

YALE ECONOMIC REVIEW

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Can Learn from Online
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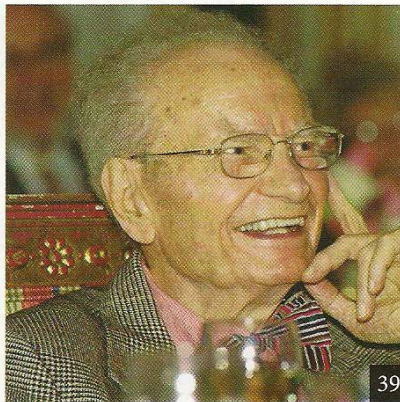
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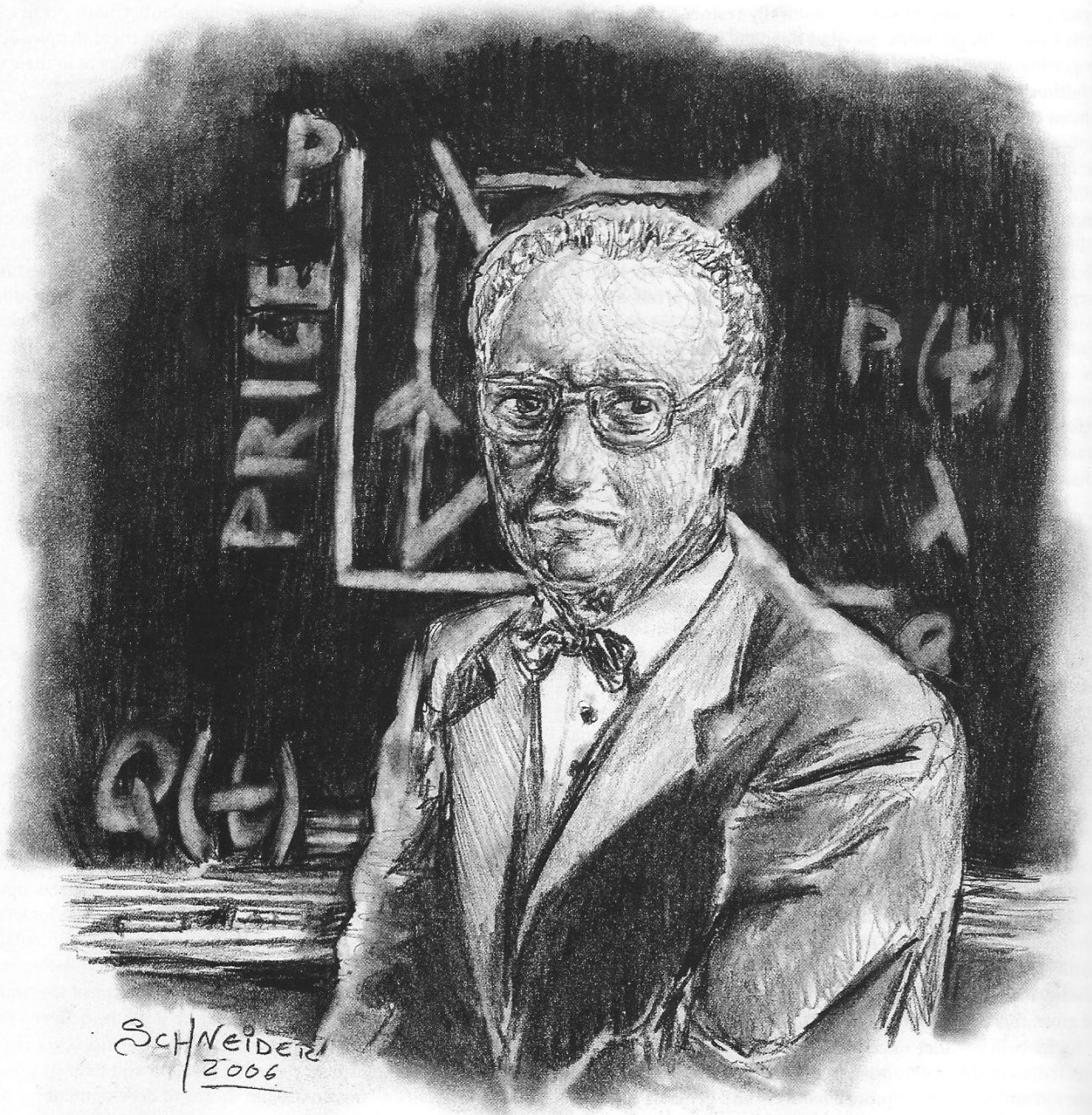
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Great Minds

