

Gary North's

REMNANT REVIEW

Matt. 6:33-34

Preparing the Remnant for the far side of the crisis

Vol. 35, No. 6

June 20, 2008

A TROJAN HORSE INSIDE VIENNA'S GATES

This is the story of a needless surrender. This surrender has been made by the most persistent defenders of the free market, Austrian School economists.

You may think that economics as it is taught on campus these days is pro-free market. It is in the sense of not being Marxist. But Marxism was never a dominant perspective in any American university economics department. If you think that economics is pro-free market in the way that Ludwig von Mises was free market, you are misled.

This is my warning: "If you do not intend to pay tribute to others, do not let others fight your battles for you. If you do, you will eventually discover that you are under the domination of the victors who successfully fought your battles. Furthermore, at some point, they will in turn be defeated by an invading force, and you will then be at the mercy of the invader."

I issue this warning to non-economists who think that the battle for the free market is best conducted by academically certified economists. I issue it also to trainees who are seeking academic certification. I issue it finally to embattled defenders of a view of the free market that does not conform to the official view -- the view of the collegiate textbooks and professional journals.

This report deals with a Trojan horse. This Trojan horse has undermined the case for the free market. It has partially disarmed the most articulate and consistent defenders of the free market society. They have seen the horse, marveled at its structural design, and have brought it inside the gates. The Greeks inside have used this opportunity to move to the gates in order to unlock them. My job is to sound a warning: "The horse is not empty. Burn it!"

The story of the Trojan horse appears in Virgil's *Aeneid*, not in Homer, who recited *The Iliad* a thousand years earlier, or so we are told. We all know the story. The wily Greeks

left a giant wooden horse outside the gates of Troy after ten years of fruitless battle. The Trojans thought this was a peace offering. They brought it inside the gates of the city and left it unguarded. At night, Greek warriors hidden inside the horse were able to leave its confines and unlock the gates of the city. From this story, we get the phrase, "Beware of Greeks bearing gifts."

Over fifteen hundred years after Virgil, a Turkish army approached the gates of Vienna. The army was defeated and never reached the gates. Then, a century and a half later in 1683, it happened again. They reached the gates. They were again defeated. That was the high-water mark of the Ottoman Empire.

Today, there are so many Turks living in Germany that if the German government were to expel them, their withdrawal of funds from German banks would collapse the German economy. Once inside the gates, the invaders cannot easily be removed.

I mention this as background to a story of intellectual warfare. Intellectual warfare is important in shaping societies and civilizations. This was the one point on which the British economist John Maynard Keynes and Austrian economist Ludwig von Mises agreed entirely. Both men argued that the ideas of economists shape the social order.

In the battle over economic ideas in the West, three men did mighty battle: Karl Marx on the far Left, Mises on the far Right, and Keynes in the middle. Other economists have joined the fray, but from the point of view of their attitude toward the power of the state to shape the economy for the benefit of the public, Marx, Mises, and Keynes are the three economists who established the theoretical boundaries.

With the fall of the Soviet Union in 1991, Marxism died. The undeniable failure of such a widely accepted idea had an immediate effect: a complete loss of confidence by Marxist intellectuals. I know of no internationally acclaimed and widely respected intellectual movement in history that died as rapidly as Marxism did. I know of none whose demise can be traced to a single event -- in this case, the failed coup by the Communist Party of the Soviet Union on August 16-19, 1991.

That left Mises and Keynes. This was a classic David and Goliath contest. Each man rejected the ideas of the other. Their ideas were incompatible. Mises at his death in 1973 was unknown to the general public. Keynes at his death in 1946 was the most widely known economist in the world, and the founder (in 1936) of a school of economics which became dominant in non-Communist universities over the next three decades.

Austrian School Economics

In 1871, Karl Menger made an intellectual breakthrough. Menger taught economics at the University of Vienna. He discovered that the relationship of cost to price is the reverse of what Adam Smith and the classical economists, including Karl Marx, had argued. They had argued that costs determine price. Smith had confused everyone by arguing for two separate and incompatible theories: the labor theory of value, which Marx made the center piece of his economic analysis, and a cost-of-production theory of value. Both are wrong,

Menger argued. Value is imputed subjectively by final buyers (paying consumers) of a good or service. Then, through competitive bidding (objective), they allocate who gets what at what price.

Value is not objective, Menger argued. Prices are, but value isn't. Value is subjective. It is imputed by consumers, not infused by producers. This means that producers do not add value autonomously. They combine land (raw materials), labor (including intellectual labor), and capital (land plus labor combined) over time, but until the consumers validate the production of an entrepreneur by purchasing it at a profit to him, the entrepreneur does not add value to the process. The consumer, not the producer, is sovereign. Menger explained all this in his book, *Principles of Economics*. It is free to download: <http://www.mises.org/Books/Mengerprinciples.pdf>

This book launched what is known as Austrian School economics. It was not translated into English until 1950.

