning authority (i.e., what to produce, how much to produce, and in what manner) are unavailable. Mises concluded that the feasibility and progressiveness of socialist ideas were therefore an illusion. Although Hayek adhered

to Mises's conclusion, he was critical of the latter's overreliance on rationalism and a priori principles in the critique of socialism. Indeed, Mises later ([1940] 1949) defined economics as the science of human action or "praxeology," that is, a science of the "pure logic of choice," which guides rational individuals in pursuit of their ends. He was not interested in explaining empirically observable, and (p. 585) potentially fallible, economic behaviour. This, Mises held, was a task that should be left to psychology.

Hayek was sceptical of Mises's attempt to explain the market process "through pure ratiocination" (Mises [1940] 1949, 39). To him, an account of the market process based on the choices of market participants necessitated empirical proof and could not be assumed a priori valid (see Kresge and Wenar 1994, 72). If it were indeed possible to reconstruct the actions of all market participants by mere ratiocination, why should a socialist planner not be able to take advantage of this tool for making a central plan? The desire to find a remedy for the problem raised by Mises's approach induced Hayek to reflect on the role of knowledge in the market process and in economics in general. This question and, more specifically, the various implications of the claim that knowledge is incomplete and fallible are the red threads that run through Hayek's entire opus, from his seminal paper on "Economics and Knowledge" (1937) to his Nobel Prize lecture, "The Pretence of Knowledge" (1975). Explaining what knowledge consists of and how itis obtained and processed was fundamental, in his eyes, to understanding the conditions under which the free market would provide desirable results. Hayek's investigation in this domain included a detailed examination of the workings of the mind in *The Sensory Order* (1952). This psychological study helped Hayek hone his views on evolution and the emergence of spontaneous orders (Kresge and Wenar 1994, 153) and the emergence of spontaneous orders (Kresge and Wenar 1994, 153) and provided an important background for the theory of cultural evolution he would later develop.

The gist of Hayek's theory lies in the claim that the market order emerged as the result of a process of selection of cultural practices that operates on the level of the group rather than the individual. The inspiration for this idea came from the works of zoologists Alexander M. Carr-Saunders and Vero C. Wynne-Edwards (Hayek knew the former personally; the two were colleagues at the London School of Economics). In their writings, Hayek (1967, 70) found the hypothesis that all individuals of a species will behave in a certain manner "because groups of individuals which have thus behaved have displaced those which did not do so." Carr-Saunders promoted this idea, known as "group selection," in a book titled *The Population Problem* (1922). He argued that every human population has an optimal size in

which return per capita is maximized. The population problem refers to the necessity of regulating demographic increase so that the optimal size is not exceeded. Carr-Saunders believed this was done through a process of group selection. According to his theory, groups that adopted customs that served to regulate the number of members close to the optimal level have had an advantage over groups with less advantageous customs. His examples for such customs were practices of reproductive restraint such as infanticide, abortion, or sexual abstinence. These practices, which can be observed even outside so-called primitive societies, cannot be explained through a selection that maximizes individual reproductive success and therefore require, according to Carr-Saunders, a group selection explanation.

The theory proposed by Carr-Saunders was elaborated further by Wynne-Edwards (p. 586) in his treatise *Animal Dispersion in Relation to Social Behaviour* (1962). Wynne-Edwards maintained that groups of animals that exhibit the kind of behaviour that helps control their population size and density, and thereby avoid overexploitation of resources, were favoured by natural selection. His theory was fiercely attacked by George C. Williams (1966) and rejected by most biologists until relatively recently (Sober and Wilson 1998; Borrello 2010). Hayek was aware of the rising criticisms against group selection, which occurred around the time he elaborated the details of his own theory, but was not discouraged by them. He contended that although group selection may not appear as important as it has been considered in biology, there is no doubt that it is of the greatest importance for cultural evolution (Hayek 1979, 202).

