

# **Beyond any shadow of a doubt, there is a change in the air, as economics nears its Copernican Moment.**

From the editor: *In partnership with [ThisViewofLife.com](http://ThisViewofLife.com), join us as some of the leading thinkers in economics and evolutionary biology offer their advice to an aspiring economist. In the process, they illuminate the flaws in existing economic theory and demonstrate how evolutionary science can enhance our understanding of economic behavior. View the [full series](#).*

By [Dennis Snower](#)

This is probably the most exciting and fruitful time ever to become an aspiring economist. Why? Because economics is reaching its Copernican Moment – the moment when it is finally becoming clear that the current ways of thinking about economic behavior are inadequate and a new way of thinking enables us to make much better sense of our world. It is a moment fraught with danger, because those in power still adhere to the traditional conventional wisdom and heresy is suppressed.

Up to the 16th century, the conventional wisdom on astronomy conformed to Aristotle’s cosmology and Ptolemy’s astronomy. In Aristotle’s system, the earth is the center of the universe and the heavenly bodies are part of spherical shells of aether. These shells fit around one another in a clear order: Moon, Mercury, Venus, Sun, Mars, Jupiter, Saturn, and the fixed stars. All these spheres are put in motion by the Prime Mover. By the 16th century, Ptolemy’s astronomy was regarded as in accord with the conventional reading of the Bible, the ultimate source of all knowledge.

Ptolemy’s system encountered endless difficulties in accounting for the empirical evidence, which were addressed through the repeated application of geometric “fixes” (eccentrics, epicycles, and equants). The underlying methodological requirement was to retain the Aristotelian system as the foundation for our understanding of the universe and then to depict each “fix” as a divergence from this accepted foundation. Thus, to be taken seriously as an astronomer, it was necessary to master the Aristotelian and Ptolemaic systems and to develop superstructures on them. Copernicus did not follow this intellectual path, but he did not dare to publish his heliocentric theory until the year of his death, in 1543. In 1632 Galileo published a book supporting Copernicus’ heliocentric theory, was summoned before the Inquisition, and recanted. The Church had the hard power of the Inquisition and the soft power of scholastic theology on its side.

In the academic discipline of economics, we are currently experiencing a tame analogue to these first throes of the scientific revolution. The punishment for heresy is not execution, but intellectual oblivion.

## **Current Foundations of Economic Thought**

The entire ecosystem of economics — the textbooks, the dominant journals, the places of higher learning, the prestigious conferences, the promising pathways to professional success, and the news media — is singing from the same song sheet, namely, the basic axioms of neoclassical and behavioral economics. The most important of these axioms are the following:

Microeconomics:

- Individuals are the only units of functional organization relevant for economic decisions. The economic activities of social and political groups are merely the sum of their members’ activities.

Thus individuals are the only unit of selection, i.e. the success of an individual depends only on the characteristics of that individual. Methodologically, we have the claim that social phenomena must be explained by individual actions, which in turn must be explained by the decisions of individuals. This is the doctrine of methodological individualism.

- In neoclassical economics, consumption is the ultimate source of wellbeing. In other words, the “utility” of individuals depends, either directly or indirectly, on what they themselves consume. In behavioral economics, this axiom has been relaxed to allow for “social preferences,” whereby an individual’s utility may depend on the consumption of others.
- Individuals are “rational actors.” This means that each individual’s decisions can be explained in terms of maximizing utility subject to constraints (such as a budget constraint).
- This utility can be represented by a preference function which is complete (it covers all the individual’s objects of choice) and transitive (if A is preferred to B and B is preferred to C, then A must be preferred to C). The individual’s choices “reveal” her preferences, which implies that the preference function must be temporally stable at least for long enough for such preference revelation to take place. Behavioral economics relaxes this axiom to allow for preferences that depend on reference points (such as the status quo), loss aversion (more weight given to losses than gains) and differences between experienced utility (the source of wellbeing) and decision utility (the objective of decision making).

