

## EDITOR'S CORNER

KEN KOFORD

In an age of increasing academic specialization, Ken was of the last of a dying breed, a true renaissance man. His interests ranged far and wide: many fields within economics, as well as politics, all aspects of human behavior, languages, the natural sciences, art, and opera. Ken's *raison d'être* was the pursuit of knowledge, both for his own edification and to advance scholarship. When Ken assumed the editorship of the *Eastern Economic Journal* in 1999, he invested all his scholarly passion into the further development of the *Journal*. Even in the later stages of his life, he was determined to continue as editor, to assist other scholars, and to promote the development of a wide array of new ideas. In his last months, when he was no longer able to teach, he continued with his editorial work. He was determined to "die with his boots on," never flagging in his efforts to contribute. (Those authors who have had papers in process over the last year may have experienced some delays in the processing, but it was hard to take the *Journal* away from someone in his last days who was so devoted to his work.) In addition to his editorial work, he continued to organize sessions at the convention, even when it turned out that he was not physically able to attend and others had to present his papers.

We both knew Ken as a longtime colleague. He was a dedicated teacher and contributor to the University. He had a special way with students, always asking probing questions in an effort to help students think more clearly. He had an amazing ability to get students to respond and created an almost Socratic dialogue in his classes. He was always reading the papers of other colleagues and providing insightful comments. Shortly after his arrival at Delaware, he began coordinating a weekly seminar series in the economics department, which he led for many years. He contributed to many committees around the university, and had a special interest in curriculum matters.

In the early 1990s, he played a fundamental role in the University of Delaware's program in Bulgaria, after the university received a grant from USAID to provide economics and management training there. Later, he was a Fulbright scholar at Sofia University. In Bulgaria, he exhibited the same energy and involvement in teaching, research, and commitment to the enhancement of the intellectual environment there, as he did at Delaware. Sofia University granted him an honorary degree and the economics department has initiated a Ken Koford lecture series in his honor.

To commemorate Ken's contribution to the *Eastern Economic Journal*, we have asked his close friend David Colander to write about his experiences with Ken. As Colander points out "[h]aving him as a colleague was an education in itself." As his colleagues for more than 25 years, we would like to second that sentiment. Being around Ken was never dull. He was always presenting challenging ideas. The breadth of his knowledge was vast. (He was one of the few economists that we have known who both read extensively and also wrote. Later on, of course, he also edited.) It was

a rare seminar where he did not have something to contribute—no matter what the topic. These talents and interests he brought to his work at the *Eastern Economic Journal*. He will be missed.

The following pages contain the last of Ken's articles for the Editor's Corner. It is a good illustration of the breadth of his interests, his attempt to seek a really different avenue for understanding economics, and his ability to see the applicability to economics of writings in other fields. It is quintessential Ken.

James Butkiewicz, colleague and acting Editor

Jeffrey Miller, colleague and co-author

## GOULD AND MULTILEVEL EVOLUTION

**Ken Koford**

This past summer, I read Stephen Jay Gould's *magnum opus*, *The Structure of Evolutionary Theory* (which is big in more than one way, at 1,343 pages of text). I expected to learn something about controversies in evolution, and something about Gould. But to my surprise, there was something interesting about economics, too—both about the connection between economics and the theory of evolution, and about competition in a multilevel framework of institutions.

Probably all economists know that Darwin found an insight about natural selection—excess numbers of people and just some (“the fittest”) surviving—in Malthus. But Gould argues that more of Darwin's vision of evolution actually came from Adam Smith. If this is accurate, it shows a deep connection between the overall insight of economists—a competitive market economy that develops a deep kind of equilibrium order—and the evolutionary process, which also has a kind of competition and order.

Gould is highly critical of the continuity and gradualism in most evolutionary work; he found in his youthful research that there were discontinuities over time in species. A species would exist for hundreds of thousands of years without evident change, and then suddenly disappear, to be replaced with a substantially different species. (Some paleontologists have found the discontinuities for two hundred years; others, and Darwin, claimed that the jumps are just due to gaps in the historical data). He and Eldredge proposed the “punctuated equilibrium” model, in which there is a jump from one species to another. Since it was not obvious how a species could “jump” from one form to another without intermediate stages, this was extremely controversial. As Marshall quoted from Darwin, “*Natura non facit saltum.*”

In this book, Gould concedes that an evolutionary mechanism that would allow for punctuated equilibrium still has not been identified. His idea of a candidate mechanism is intriguing, though. A small share of a species lives in an isolated area, and under the different conditions there it develops some different qualities. It may become a different species, but in any case it has some different survival mechanisms. Occasionally, these different survival mechanisms turn out to be highly successful, particularly when some large environmental change makes it hard for the original species to survive. This candidate mechanism has some empirical support, but Gould notes that the “jump” from one species to another is on the order of 10,000 to 100,000 years, so there is plenty of room for gradualism as viewed by economists!

Thinking of how “outsiders” might influence technology, culture, and, for that matter, economic theory, Gould's description seems a nice analogy. There is a dominant perspective that does not change much because the different members have to interact, and they develop or impose a consistent view or technology. McCloskey has been criticizing this kind of dominant thinking in her *EEJ* column for many years. For significant change to occur, there has to be a minority view in a different, protected environment. Such a view will be “unorthodox” and, if it comes to ideas that solve problems unsolved by the dominant view, it could spread and succeed. Monetarism, then new classical macroeconomics, and, in a more microeconomic frame, behavioral finance and new institutional economics, might all be examples.