In one of those strange yet familiar occurrences in intellectual history, two other economists made a similar breakthrough within months of each other. None of the three knew of the others' existence. William Stanley Jevons of England and Léon Walras of Switzerland both came to the same conclusion: economic value is subjective.

Walras and Jevons adopted descriptive devices that Menger did not. Both men used curves. Walras invented the downward-sloping demand curve: at lower prices, more is demanded. He also offered an explanation of the price system. He said it can be accurately described as an enormously complex system of simultaneous equations. Through Walras, writing in French, his mathematical economics slowly began to conquer the minds of younger economists. This did not happen overnight. It took two generations. His 1874 book was not published in English until 1954. By that time, his triumph over the economics profession was complete.

The gates of Vienna came under siege as soon as Menger's book was published. The main attacking army was the German historical school, which denied the existence of economic regularities (laws) except as the shifting, time-driven products of competing economic forces in society. This school denied the existence of economic laws separate from social forces, which varied from nation to nation.

Behind the lines of this academically well-established German army, members of a new army arrived, one by one: economists from Great Britain and Switzerland, who held that there are timeless economic laws. These laws are best expressed mathematically by timeless simultaneous equations and by timeless curves.

These two armies -- the army of the epistemologically time-bound and the army of the epistemologically timeless -- laid siege to the gates of Vienna.

Menger's economics affirmed both time and timelessness. It affirmed time because individuals make decisions in time regarding the future. Individuals are time-bound. But because of certain universal aspects of human nature that govern the way that people

impute economic value, their decisions individually are governed by timeless categories of human action.

Menger's economics traced pricing to value, and value to the subjective valuation of individuals. He was a methodological individualist to a degree never before seen in the history of economic thought. He established a tradition of explaining economics from the starting point of individual decisions. This became the identifying mark of the Austrian School of economists, from Menger to Böhm-Bawerk to Mises to Rothbard. Begin with the individual, they said. Never explain economic causation by an appeal to a theoretical but unproven (and unprovable) autonomous aggregate entity.

The Austrians recognized clearly that the Germans were the enemy. They accepted the troops under Field Marshal Walras and General Jevons as opponents of the Germans and therefore allies. On some issues, they were allies, especially the issue of the subjective origin of economic value. But on the crucial issue of the role of time in the economic process, and also the equally crucial role of knowledge in economic theory, they were not allies. They were implacable enemies. They remain so today.

As the German historical school faded in the late nineteenth century, the replacement army took over the front lines of the siege of Vienna. The army of timeless equations and timeless curves surrounded the city. But they did not subject the city to bombardment. Instead, they built a horse.

The armies on both sides of the gates defend the idea that economic value is subjective. They have broken decisively with Adam Smith. Both armies defend the idea that individuals pursue their rational self-interest. This was Adam Smith's legacy, and neither side has abandoned it. Both sides defend the idea that the free market's price system is the most efficient way for most members of every society to allocate goods and services -- another Smithian insight. Yet the battle continues to this day. It is battle to the death, or at least a permanent stalemate. What is it about? Two things. (1) Time. You could honestly say of the economists' battle for the minds of men, it's about time. (2) Knowledge. The enemies of the Austrians are know-it-alls. Austrians know better. Murray Rothbard targeted these two issues in a 1976 essay, "Praxeology: The Methodology of Austrian Economics."

All action in the real world, furthermore, must take place through time; all action takes place in some present and is directed toward the future (immediate or remote) attainment of an end. If all of a person's desires could be instantaneously realized, there would be no reason for him to act at all. Furthermore, that a man acts implies that he believes action will make a difference; in other words, that he will prefer the state of affairs resulting from action to that from no action. Action therefore implies that man does not have omniscient knowledge of the future; for if he had such knowledge, no action of his would make any difference. Hence, action implies that we live in a world of an uncertain, or not fully certain, future (p. 59).

<http://mises.org/rothbard/praxeology.pdf>

What never ceases to amaze me is that most of the combatants on either side are unwilling to admit that these are the fundamental dividing lines: time and knowledge. They think this is a battle over something else. This is why the average civilian cannot figure out what all the shooting is about. "Why don't Austrian School economists and Chicago School economists and supply-side economists and public choice economists sign a peace treaty?" Because they do not agree about the roles of time and knowledge in the economic process.

World War I

The idea of central planning grew in popularity among Western intellectuals and their subordinates, mainline denomination theologians, after the rise of social Darwinism. There was a battle between the free market social Darwinists, who preached the survival of the fittest individuals, and the statist social Darwinists, who preached the survival of mankind through state planning. The central planners had won this battle by 1900. Individualist social Darwinism faded rapidly.

The defenders of central planning made major inroads from the outbreak of World War I until the fall of the Soviet Union. Revolutionary Marxism and evolutionary Fabian socialism had produced systems of economic interpretation throughout the second half of the nineteenth century. This was an intellectual war between international socialism and various national socialisms. Neither school of opinion was dominant socially. The West was still influenced by the classical economics of Adam Smith.