Macroeconomics:

- An economic market can be understood in terms of the demand for and the supply of goods in that market, which depend on the prices of these goods. In “perfect” markets (characterized by perfect information, perfect competition and no externalities), the price adjusts to equate demand and supply.
- Once this adjustment has taken place, the market is in “equilibrium,” which means that there is no tendency for any further change.
- Under “market imperfections” (imperfect information, imperfect competition, and externalities), markets may tend towards an equilibrium in which they do not clear. In such an equilibrium, for example, labor supply may permanently exceed labor demand.
- When all markets have reached their equilibrium, then the economy is in a state of “general equilibrium,” in which the entire economy experiences no further change.
- Macroeconomic activities can generally be understood as aggregates of market activities in the general equilibrium.

Knowledge:

- Individuals understand their environment imperfectly. Rational agents obey the axioms of probability. This means that they know the set of all possible events; they can assign a probability to each event; every event has a probability of at least zero; the probability of all events is 100%; and if the events are unrelated, then the probability that either of the events happens is equal to the sum of the probabilities that each event happens.
- Economic events can be understood through the application of econometrics (i.e. statistical theory, based on probability theory).

A major implication of these axioms is that under “perfect” market conditions, the general equilibrium is efficient, so that no one can be made better off without making someone else worse off. This is the basis for understanding Adam Smith’s Invisible Hand, whereby the selfish activities of uncoordinated market participants serves the public interest. It is also considered the basis for understanding why the capitalist system has been so successful in delivering high and growing living standards.

Unless you accept these basic axioms and the Invisible Hand implication, you will not be taken seriously as an economist. This is important, since economics is particularly influential among policy makers, economic commentators and the general public — far more influential than the other social sciences.

### **Fixes That Fail**

Thus, economists tend to accept the neoclassical economic system (comprising these axioms with regard to perfect markets) as the foundation for their understanding of the economic universe. They then explain each discrepancy between the predictions of this system and their empirical observations in terms of a “fix,” to be understood as a divergence from the accepted foundation.

They recognize that the axioms above are often not in accord with the empirical evidence. In fact, behavioral economics began as a compendium of “anomalies” that the neoclassical system could not explain. Some of these anomalies have been addressed by behavioral theories such as prospect theory or social preference theory, but many have not. Different theories explain different anomalies; there is no overarching theory to explain them all.

And since behavioral economics is devoted primarily to individual fixes, it has retained many of the basic axioms above, such as methodological individualism, consumption as central for wellbeing, understanding economic events in terms of probability theory and the tendency toward equilibrium. However, these axioms are also open to question.

Regarding methodological individualism, who says that the individual is the only level of selection? After all, Homo Sapiens owe their evolutionary success largely to their ability to cooperate with one another, in larger number than other mammals.

Regarding consumption as central to wellbeing, who says that our material appetitive needs dwarf our social needs, such as the need to care and be cared for, or the need to belong to a community, or the need to shape your fate through your own efforts?

Regarding our ability to understand economic events in terms of probability theory, who says that we can imagine all conceivable future states of the world and that we can assign probabilities to each of them? After all, many of the most important events that young people look forward to in the future — whom they will marry, where they will live, what jobs they will get, how much they will earn, what their state of health will be, when they will retire, how long they will live — are simply unknown unknowns.

Not only has the neoclassical system encountered endless discrepancies between predictions and evidence and thus has accumulated endless fixes, but it also has had little success in addressing the great economic questions of our time. For example: If the free-market system is meant to satisfy our needs efficiently, why is it despoiling our environment? Why is it generating inequalities and other inequities that threaten the social cohesion of our societies? Why does it leave so many people economically insecure, vulnerable to unemployment and trapped in dead-end jobs? Why does it not correct for the excesses of consumerism, workaholism and digital addictions, frequently leading to

anxiety, depression, burnout, substance abuse and crime? Why is it giving us so little guidance in promoting public compliance with social distancing rules during the Covid-19 pandemic, even though such compliance has economic causes and consequences? Why does it keep so many businesses focused on short-term profit and shareholder value, even though so many business leaders are genuinely concerned about the environment and the wellbeing of their customers and employees?

## **Responses to Failed Fixes**

To these great questions, mainstream economists (those whose economic knowledge is taken seriously) give one of two standard answers: (1) These questions may be important, but the answers lie outside the domain of economics. For environmental problems, turn to the life sciences; for social problems, turn to sociology and anthropology; for psychological problems, turn to psychology; for crime, turn to law; and so on. (2) Economics can deal with these questions through its standard policy toolbox: taxes and subsidies, government regulations, quotas, remuneration schemes and other instruments that provide monetary incentives for some behaviors and forbid others.

