

Richard R. Nelson
Columbia University

It is a privilege to be asked to write a piece for the “Economic Classroom”. I want to use this opportunity to explain to a Japanese readership just what the “evolutionary economics” that I have been associated with is all about.

The basic perspective was laid out in my 1982 book with Sidney Winter, An Evolutionary Theory of Economic Change and subsequently has been further developed by a number of economists. There are two major reasons why we evolutionary economists have broken away from the neoclassical economic theory that is standard in the field. First, following Schumpeter we are persuaded that the basic assumptions of neoclassical theory abstract away the key feature of modern capitalist economies, which is their dynamism, and the remarkable economic progress they have engendered. Second, even in the areas where neoclassical theory seems to generate conclusions consistent with the empirical reality, it is widely recognized that the behavioral assumptions of that theory are highly unrealistic. We evolutionary economists have been trying to develop a mode of economic theorizing that can illuminate the dynamical processes that are the most important fruit of capitalist economic organization, using assumptions that seem basically consistent with what is known about the capabilities and behavior of economic agents. I lay out below the basic features of evolutionary theory that differentiate it from the neoclassical brand.

First, the central focus is on processes of long run economic change. It's perspective on what is driving change is Schumpeterian, in that innovation is seen as the key force. The changes going on are not predictable in detail, and many economic agents are operating in contexts they had not expected and which are new to them. This is so both for those who have innovated, and those who have not. This orientation to economic dynamics, and the associated perspective on the normal state of economic activity, obviously stands in sharp contrast with the focus on equilibrium conditions which provides the core of neoclassical theory.

Second, within evolutionary theory economic agents are seen as purposive, and intelligent, often sophisticated, regarding what they are doing, but their rationality is bounded in the sense of Herbert Simon. That is, the actual context in which they are operating is several degrees more complex than their understanding of it. Yet they have to cope, somehow. To a considerable extent, therefore, the behavior of economic agents is governed by a set of routines with which they are familiar and which in the past have proved satisfactory. But economic agents also have the capability for trying something new, innovating, when they recognize that what they are doing is not working well, or where they think they see a promising opportunity. And in industries and contexts where some of the economic agents are innovators, others may be forced to be also in order to survive. This perspective on the "rationality" of economic agents obviously is very different than the rationality of neoclassical theory.

Third, these boundedly rational agents generally have different ideas about what is the best thing to be doing, and the variety of these perspectives and behaviors plays an important role in the development of the economy. Through selection on this variety, a

well functioning economic system transcends the limitations of human rationality at the individual level. There are a number of different mechanisms that “select on” what economic agents are doing, and sometimes on the economic agents themselves. These mechanisms include market competition, but also individual and group learning, and in some cases political process. By inducing continuing efforts at innovation, and with selection bringing in the best of the new and damping out the relatively ineffective, capitalist economic organization has proved to be a powerful “engine of economic progress”.

I want to stress that modern evolutionary economics should not be understood as simply the adoption of evolutionary theory in biology for analysis of economic phenomena. While I believe that there are a number of things evolutionary economists can learn from evolutionary biology, I also believe it important to recognize clearly the differences between the processes of economic evolution and those of biological evolution. In particular, as I have stated above, while evolutionary economists correctly assume that human rationality is bounded, it is important not to underplay the importance of the role of human (and organizational) purpose, and often considerable knowledge, in guiding action.

These elements obviously are central in the activities that have brought us the technological revolution that has been achieved for example in information technologies, or modern medical practice. Evolutionary economists recognize and study how human sophistication guides and gives power to human action in a field of activity. But evolutionary economists, unlike neoclassicalists, also recognize, and highlight, the uncertainties that are involved in taking action in fields like these, the fact that many

efforts fail, that winners and losers are largely determined in actual competition rather than in ex-ante calculation, and that human progress in these and other fields is won through the cumulative efforts of many economic agents.

While focused on the sources and mechanisms of economic progress, evolutionary economics also highlights that Schumpeterian competition generates losers as well as winners. By putting a spotlight on the fact that in some cases the human cost of “progress” can be very high, evolutionary economics points to the moral need for public policies that work to mitigate these costs, while warning that such policies should be designed so as not to kill the dynamism of modern capitalism. Nor is there anything in modern evolutionary economic theory that proposes that the kind of innovation and selection that market competition induces always weighs appropriately all the relevant social benefits and costs. Indeed, evolutionary economics suggests the desirability of well designed regulation that influences the nature of the innovations generated and selected, as contrasted with damping innovation.

While clearly a major departure from the economic theory that has been dominant over the last half century, I see modern evolutionary economics as, in part at least, a renaissance of an old tradition in economics, which includes Adam Smith and many of the classical economists who followed him, who had economic growth as a central focus. The dynamic theory of the older classical tradition was largely evolutionary in spirit. This orientation was repressed in the neoclassical economics that gained ascendancy after World War II. But it has been clear for some time that many economists, particularly those studying competition in industries where innovation is important, or technological

advance more specifically, or behavior at the level of individual firms, or economic history more broadly.

Evolutionary economic theory has met a warm reception in several of these places. There now is a large literature on industrial competition and dynamics in “Schumpeterian” industries that is oriented according to the broad concepts and assumptions of evolutionary theory. A large share of the empirical studies that look in detail at technological innovation, or the development of particular technologies, are structured by evolutionary theory. There now is a large literature, empirical and theoretical, that is concerned with firm capabilities and firm strategies in context where innovation is important. Economic historians long have used the language of evolution, and the development of a coherent economic evolutionary theory has helped to sharpen up this language.

While neoclassical economics continues to provide the framework for educating graduate students in most universities, and is the norm for articles in most of the prestigious economic journals, over the past thirty years evolutionary economics has come a long way towards becoming an serious intellectual force in economics. There is reason to believe that its influence will continue to grow, and spread across nations . As the result of the hard work of Akira Goto, Atsushi Sunami, and Tatsuo Tanaka, a Japanese translation of An Evolutionary Theory of Economic Change will be published later this year.