There were very few academic economists. The University of Vienna did not even grant a degree to economists. They were graduates of the school of law. Slowly, the ideas of the neoclassical economists, mainly Jevons and his disciple Alfred Marshall in the Anglo-American academic world, and Walras and his disciples in Continental Europe, gained control over the newly formed university departments of economics. The disciples of Menger were few and far between.

World War I was the moment of opportunity for Fabians and Marxists. In 1917, the Communists took over in Russia. Europe's free market economists almost universally accepted the legitimacy of at least partial central planning for the sake of the war effort. Western military organization is centralized and hierarchical. The Fabians henceforth got a hearing.

The international gold coin standard was abandoned within weeks of the outbreak of the War. Then taxes were increased. Patriotism and then conscription pulled young men out of the work force. The lights began going out all over Europe. Nine million combatants died. Another ten million civilians died in the war and in the immediate aftermath: the Spanish flu. The gold coin standard and pre-war taxation levels never reappeared.

World War II repeated the process, but with 60 million dead. The post-War result was the replacement of the British Empire with the Soviet Empire, the American Empire, and the break-up of Southeast Asia and Africa into sovereign nations, all run in terms of central planning of one degree or other. The Fabians triumphed, though usually in the name of

Keynes. The Labor Party took over the British government in 1945 and began nationalizing the central industries, coal and steel, and also the health care delivery system.

There was almost no organized intellectual opposition to this process. In 1920, there was basically one lone defender: Mises. He refused to submit.

Mises Accepted the Challenge

In 1920, Mises' article appeared, "Economic Calculation in the Socialist Commonwealth." (<http://Mises.org/econcalc.asp>) It was short and to the point. It argued that without private ownership and free market pricing, economic planning of all kinds is blind. Without capital markets, no central planner can know the value of any asset to consumers. Without free market prices, economic planning is irrational.

In terms of economic theory, nothing further needed to be said. Mises elaborated in his 1922 book, *Socialism*. The book did extend his original argument, but added nothing substantive to it. It took until the mid-1930's for any socialist economist to respond in detail. Yet few people believed Mises in his lifetime. He died in 1973. A handful did believe him, mostly young men. F. A. Hayek was one of them. So was Wilhelm Röpke. Three decades later, so was Murray Rothbard.

Mises did attract some very bright young men after World War I. They came to Vienna to participate in his unofficial evening sessions at a Vienna coffee house. But, one by one during the Great Depression, a majority of his disciples defected. These men tried to take a middling position between Keynes and Mises. They rarely mentioned him again. He was forgotten by 1940.

If we view this as a battle between David and Goliath, each doing battle representatively on behalf of their respective armies, Israelites and Philistines, there was hardly any Israelite army remaining in 1945. In 1946, two events took place: Keynes died, and Leonard E. Read launched the Foundation for Economic Education. Most recruits into the rag-tag army of the Austrians-Israelites were raw recruits brought in from the hinterlands through the recruiting efforts of Leonard Read and his faithful editor, Paul Poirot. These recruits did not go on to earn Ph.D.s in economics. They were housewives, high school students, lower division college students, and businessmen. I was one of them, beginning in 1958. They had no influence.

In the United States, Paul Samuelson was Goliath. Samuelson's theoretical book appeared in 1947, *The Foundations of Economic Analysis*, and his *Economics* appeared in 1948. It became the most influential economics textbook of all time. (There used to be a saying on faculties: "Nobody ever got fired for assigning Samuelson's *Economics* or for not having read *Foundations of Economic Analysis*.") Samuelson uttered a series of verbal challenges, the way Goliath did twice a day for forty days. No one responded directly. There was no counter-Samuelson textbook for two decades. Milton Friedman never wrote one. Hayek never wrote one. The textbooks for three decades, with the exception of the little-known *University Economics* (1967), were Keynesian.

These textbooks set the standard. Every textbook thereafter had to conform to the methodological assumptions of the neo-Keynesian synthesis offered by Samuelson. Milton Friedman in 1965 made that famous statement, "We are all Keynesians now." (<http://GaryNorth.com/snip/584.htm>) He later qualified this remark: Keynesians methodologically. But the acceptance of his methodology was all it took. Friedman had been a Keynesian years before Samuelson's book, as he freely admitted in his autobiography, *Two Lucky People*. The Chicago School economists had generally adopted Keynes's prescription of deficit spending years before Keynes' *General Theory* appeared in 1936.

Mises never surrendered. He never gave an inch. That was why he was dismissed as a crank by his contemporaries, who gave anywhere from a hundred yards to a mile. His early disciples abandoned his position: Fritz Machlup, Gottfried Haberler, and even Lionel Robbins. Robbins' *The Great Depression* (1934) was Misesian, but he later said this was the one book he regretted ever having written.

Mises stood alone against the welfare state. Hayek surrendered no later than *The Road to Serfdom* (1944): on social security (pp. 120-21). He made this complete in Part 3 of *The Constitution of Liberty* (1960).