in Economics



Paul Samuelson

By Mark Schneider

Just as Sir Isaac Newton needed to stand on shoulders of Kepler and Copernicus, without the contributions of Paul Samuelson, today's economists would not be able to see nearly as far. Over the past half century, Samuelson's thoughts have touched almost everyone that has studied economics. Through his profound and prolific research articles – which in 1970 earned him a Nobel Prize – as well as his ubiquitous textbook, Samuelson has influenced generations of college students and even the manner in which economics is taught. Not only has his textbook formed the basis for post-secondary economics education, but its 18 editions, written from 1948 through 2005, serve as a record of modern economic thought. He also played a key role in influencing public policy when he engineered the “great Kennedy tax cut.” Over the last half century, Samuelson's contributions have enabled the American public to frame economic issues and understand and debate economic policy. Indeed, by any measure, Samuelson is a giant in the field.

YER spoke with Samuelson, Professor Emeritus at the Massachusetts Institute of Technology, about his exposure to economics, his foray into politics, and his trend-setting textbook.

Modern Economics is Reborn

Paul Samuelson's entry into economics, like the path to many great discoveries, was plain good fortune. “I certainly didn't think I would become an economist because I didn't even know about economics”, he said. Samuelson attributes his interest in economics to a chance entry into a University of Chicago lecture hall. He even remembers the precise time: 8:00 a.m. on January 2, 1932. That day's lecture was on Malthus's theory of human population reproducing until overpopulation reduced wage rates and food stocks to a bare subsistence level where birth rates and death rates finally converged. “So easy was it to understand all this simple differential equation stuff that I wrongly suspected I was missing out on some mysterious complexity.”

Samuelson describes this moment vividly: “I was born for the second time, the day I walked into the University of Chicago lecture hall, not yet 16, not yet graduated from nearby Hyde Park High School. But it was a new world to me, and then I realized what the different areas of science and scholarship were all about. My role models were the great econo-

nomics has stumbled. Every year William Nordhaus, Yale professor and long-time coauthor of Samuelson's seminal textbook, tells his intermediate microeconomics class how Isaac Newton accidentally established the gold standard when he served as England's Minister of Finance. The United States Federal Reserve did not learn that it could affect the interest rate through open market operations until it haphazardly noticed the effects of buying bonds during the 1920s. The great Irving Fisher once claimed that the stock market had reached a plateau in August 1929.

People often view mistakes in a bad light. But Paul Samuelson, like economics itself, has recognized that mistakes are an inevitable, if not necessary, step. Samuelson modestly admitted to his own blunders. “Milton Friedman and I have had parallel careers. But he probably never made an error in his life. I've made lots of errors in my life. I know better than anybody else does that you have to try out hypotheses that may not turn out to be true.” Luck plays a tremendous role in any endeavor, and even the greatest thinkers are likely to experience setbacks. Mistakes may be the result of negligence, but they can also be the result of extreme ef-

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mists, conservative economists who at the time were at the University of Chicago. Frank Knight, Jacob Viner, Henry Schulz, Henry Simons, these are great names. And eventually, my very first teacher in economics (it was an introductory course) was a man named Aaron Director, who later became a brother-in-law of Milton Friedman. He was more conservative even than Milton Friedman and would speak of his radical brother-in-law, Milton.”

Speaking on whether his entry into the field of economics was the result of solely random chance, Samuelson said, “Perhaps more important than the... role of casual luck was the salutary fact that economics was just right for me. This field was then entering a mathematical phase in both theory and statistics. As a precocious youngster, I had always been good at logical manipulations and puzzle-solving IQ tests. So if economics was made for me, it can be said that I too was made for economics. Never underestimate the vital importance of finding early in life the work that for you is play. This turns possible underachievers into happy warriors.”