Moreover, turning Carr-Saunders's argument on its head, Hayek claimed that cultural group selection actually favours an increase in population and wealth rather than limited reproduction. In other words, cultural evolution leads to the selection of groups whose rules of conduct (or "informal institutions" more generally; see Schubert and Wangenheim 2006) lead to prosperity and demographic expansion either through greater reproduction or through the inclusion of immigrants.

To backup this hypothesis, Hayek proposed the following scenario. During the longer part of our species' history – approximately fifty thousand generations – humans lived in small bands of fifteen to forty people (Hayek 1979, 160). This type of social existence was conducive to the development of solidarity and altruism since the members of small bands knew one another, trusted one another, and had shared goals and aims that coordinated their activities. But over the past one hundred to five hundred human generations, living conditions changed dramatically. Modern civilization, which Hayek called the "Great Society," is founded on an extended

order of widely anonymous markets with millions of participants. There is thus a rift between the "natural morality" of solidarity and altruism, which evolved in response to the living conditions of the "face-to-face troop," and the principles that regulate cooperation in modern society For this modern society to develop, a new morality had to emerge, one better suited to expansion and to the coordination of largely anonymous interactions of many individuals with different goals and aims. This new morality required de facto repression of the former. Its tenets – for example, the recognition of (private) property, contract compliance, free competition, and the admission of profits and income inequalities – were all "breaches of that 'solidarity which governed the small group".

Hayek explained that the feelings of guilt or envy that often accompany material success in modern societies are in fact vestigial, atavistic remnants of a bygone era whose morality disserves the Great Society. He thus portrayed cultural evolution as producing results that do not appeal to our inherent sense of justice. That such a new morality nonetheless evolved, and with it the extended order of the markets, was the consequence of cultural group selection. Morality, Hayek specified, is tied to the rules of conduct and customs that one follows in interactions with other group members. The selection he had in mind operated on these rules and customs, not on individual behavior. Together they formed what Hayek (1979, 153–176) called "tradition," which he depicted as a layer lying "between instinct and reason." Rules of conduct are therefore neither inborn nor (p. 587) the outcome of deliberate design. They are acquired by, and transmitted through, imitation without much cognitive reflection by those who adopt them. Since groups that achieve greater economic success will flourish more than others, their corresponding rules of conduct (morality) will be passed on to a greater number of individuals. On average, the mass of individuals who follow these rules will increase until the rules of conduct that lead to expansion will eventually prevail over all other rules and become the fixtures of the most extended civilization. Because, according to Hayek, the more successful rules and morals were exactly those conducive to the emergence of free markets, his theory illustrated how a process of selection favouring group expansion resulted in this type of social order.

Hayek's theory echoes Menger's hypothesis concerning the spontaneous emergence of social institutions. Similarly to Menger, Hayek did not see the individual agents as arriving by insight at a collective agreement on a cooperative framework. According to both economists, extended cooperation arose inadvertently, as the side effect of individual striving for economic well-being. But Menger's description of how the parallel actions of individu-

als involved in barter lead to the emergence of money did not explain more generally how social institutions emerge. Hayek, for his part, intended to offer such a general explanation by employing the idea of cultural group selection. He postulated that social institutions emerge as the result of a selection favouring the most successful groups in terms of size and wealth. Because groups are defined through the rules and customs they follow, the selection of groups was, at a final instance, the selection of specific rules of conduct. Hayek's recourse to the notion of group selection led some to question the strength of his commitment to the Austrian principle of methodological individualism (e.g., Vanberg 1986; Boettke 1990; Hodgson 1991; Hodgson 1994; Whitman 1998; Caldwell 2002). It is indeed not obvious who is the *agens movens* of Hayek's hypothesized evolutionary process. If groups are the unit of selection, in what sense can individual behaviour and subjective intentions still be viewed as the motor of this evolution?