There is a long-term debate between the schools of opinion regarding the intervention of the state in economic affairs. Even within the Austrian camp, there is debate. Mises accepted the state as a defender of the peace. Rothbard did not.

This is a debate over conclusions. But far more fundamental is the debate over time. Yet this debate is rarely initiated by non-Austrians, and the Austrians for the most part do not fully recognize the threat of timelessness to their position. That is what this essay is all about: to sound the alarm on a Trojan horse.

The Triumph of Walras

If I ran the Mises Institute, I would sponsor a conference of scholars on this topic: "Great Methodological Blunders in the History of Economic Thought." I would invite each participant to make a case for the greatest blunder.

High on the list would be Walras' use of simultaneous equations. Because it assumed away the problem that it was intended to solve -- the free market's allocation problem -- by beginning with omniscience, it led the craft guild of economists down the primrose path to irrelevance. The guild has never found a conceptual way to get from the realm of perfect knowledge and no uncertainty to the uncertain realm of history: decision-making.

The guild has preferred to remain in the rarified world of assumed omniscience and simultaneous equations, the better to resemble physics. Its members fully understand the law governing the acquisition of tenure in tax-funded universities. This is characterized accurately by this saying. "When an economist dies, he is reincarnated into one of two forms. A good economist returns as a physicist. A bad economist returns as a sociologist."

It is common to identify Keynes as the great enemy of the free market in the twentieth century, with Samuelson as his prophet. This is incorrect. The great enemy has always been Walras. Keynes was merely an extension of Walras in the revised version presented by Samuelson. Why do I say this? Because methodology, not economic conclusions, are the battleground of economic liberty.

Joseph Schumpeter, an Austrian economist who studied under Böhm-Bawerk, as Mises did, was not an Austrian School economist. He gained the reputation of being the greatest historian of economic thought. In his universally respected magnum opus, *A History of Economic Analysis* (1954), he insisted that there was a "fundamental sameness" uniting the systems of Walras, Jevons, and Menger (p. 952). The differences were only in technique. "The most important differences in technique turned on the use or refusal to use the calculus and systems of differential equations: the same 'theory' looks quite different in this garb and without it -- especially to the man who is not familiar with the former" (p. 953). This statement is not only misleading, it is the heart of a long-term strategy against the Austrian School. Any Austrian School economist who believes Schumpeter to any degree on this matter has opened the gates to the Trojan horse.

What is the Trojan horse? The calculus and all that it assumes and implies. Schumpeter summarized it as the mathematics governing the "theoretical schemata of quantitative relations between things" (p. 955). This is the heart, mind, and soul of the methodological war within the academic guild of economists. It hinges on the answer to this question: "Is economic theory at bottom the study of the logic of individual choice or the quantitative relations between things?" If it is the latter, then an elite of highly educated people -- mainly men, although it is politically incorrect to say this publicly -- can use the calculus and higher mathematics to understand these relations. This understanding is the first step in the elite's assertion of the power and therefore its obligation to regulate these relations by means of the conceptual tools of mathematical economics and the power of the state.

Schumpeter was devoted to equilibrium analysis -- economic analysis based on the twin assumptions of timelessness and perfect foreknowledge as the ultimate model for economic reasoning. He regarded equilibrium analysis as scientific economics. It is therefore not surprising that he identified Walras as the greatest economist of all time. He dismissed in a brief footnote the Austrian School's rejection of mathematical economics because it cannot explain causation. He used the condescending term "amusing" (p. 957, note 6).

In May of 1952, Paul Samuelson's article appeared in the *American Economic Review*: "Economic Theory and Mathematics -- An Appraisal." In it, he laid down the prevailing view of what constitutes the heart of scientific economics. The important aspect of the revolution in economic thought of the early 1870's had little to do with subjective value theory or the theory of marginal value, he said. This is why Menger's book was "the least important of the three works cited," and why his neglect by modern scholars was not just bad luck on his part. What was important was the perfecting of the general relations of supply and demand. "It culminated in Walrasian general equilibrium." He agreed with Schumpeter's assessment of Walras as the greatest of all economic theorists. Why? Because of his theory of general equilibrium. He compared Walras with Isaac Newton (p. 61).

What is worth noting is that Keynes was not impressed by mathematical economics. He had some highly critical things to say about the "pseudo-mathematical methods of formalizing a system of economic analysis." (*The General Theory of Employment, Interest, and Money*, 1936, p. 297). Samuelson combined the Keynesian idea of the supposed equilibrium of permanent free market unemployment with Walras' pseudo-mathematical methods. This mixture produced the neo-Keynesian synthesis. But it was not neo. It was retro. It was an attempt to impose on Keynes, whose degree was in mathematics and who was a master of statistics, a methodology that Keynes knew was fake.

Samuelson gave the game away. It was Walras, not Keynes, who is the consummate economist of aggregate supply and aggregate demand, which are the only supply and demand that should count. It was his theory of general equilibrium -- timeless and based on perfect knowledge of all market participants -- that is the crucial tool of modern economic analysis. Or, as another methodologist has more famously put it, "Ye shall be as gods" (Genesis 3:5).