Gould's view is a lot like Robert J. Gordon's [2000] view of the economy—most industries are quite stable with little or no technical change; occasionally there are a few sectors that change dramatically and grow very rapidly. These sectors then can easily lead to the disappearance of some of the older stable sectors.

Most impressive and novel to me was Gould's multilevel model of competition. This model clearly is *not* widely accepted in evolutionary biology, though I felt there was more support for it in the ecology literature than Gould shows. He reacted against both the traditional Darwinian perspective that it is individuals that compete for survival, and the "selfish gene" argument that genes are the real competitors. To Gould, important competition had to be among species to obtain substantial and rapid change in the distribution of species. He also notes cell competition—particularly relevant to a man who died of cancer. Possibly even larger units, "clades," compete—like dinosaurs and early mammals.

An overall biological equilibrium in his view is one with four levels: gene, cell, individual, and species, all in equilibrium. The equilibrium has to keep each of these at a level consistent with the other levels. Each element at each level has tendencies to expand, following the Malthusian principle, and some checks that keep the particular unit in limit, usually by causing individual death, but also by reverse feedback mechanisms like those that fight cancer cells and keep individual genes from overreproducing themselves.

The individuals in a species cannot change as readily as traditional evolutionary theory suggests, because "evolution" requires changes at all of the four levels. Alternatively, some quite rapid changes in species could occur when two species that compete for an ecological niche develop enough differences in individuals, and particularly genes, that they compete in a new way, and one can out-compete the other. Also, inconsistency among the different levels could lead to fast changes. Gould gives an impressive chart of the possibilities of this sort of dynamic on p. 717.

What could this speculative structure for evolutionary biology mean for economists? Richard Nelson and Sidney Winter's *An Evolutionary Theory of Economic Change* [1982] already has developed a workable model much like Gould's concept. Firms compete and can be seen as individuals, but they are made up of "routines" that are like genes, which imply and constrain behavior. Firms expand with profits, and Nelson and Winter consider competition between firms that innovate and firms that are more conservative—like species competition. They even include random variation in the "routines" like R&D and see how these influence the firms and the market.

Oliver Williamson's [2000] description of the New Institutional Economics framework gives a four-level structure, from markets, to governance structures, to institutions, to norms, customs, and traditions. All of them can compete—through their effects on firms' success—and all need some degree of consistency for an economy to be effective. The overall picture looks like Gould's and like a cultural/institutional expansion of the formal structure seen in Nelson and Winter [1982]. Boyd and Richerson [1985] develop a formal approach to culture that develops models of cultural norms that Williamson [2000] describes informally.

When I picked up Gould's huge book, I did not expect to learn anything about economic development or competition. But in reading Gould, it seems that there was

a powerful embryonic model, perhaps relevant to economics, that gave me a strong feeling that a multilevel theory could make a real advance on our current understanding. If one is attracted to the New Institutional approach, it is striking that Gould has portrayed a new route to thinking about it. Competition occurs at a variety of levels, and these are tied together, restricting and channeling the competitive process.

Gould and Lewontin's early idea, which they oddly named "spandrels," seems possibly valuable in thinking about how innovations occur, in their details. A particular useful change mutation; it fits into an equilibrium. Then, conditions change and this mutation turns out to be highly valuable in a somewhat different environment. Gould's story [2002, 121-25] that Adam Smith's theory was picked up by Charles Darwin is a perfect example, and maybe relevant to our use of evolutionary biology. According to Gould, Smith argues that competition leads to natural selection, which leads to efficiency. Darwin read this, probably in McCulloch, and used it as the core of his theory that natural selection tends to lead to efficiency—survival of the fittest and of an efficient collection of individuals and species. Clearly, Smith was not writing to improve the analysis in evolutionary biology! But Gould claims that his work did just that.

The idea that a particular facet of an economy or a particular technology might be highly valuable later to help another element of an economy develop seems a particularly good idea for economists to explore. I particularly like it because it helps explain how there are periods of slow growth in an economic area—like DARPA's early development of the internet for connecting military research work together—which, after a variety of small improvements, turned into a huge advance in a somewhat different way.

A few economic historians have put the evolutionary framework to work specifically noting Gould's approach. Joel Mokyr [1990] proposes to consider techniques as species. He sees—in economic history—macroinventions as leading to a cascade of microinventions, and so pushing technology along quickly. He ties this to complementarity between these micro- and macroinventions. What leads to each? Are there deeper forces that lead to bundles of such inventions, or that cut them off?

George Basalla, a historian of technology, found in his book *The Evolution of Technology* [1988], cases of innovation that fit Gould's "spandrel" idea; the most apparently obvious technological innovation at a given time often was not the one that succeeded. And, in reverse, the technology that succeeded often was not the one that was really most efficient. Basalla [1988] considers the automobile engine's development to fit this pattern—chance, particular innovators, and probably the complementary work of a group of innovators, made a big difference. He sees that in a new technical area there are a variety of forms, developed for various good reasons, which are then applied to some other need or opportunity. The development of the use of electricity gives numerous good examples.

In 1898, Thorstein Veblen published an article, "Why is Economics not an Evolutionary Science?" in the *Quarterly Journal of Economics*. He argued that economies develop and evolve, so only an evolutionary economics would explain economies. Instead, then, static optimizing was considered the best description. Have things changed in 106 years?

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