In the course of my policy and business advisory activities — supporting the G20 Presidencies through my leadership of the Global Solutions Initiative, advising international organizations and national governments with regard to labor, welfare and macroeconomic policy, and working with business leaders to address global economic problems — I have recognized a profound change in the way practitioners view mainstream economics. Economists used to be the high priests of public policy and business strategy, playing a leading role in the formulation of pricing policies, incentive schemes, contract design, monetary and fiscal policies, social and health policies, and much more. Mainstream economics promulgated a simple narrative on the division of responsibilities — a narrative that appeared to suit everyone well in today’s capitalist economies: The purpose of business was to make profit; the purpose of consumers was to satisfy their selfish material desires; and the purpose of government was to devise rules that enabled the businesses in the free-market system to satisfy the consumption desires efficiently (i.e. at minimum resource cost).

Now the practitioners’ patience with mainstream economics is wearing thin. Unlike the academic economists, the practitioners must actually address the great economic questions of our time. They cannot afford to be satisfied with the two above-mentioned standard answers. They cannot accept that these questions lie outside the domain of economics, even though they have many important economic causes (the world economy as driver of climate change, economic inequalities as drivers of populism and social fragmentation, and so on) and many important economic consequences (climate change driving migration, populism leading to protectionism, and so on). Nor can the practitioners be content with the economists’ standard policy toolbox, since these instruments are obviously not overcoming the growing problems of climate change, social conflict, “deaths of despair,” containment of the Covid-19 pandemic, and much more.

And finally, the practitioners are no longer enamored by the mainstream narrative on the division of responsibilities. Consumers in their millions are taking an interest in the social, political and environmental consequences of consumption and production activities, school children are out in the streets in protest about climate change, international organizations are beginning to measure economic performance beyond GDP (such as through the OECD’s Better Life Index and the UN’s Sustainable Development Goals), businesses are beginning to measure business performance beyond shareholder value (such as through Environmental, Social and Governance criteria along with the initiatives of the WEF International Business Council, the OECD Business for Inclusive Growth coalition, the Value Balancing Initiative, the British Academy’s Future of the Corporation programme), national governments are beginning to design budgets with regard to notions of

wellbeing that extend beyond consumption of goods and services (such as New Zealand's wellbeing budget). In short, the practitioners are not waiting for the mainstream economics profession to adjust to reality; instead, they are forging ahead on multiple fronts, extending the domain of economics to the existential challenges we face.

## **Intimations of Progress**

Beyond any shadow of a doubt, there is a change in the air, as economics nears its Copernican Moment. We are gradually reaching the same sort of stunning realization that Copernicus must have reached before writing his revolutionary book "On the Revolutions of the Celestial Spheres": What if we can't get there from here? What if incremental fixes don't permit a major new leap in our understanding? What if we need to encounter the world afresh?

Fortunately, we now have access to a powerful body of thought that can guide this new encounter. The evolution of our natural world can be understood in terms of variation, replication and selection. The evolution of ideas can be understood in such terms as well: new ideas keep cropping up; they are transmitted from person to person; and the ideas that get selected to survive are often to be ones that enable us to navigate our environment most effectively. Selection can act not only on individuals, but also on groups. "Selfishness beats altruism within groups. Altruistic groups beat selfish groups. Everything else is commentary." (E.O. Wilson and D.S. Wilson (2007), "Rethinking the Theoretical Foundations of Sociobiology," *Quarterly Review of Biology*, 82(4), 327-348) The level of functional organization thus depends on the relative strength of within- and between-group selection.

This is a different starting point from the one underlying mainstream economics. The discipline of economics is based on classical physics, i.e. the inanimate world. Evolution, by contrast, is appropriate to the animate world. Not a bad point of departure for economics. After all, humans are living creatures. If we choose this path, economics will be reaching its Darwinian – not Copernican – Moment.

This is why now is probably the most exciting and fruitful time ever to become an aspiring economist. The Dutch philosopher Erasmus famously said, "At the end, you will ask yourself: What have I made of my life? That wish you wish to answer then, do now." Who would not wish to be alive and active at such a moment, when a great contribution is waiting to be made and there is no one around to execute you for it?

28 December, 2020

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## **Dennis Snower**



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