Back in 1964, an obscure Right-wing booklet appeared, *Keynes at Harvard*. It was an attempt by non-economists to alert conservatives to the evils of Keynesianism. It overlooked the more important threat: Schumpeter at Harvard, which meant Walras at Harvard and just about everywhere else except Grove City College.

There is a silver lining in all this epistemological darkness. It is not just that higher mathematics is methodologically wrong in economics. It is also a liability in any effort to gain adherents. The lack of higher mathematics has been a benefit to Austrian School economists. They rarely use simultaneous equations. They therefore can better communicate their ideas to non-economists, who have money or power both to dispense.

Meanwhile, neoclassical economists can barely communicate with each other. They use higher mathematics to prove the case for this or that, but hardly anyone inside the profession bothers to read his colleagues' unreadable journal articles. This grants, if not a monopoly, then at least an oligopoly to Austrians. Never look a gift horse in the mouth, I always say. This may not be an axiom of Austrian economics, but it ought to be raised to corollary status.

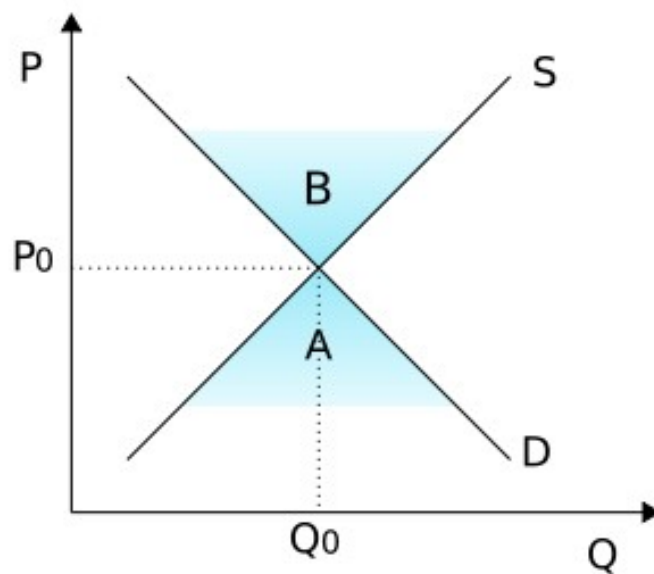
Most beginning economics students do not have a mastery of higher mathematics. Thus, economics textbooks do not introduce higher math in the main text. They may have an appendix where algebra is used. But every textbook uses graphs. The crucial graph is the supply-demand graph. The textbooks use these graphs as supplements to verbal reasoning. But the verbal reasoning in the textbooks is always incomplete. They ignore the central issues of time and knowledge. The graphs rely on Walras' general equilibrium analysis. The texts do not explain this. I believe that this silence is deliberate. The goal is to get students to trust the graphs in order to set them up for accepting Walras in upper division and then graduate school.

The graphs, in short, are the teaching tools required to promote the methodology of Walras. They assume what higher math assumes: simultaneity and perfect knowledge. But the textbooks never admit this.

My target here is the use of curves in graphs. This practice goes back to William Stanley Jevons in the early 1870's. Curves were adopted by Alfred Marshall in his 1890 textbook. He did not use many curves, but his famous supply-demand scissors have become ubiquitous. From the first high school textbook in economics to the latest issue of *Econometrica*, we find graphs filled with curves and lines.

Whenever Austrians import the simple supply-demand graph, they import a Trojan horse. It is filled with methodologically ruthless Greeks -- not just Greeks in general, but Parmenideans. The disciples of Parmenides do not cooperate with the followers of Heraclitus. Parmenides sought to explain reality by means of timeless laws of logic. Heraclitus sought to explain reality by an appeal to historical change. "You can't stick your foot into the same river twice." The river is not the same. Everything flows in Heraclitus' world: *panta rei* in the Greek. In economic theory, this is the realm of entrepreneurship. Nothing flows in Parmenides' world. His is the realm of simultaneous equations. In the realm of simultaneous equations, tick is not followed by tock.

Assuming Away Time



http://en.wikipedia.org/wiki/Image:Price_of_market_balance.svg

The supply-demand scissors rely on the phrase, "other things remaining equal." When we draw a demand curve, it goes downward and to the right. We say, "when the price falls, more is demanded." But what we say is not what the graph teaches. The price does not fall. It takes time for a price to fall. But the graph is timeless. This is why the verbal methodology of Austrianism reflects the truth of action over time. The curves of neoclassical economics do not correspond with action over time. They are analogous to Walras' simultaneous equations. Simultaneity is the key to understanding one of the two main errors of neoclassical economics. Simultaneity denies entrepreneurship. (The other main error is omniscience: no unexploited profit opportunities. Omniscience denies entrepreneurship.)