While Hayek seems to assume that all individuals strive to improve their economic well-being, it is not clear to what extent he acknowledges that this striving can take the form of conflict and clash of interests so that the collective outcome is not necessarily the increase of economic prosperity. Modern research claims that individual motivation to improve one's situation is an insufficient *agens movens* for bringing about the extended order of free markets and the prosperity they are presumed to entail. Besides the development and command of improved technological knowledge (a factor neglected in Hayek's analysis), institutional constraints that channel potentially conflicting individual ambitions into cooperative forms seem to be the guarantors of prosperity and growth (Birdzell and Rosenberg 1986; North, Wallis, and Weingast 2009). Although the dilemma of conflicting individual interests is not directly addressed in Hayek's reflections, his theory of group selection could be extended to provide a solution to the institutional problem. One would then need to explain how rules of conduct reducing or preventing conflict emerge and can be preserved within some groups and how selection forces effectively favour groups with such rules. In any case, it is clear that the appeal to group selection in Hayek's theory (p. 588) transcends the principle of methodological individualism and undermines the reliance on individual reasoned behavior.[7]

In fact, in Hayek's most detailed account of this theory (1988), the attack on the "fatal conceit" of those who want to replace the evolved free-market order with the socialist ideal of a rationally designed economy takes an overt anti-rationalist stance. The advocates of rational design do not comprehend the limits of their cognitive abilities, Hayek warned, nor does what they propose contradict the mode of development of modern

civilization. Their demands for distributive justice may be "instinctually gratifying" since they are "based on primordial emotions" of solidarity. But a realization of their plans would effectively destroy the material foundation of progress, condemning billions to death and the rest to impoverishment (Hayek 1988, 120). This conclusion fits Hayek's political agenda, but it does not necessarily follow from his evolutionary theory. Indeed, this theory remains the most controversial part of Hayek's entire opus and continues to draw criticism for leaving many questions open (Gray 1984; Steele 1987; Vlieghere 1994; Witt 2008a; Marciano 2009; Beck 2012; Vanberg 2014).

Conclusion

In this chapter, we briefly reviewed the evolutionary elements (broadly conceived) in the contribution of three key figures of the Austrian school: Menger, Schumpeter, and Hayek. Beginning with Menger, we argued that an interest in evolutionary reasoning (though not designated as such) could be gleaned from Menger's theory of "organic" social institutions. In our examination of Menger's study of money, we distinguished between, on the one hand, his analysis of the various functions of money and, on the other, his effort to detect the roots of this social institution. We compared this distinction to the difference between proximate and ultimate causation in modern evolutionary biology. With regard to ultimate causation, which refers specifically to evolutionary forces, Menger traced the origins of money to the combined interest of individual agents to save on transaction costs. Key to his explanation was the emphasis on spontaneity and lack of design in the emergence of money. Menger described the mechanism by which money became a common medium of exchange as the result of parallel and similar choices of agents that lead to a special form of unorganized collective action with an unintended outcome.

The focus on causes and mechanisms in the evolution of economic phenomena is also a major feature in Schumpeter's early writings. Similarly to Menger, Schumpeter did not seek to connect his analysis directly to the Darwinian theory of evolution (in fact, he was openly opposed to doing so) and elaborated instead an independent (p. 590) theory of development. This theory accounted for the unfolding of industrial capitalism through the principle of recurrent emergence and dissemination of innovations. Schumpeter identified the causes of economic development in the motivation of pioneering entrepreneurs to find new ways of organizing the economy, followed by the profit-seeking imitative activities of less innovative entrepreneurs. We

claimed that unlike Schumpeter, posterior neo-Schumpeterian efforts (e.g., Nelson and Winter 1982), which attempt to explain the success of firms through appeal to the natural selection of fitter routines, tackle in unsatisfactory manner the issue of human agency.

What role individual reason plays in cultural evolution is also a thorny question in Hayek's theory. Unlike Menger and Schumpeter, Hayek fully embraced evolutionary arguments in his explanation of the rise of the free market. But he interpreted the concepts he borrowed from biology in his own, heterodox way. Using the notion of group selection, Hayek maintained that cultural evolution favours the groups that expand the most and leads to the selection of the rules of behaviour that correspond to the free market. This theory meant to buttress Hayek's attack on the various attempts to redesign society through rational reforms along the lines of socialist ideals. He proclaimed that such proposals run counter to the development on which the prosperity of modern civilization depends. But Hayek's evolutionary account left many questions unanswered and drew criticism regarding the tension between the hypothesis of group selection and the principle of methodological individualism.