However, beyond his contributions to the field, Samuelson and economics share a similar life story. Economics is a field, perhaps more than most others, that is characterized by mistakes. From its infant days, eco-

nomics has stumbled. Every year William Nordhaus, Yale professor and long-time coauthor of Samuelson's seminal textbook, tells his intermediate microeconomics class how Isaac Newton accidentally established the gold standard when he served as England's Minister of Finance. The United States Federal Reserve did not learn that it could affect the interest rate through open market operations until it haphazardly noticed the effects of buying bonds during the 1920s. The great Irving Fisher once claimed that the stock market had reached a plateau in August 1929.

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Samuelson's achievements are proof that accidents can sometimes lead to desirable or even optimal outcomes. Had Samuelson, for instance, not strolled into a lecture on Malthus that winter morning, it is hard to tell where economics would be today. Fortunately for economics, not only did Samuelson's tendency to miscalculate both interest him in the field as an undergraduate, but also landed him in the midst of the greatest economic minds of the time during graduate school.

“I've made many important decisions, and usually I've made the decision by miscalculation.” Samuelson said. “For example, in the middle of my college career I was offered a fellowship to go to law school. For six hours I accepted it. But then I realized I didn't want to become a lawyer. I didn't want to go to law school. And I told the university that I wanted to continue my studies in economics. And they said ‘No problem,’ We'll just change the fellowship to economics. That was the first case where I second guessed on myself. The second time was after I had an excellent record in economics. I was awarded a fellowship, all expenses paid

to attend graduate school at a university. The option was Columbia or Harvard. Yale wasn't an option, nor was Princeton, nor Stanford, nor Berkeley. All my advisors at Chicago said 'Go to Columbia.' I wasn't one to ever blindly accept the words of my elders. By miscalculation, I chose Harvard. I thought that Cambridge and Harvard Yard would be like Dartmouth... I thought it would be like that: quiet, green, [with] rolling hills. Well, I was flabbergasted when I got to Harvard Square and I saw all this traffic. But I was lucky, because Harvard was undergoing an economics renaissance of sorts, due in part to great minds fleeing from Adolf Hitler. Joseph Schumpeter was there. Wassily Leontief was another

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one, and Gottfried Haberler was another one. So, Harvard was a center of modern mathematical economics."

During his fellowship, Samuelson had the opportunity to hear lectures from legends such as Jon Von Neumann, an architect of game theory and quantum mechanics. Samuelson recalled in his 1970 Nobel Memorial Lecture, "Sometime around 1945, von Neumann gave a lecture at Harvard on his model of general equilibrium. He asserted that it involved new kinds of mathematics with no relation to the conventional mathematics of physics and maximization. I piped up from the back of the room that I thought it was not all that different from the concept we have in economics of the opportunity-cost-frontier, in which for specified amounts of all inputs but only one output, society seeks the maximum of the remaining output. Von Neumann replied at that lightning speed which was characteristic of him: 'Would you bet a cigar on that?' I am ashamed to report that for once, little David retired from the field."

Samuelson's grasp of economic philosophy and theory was masterful. William Barnett reports an unconfirmed anecdote that following the defense of Samuelson's dissertation, Schumpeter turned to Leontief and asked, "Well, Wassily, have we passed?"

Samuelson's teaching career took him to a school a few blocks from Harvard yard, where he has remained ever since. "To teach, I received an offer from MIT. So I waited to see if Harvard would top the offer. And they didn't. So I went to MIT, and I've been there my whole life. I've been there ever since." In fact, Samuelson adds that "I've liked MIT so much, that I've never spent two consecutive weeks in Washington. Not even when I was economic advisor to Candidate John F. Kennedy."