A demand curve assumes that no change has taken place, other than a lower price. The curve implicitly asks the reader to believe the following: "If you were to offer a good for sale at varying prices, *in the same moment of time*, here is how buyers would respond to each price." Timelessness is mandatory in the graph in order to maintain the assumption, "other things remaining equal" (*ceteris paribus*). This is because time changes other things. An unbreakable rule of the real world is this: "You cannot change just one thing." So, the graph dwells in Parmenides' timeless world, not Heraclitus' world of change.

A demand curve assumes the following about buyers: (1) their tastes do not change; (2) they think that the same item is being offered for sale at various prices (no counterfeit goods); (3) they think that each price is universal -- no better price elsewhere. The graph therefore assumes two things; (1) a representation of timelessness is valid for describing events in time; (2) we can change only one thing.

On the one hand, if a person is told that he can buy an item at a significantly lower price than he could before, he may think -- probably will think -- "What's the catch? This item has to be a fake." So, he refuses to purchase at the lower price. The information he possesses about past prices affects his decision. A curve assumes infinite knowledge about past prices, for a price line contains an infinite number of infinitesimal prices. There is no escape from time in real-world price-taking. But the graph assumes away time. It therefore assumes away the process of actual decision-making regarding prices.

On the other hand, he may buy it after all, if he thinks it is stolen. He may respond exactly as Mordecai Jones insisted he would in *The Flim-Flam Man* (1967). "You can sell a man anything if he thinks it's stolen." He had a phrase: "You can't cheat an honest man." He believed everyone is dishonest, so all mankind was his target. But his point was clear: a seller has to offer a believable reason for selling a high-quality good at a very low price. Otherwise, there would be no sale. A curve reveals none of this.

If the continuous line continues down and to the right, the buyer at any point before the final sale at the lowest price must be assumed to be ignorant of past pricing -- higher on the curve -- so as not to forecast a lower price in the future, and therefore refuse to buy. "It will be cheaper later on." The curve, like the graph itself, must be timeless.

A curve -- demand or supply -- assumes the following scenario: (1) a person or group of people will universally respond in a totally predictable way to separate price offers that (2) are made at the same time, (3) yet each offer must be considered by the price-taker -- he is implicitly assumed by the graph to be a price-taker -- in complete isolation from all the other price offers, (4) which are infinite in number and infinitesimal in size and can therefore legitimately be represented by a curve.

The supply and demand curves are the incarnation of neverland. They are based on the calculus, which Schumpeter correctly identified as "the logic of infinitessimals," without which controversial material "clogs the wheels of analytical advance" (p. 956). He was not lying; he was merely wrong. He believed this, and this belief has undermined economic analysis.

First-year economics students are never informed of any of this, and when a few of them earn doctorates, virtually all of them remain oblivious to what their favorite chart silently but necessarily assumes. The phrase, "other things remaining equal" seems to be necessary to economic reasoning, but it is nonetheless preposterous when applied literally to the real world. The phrase assumes regarding human action that which can never be true of human action, namely, that you can change just one thing. In short, the timeless logic of Parmenides remains logically inapplicable to the changing world of Heraclitus. This remains true after 2,400 years. Or, put in a more familiar phrase, the more things change, the more they remain the same.

It may be that human beings cannot think economically without Parmenidean timelessness, where other things always remain equal. So, we resort to the use of x's and o's to illustrate what we have implicitly assumed about price-taking but have not proven and cannot prove regarding the world of time. But to take the next step involves us in a unilateral surrender to neoclassical economics.

Assuming Away Choice

Rothbard fully understood that a curve is a graphical representation of the calculus. In the first issue of *The Review of Austrian Economics* (1987), he wrote a devastating critique of Schumpeter's theory of economic development and entrepreneurship, a theory crippled by its adherence to Walras' general equilibrium theory. It was titled, "Breaking Out of the Walrasian Box: The Cases of Schumpeter and Hansen." In the second paragraph, he wrote that once you assume away uncertainty, "it is easy to employ algebra and the tangencies of geometry in analyzing this unrealistic but readily mathematical equilibrium state." (<http://www.garynorth.com/snip/586.htm>)

In *Man, Economy, and State*, he offered this critique of neoclassical economics. I quote it at length because I cannot figure out a way to cut any of it and still retain its power -- a problem with citing much of what he wrote.

This illustrates one of the grave dangers of the mathematical method in economics, since this method carries with it the bias of the assumption of continuity, or the infinitely small step. Most writers on economics consider this assumption a harmless, but potentially very useful, fiction, and point to its great success in the field of physics. They overlook the enormous differences between the world of physics and the world of human action. The problem is not simply one of acquiring the microscopic measuring tools that physics has developed. The crucial difference is that physics deals with inanimate objects that *move* but do not *act*. The movements of these objects can be investigated as being governed by precise, quantitatively determinate laws, well expressed in terms of mathematical functions. Since these laws precisely describe definite paths of movement, there is no harm at all in introducing simplified assumptions of continuity and infinitely small steps.