One might wonder what lessons can be learned from the inclusion of evolutionary elements in the Austrian perspectives outlined above. Does such a move hold potential with respect to the future development of Austrian economics? It would be inappropriate to offer, at this point, a definitive evaluation of the highly variegated positions adopted by Menger, Schumpeter, and Hayek. We would like to note, however, a common feature that they share. All three break new ground in directions that transcend the narrower agenda defined for Austrian economics by Mises and his students and followers (see Rizzo 1992; Boettke 1994). Those who limit the label of Austrian economics to the Misesian canon of concepts and political tenets may find it hard to accept as distinctly Austrian many of the extensions and modifications introduced by Schumpeter and Hayek. Other scholars identifying themselves with Austrian economics may be sympathetic with them.

Austrian economics thus encounters a dilemma that is characteristic of the development of schools of thought and paradigms in general. Adherents of a school can choose a conservation strategy that sharpens the contours and the identity of their school but also narrows down its ability to break new ground. Or they can vote with their research agenda for a progression strategy, which extends the range of topics, concepts, and methods and allows cross-breeding with other intellectual influences. Such a strategy might help push the creative momentum but it runs the risk of undermining the identity of the school. If one may speak of a lesson to be learned here,

it is perhaps this one: in the future, adherents of Austrian economics will have to choose between a conservation strategy and a progression strategy. The evolutionary theories of Menger, Schumpeter,) and Hayek offer exciting possibilities for the latter. It can even be argued that the evolutionary agenda is likely to be one of the most promising avenues for expanding and reframing the canon of Austrian economics. Yet it cannot be denied that the variations and extensions involved in such a new canon may challenge and condition received views of Austrian economics even more than Schumpeter's and Hayek's theories already did. The open question would then be to what extent and how Austrian economics can maintain its brand identity.

NOTES

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[1] Menger's method has come to be dubbed the "causal-genetic explanation" by his academic successors; see Cowan and Rizzo (1996).

[2] Indeed, modern attempts to model Menger's explanation of the emergence of money use convention or coordination games in which no rivalry is present (see Jones 1976; Wärneryd 1989).

[3] Unlike Schumpeter, Menger took a reductionist approach even with respect to preference subjectivism. He tried to explain in objective terms the motivation to act by recourse to the satisfaction of human needs and wants (see Menger [1871] 1981, chap. 2). As noted below, further doubts about the role of subjectivism and methodological individualism in Austrian economics arise with respect to Hayek's theory of cultural evolution and his group selection hypothesis.

[4] Menger held quite radical minimal-state views regarding economic policy, as the notebooks of his private lectures to the Austrian crown prince reveal (Streissler and Streissler 1994, 17). In contrast, Schumpeter was more critical of free-market capitalism and, particularly in his later publications, not as determined to denounce Marxist ideas as his former classmate Mises. His partly polemic prophecy of the decline of capitalism and the transition to socialism (Schumpeter 1942) is indicative of a development that distanced him further from Austrian economics (see also Schumpeter's review of Hayek's *Road to Serfdom* in Schumpeter 1946).

[5] The seventh chapter was omitted from all later editions of the book and also from the English translation. It was translated and published in English only recently (Schumpeter 2002). The reason for the omission is unclear. Some of the material in the chapter, particularly the reflections on how classical economists interpreted capitalism, seems to have been reserved for further development in Schumpeter's encompassing theory of capitalism (Schumpeter 1942).

[6] Fora critique of this view, and specifically the reduction of evolutionary theory to the three principles enunciated by Campbell (1965) – variation, selection, and retention – see Levit, Hossfeld, and Witt (2011).

[7] Hayek (1960, 36) was quite explicit: "The ultimate decision about what is good or bad will be made not by individual human wisdom but by the decline of the groups that have adhered to the 'wrong' beliefs." Such a position is irreconcilable with Mises's praxeology.

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