Human beings, however, do not move in such fashion, but act purposefully, applying means to the attainment of ends. Investigating causes of human action, then, is radically different from investigating the laws of motion of physical objects. In particular, human beings act on the basis of things that are relevant to their action. The human being cannot see the infinitely small step; it therefore has no meaning to him and no relevance to his action. Thus, if one ounce of a good is the smallest unit that human beings will bother distinguishing, then the ounce is the basic unit, and we cannot simply assume infinite continuity in terms of small fractions of an ounce.

The key problem in utility theory, neglected by the mathematical writers, has been *the size of the unit*. Under the assumption of mathematical continuity, this is not a problem at all; it could hardly be when the mathematically conceived unit is infinitely small and therefore literally *sizeless*. In a praxeological analysis of human action, however, this becomes a basic question. The relevant size of the unit varies according to the particular situation, and in each of these situations this relevant unit becomes the marginal unit. There is none but a simple ordinal relation among the utilities of the variously sized units. [Murray N. Rothbard, *Man, Economy, and State: A Treatise on Economic Principles* (Auburn, Alabama: Mises Institute, [1962] 1993), pp. 264--65; Scholars edition (2004), pp. 306--7.]

<http://mises.org/rothbard/mespm.pdf>

Yet in the previous chapter, with Figure 14, he introduced his first graph using supply and demand curves. Before this, in Figures 5 and 6, his graphs used discrete little circles (supply) and x's (demand) to reveal the shape of the things we like to call curves but which cannot possibly be curves. We find it difficult to speak of anything except curves, in a way that we do not feel equally constrained about speaking of alternatives to simulations equations. With Figure 13, he made the transition, filling in the spaces in between the circles and the x's with straight lines. Then, on the next page, Figure 14 makes the transition.

Most of the graphs after Figure 14 are traditional. They employ curves. The epistemological problem with curves for economists is a blessing for physicists. They invite the calculus. They assume continuity.

In high school geometry classes, most of us are first introduced to Parmenides' timeless logic by way of Euclid. We are told that a line is a series of infinitely small points. The brighter people in the class think, "then an inch-long line has as many infinitely small points as a mile-long line." These are the sort of people who gravitate toward Zeno's paradoxes. They may eventually discover this one. "If a rabbit chases a turtle, the rabbit must travel half the distance to the turtle. But in this time period, the turtle will have moved forward. So, the rabbit must run half the distance to the turtle, which again moves forward. So, the rabbit can never catch the turtle."

This paradox can be applied to the academic tenure track. "If a Keynesian is half way to tenure, and an Austrian is behind him, the Austrian will race to overtake the Keynesian.

But in the time it takes the Austrian to get halfway to the Keynesian's position on the tenure track, the Keynesian will have moved ahead. Thus, the Austrian will never overtake the Keynesian." Of course, the same would be true if an Austrian were initially ahead of a Keynesian on the tenure track. But theory must be in contact with reality at some point, so this alternative description of the initial positing is not ever considered.

To draw a curve to represent economic action -- timeless economic action -- we implicitly make the following two assumptions, each clearly false: (1) there can be price changes that are infinitesimal; (2) people respond to price changes that are infinitesimal. How often does an economics teacher warn his students of these two assumptions? Rothbard repeatedly warned readers about the methodological dangers of mathematics, but only rarely did he warn of the methodological dangers of the assumptions undergirding a curve, which are the same as the assumptions undergirding the use of calculus in economic theory.

When we enroll in our first class in economics, we have already been conditioned by geometry to accept the usefulness of lines, despite their obvious logical impossibility. So, when we see our first economics graph with lines in it, we make the mental transition without thinking about it. Very few economists ever think through what the line assumes, namely, that the methodology of the science of economics is the same as the methodology of physics. There are no decisions in physics. There are no decisions in neoclassical economics, either. Everyone is an omniscient price-taker. No one is an entrepreneurial price-forecaster. Even if there were entrepreneurs, they could not get their grubby hands on any capital. They would have no more influence on the outcome than some down-on-his-luck tout has on the racetrack's odds.

From the moment an economist takes the easy way out at the blackboard and rapidly draws lines rather than circles and x's, which take longer, he has run up the white flag of surrender to the neoclassical camp. He has substituted convenience for methodological rigor. He has not made clear to his students, graph by blackboard graph, that the lines assume away what Austrian economists insist are the fundamental issues of economics: uncertainty, entrepreneurship, and change. The lines assume away human action.

The graph also assumes that buyers are price-takers and suppliers are price-takers. This means that there is no entrepreneurship in the traditional graph which illustrates supply and demand. There is no entrepreneurship because entrepreneurship takes place over time: buy low now; sell high later. There is also no entrepreneurship for one of two other reasons: either everyone is omniscient (no profit opportunities) or else everyone is totally ignorant of other markets and other prices (no perceived profit opportunities). It is not clear from the graph which of these reasons should be accepted, but one of them must.

Rothbard's Tactical Surrender

Consider Mises. He used only one graph in his career. That was very early: 1922. [Ludwig von Mises, *Socialism: An Economic and Sociological Analysis* (New Haven, Connecticut: Yale University Press, [1922] 1951), p. 166.] He never did it again.

Consider Hayek. He used a few graphs with curves in *Prices and Production* (1931), his first book, and *The Pure Theory of Capital* (1941). Nowhere else.

Consider Kirzner. He used graphs with curves throughout his intermediate economics textbook, *Market Theory and the Price System* (1963). He did not allow it to be reprinted, and he never revised it. He never again used a graph, let alone a graph with a curve in it.

Consider Gordon. In his book, *An Introduction to Economic Reasoning*, David Gordon offers only graphs without curves. In his chapter on supply and demand, he uses mostly x's. Two graphs use discontinuous hyphens rather than curves. These graphs convey the fundamental principles of supply and demand.

This is why Rothbard's use of curves is strange. He clearly identified the methodological error involved in the adoption of higher mathematics in economic reasoning, yet he also adopted a teaching tool that fairly cries out, "Calculus spoken here." The moment we use the conceptual apparatus of "function," we have surrendered Austrianism's central premise: human action.

Rothbard in *Man, Economy, and State* did not warn readers that a curve is based on the same assumptions that higher mathematics assumes regarding human action. He used graphs as tools. But these tools do not convey what Austrian economic theory says regarding human action. They convey the opposite. They convey the world of Walras. What was a tactical decision by Rothbard -- to use graphs familiar to the economics guild -- constituted a surrender to the enemy. He brought the Trojan horse inside the camp. The reason why this was so dangerous is that *Man, Economy, and State* was the first attempt to translate the economics of Mises into a formal treatise that could serve as a textbook for the Austrian School.

At the second Austrian conference, which was held in 1975 in Connecticut, Percy Greaves in a presentation called Rothbard on something he had written which was not sufficiently Misesian. After the lecture, Rothbard chortled: "This is the sort of criticism I appreciate." I hope he would have accepted mine with similar verve.

My view is that even converting a graph from continuous curves to discrete circles or x's is a high-risk tactic. Why? Because avoiding curves solves only the problem of infinitesimal continuity. It does not solve the problem of timelessness. The graph has no way to present the assumptions involved in an array of prices. The text must explain "other things being equal" in relation to "you cannot change just one thing." It must explain prices that come out of nowhere and nowhen -- prices divorced from both time and knowledge. Until the text makes this clear, and warns against taking the graph literally, no textbook should use a graph with a supply-demand non-curve array of prices. Students must be clearly and repeatedly warned. I have never seen a textbook that warns them.

To warn them is to post a sign: "Detour Ahead. The Walras Highway is washed out." A textbook author who did this would soon be washed up.

An Alliance With the Walrasian Empire

The modern classroom economics textbook requires graphs. That is to say, the guild of academic economists requires its members to indoctrinate the students in the methodology of Walras. The use of graphs with their obligatory tangential curves are the terms of surrender. Challenge the graphs in the text, and you end your path down the tenure track.

Every guild has its rules. Every guild has its hierarchical enforcement system. Every guild has its sanctions, both positive and negative. To gain the benefits of above-market income that are produced by state-enforced barriers to entry -- university accreditation, subsidized tuition, subsidized salaries, and tenure -- the rent-seeker must participate in the guild. He must conform to its procedures.

The initial mark of surrender to the Walrasian guild is the use of the curve. This does not sound like much. It is analogous to the pinch of incense placed by every resident of ancient Rome on the altar to genius of the Emperor. It did not seem like much. It was a great deal. It was covenantal surrender to the theology of the sovereign state, which was the primary religion of the Roman Empire. Jews and Christians found out just how serious the Roman state was about extracting this ritual of servitude.

Economists must toss a pinch of incense on the altar to genius of Walras, who offered the reigning theology of the era: ideal man as a timeless master over the uncertainties of life. Either start with this ideal man or sit in the back of the bus.

I recommend against it, no matter how safe the alliance seems. To put it succinctly, do not trust anyone who comes with this message: "I'm from Chicago, and I'm here to help you."

Conclusion

It should be noted that Christians and other religious groups have had neither any interest in nor any input into these debates over methodology. They are expected to choose one position or another based on their subjective preferences for each school's policy implications. They have had no opinion of, or even an understanding of, the epistemological foundations of these rival schools of economic opinion. They climbed on one bus or the other, but only as riders in the back. "All aboard!"

I am working on my lifelong project of developing an alternative. As Rothbard wrote in 1971, "you can't beat something with nothing." [Rothbard, "Ludwig von Mises and the Paradigm for Our Age," p. 8] <http://mises.org/rothbard/paradigm.pdf>

At some point, the oligopoly of Walrasian economists over the teaching of economics will be broken. The first step in a long-term replacement program is to publish alternatives. The second step is to develop privately funded educational alternatives to the existing academic guilds and campuses. The third step is to wait for the de-funding of higher education because of the bankruptcy of the state. We have our work cut out for us.