A Tax Cut Brings Prosperity

Samuelson once said, "Let those who will – write the nation's laws – if I can write its textbooks." In the early 1960's, Samuelson was on the verge of doing both. By the late 1940's, Samuelson had established a reputation as an insightful and respected economist – just the type of person John F. Kennedy needed to plan America's future. Samuelson explained, "...[Kennedy] wanted to recruit me. But I didn't want to. As I told him, I wasn't for you, I was for Stevenson. He said he didn't want my vote and he told me, 'Well if you think you have some policies that can help our country, here's your chance.' Well, I wasn't sure. His father was an SOB and an appeaser to Hitler, and everyone knew this. And Kennedy was a Catholic. And at that time, no Catholic had ever been President... Anyway, what I decided was that this country was too important to be run by John Kenneth Galbraith or Walter Russell.

"And when he won the election, he said 'why don't you come to D.C. with me?' And I helped pick the council, which had Jim Tobin on it, a great Yale economist." Reflecting on those days, Samuelson adds, "I came to respect John F. Kennedy as a patriot. People saw him as a brash and even dangerous figure. The John F. Kennedy I knew was someone who always tested the ice before he took a step. And I told him, as I should have, Senator Kennedy, we should have a tax cut, because we've had three recessions under your predecessor, Eisenhower. The dollar is overvalued. You know, I was preaching from my own bible, the economic textbook. Well Kennedy replied, "my campaign didn't really start picking up until

my Labor Day speech when I said 'Ask not what your country can do for you, ask what you can do for your country' and now you're asking me to give a tax cut? Well I don't think I've got the votes for it. It's vanity to just go for the right cause if you haven't got the support behind you." However, the tax cut eventually became part of American economic history and a precedent for the later Reagan tax cuts.

The Holy Book of Macroeconomics

Samuelson's *Foundations of Economics* is likely the best selling economics textbook ever, and has been a staple in the American college curriculum since the 1950's. Now in its eighteenth edition, the textbook serves as a history of economic thought in the twentieth century. The revisions to his book have paralleled his career of advancing economic thought and emphasized his commitment to education.

It is difficult to determine precisely how deeply Samuelson's textbook has influenced students, though its longevity and popularity suggest a profound influence, to say the least. Samuelson explained that he wrote the textbook as more of a minor assignment than an anticipated large enterprise. "I didn't even come up with the idea to write it," he admitted. "The chairman from MIT asked me to. You see, for years engineers had to take economics and they hated it. So he asked me to write something they might enjoy. I knew it would sell well. What I didn't expect was that it would sell well for fifty years. And I surely didn't expect that it would become the model for many subsequent economics textbooks."

Through these textbooks, millions have been educated in the fundamentals of economics. Furthermore, Samuelson hopes that in many instances people have taken his lessons on macroeconomics to the voting booth, influencing countless local, congressional, and presidential elections. For example, the seventh edition, written in 1967, states "When the election of 1984 rolls around, all the hours that the artists and editors and I have spent in making the pages as informative and authentic as possible will seem to me well spent if somewhere a voter turns to the old book from which he learned economics for a re-reasoning of the economic principle involved."

In the *Journal of Economic Perspectives*, Columbia University Professor Mark Skoussen published an article titled "The Perseverance of Paul Samuelson's Text Book" where he discusses the evolution of the book's eighteen editions. Skoussen states that "Samuelson must be congratulated for his optimism about the future of the American economy," and that "To his credit, Samuelson has been willing to update his textbook in keeping with new events and new theories. The virtues of monetary



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policy, savings, and markets have received more emphasis in recent issues.” Skousen observes that “Samuelson was unable to foresee many of the major economic events and crises, but this is surely no criticism. After all, most mainstream economists failed to foresee the stagflations and dollar devaluations of the 1970s or the S&L crisis and trade deficits of the 1980s. To some extent, introductory textbooks will always play catch-up to events.”

Playing catch-up may have been the perfect role for Samuelson, as he could experience the event, observe the theoretical or empirical predictions, and then use the tools at his disposal to understand why the forecast did not come to fruition. This is all in keeping with Samuelson’s insistence that it is alright to be wrong, but not to stay wrong. The constant revisions of *Foundations of Economics* suggest that Samuelson himself fastidiously follows the philosophy. He explained, “You know Satchel Paige, the great black pitcher, once said, ‘don’t look back, somebody may be gaining on you.’ Well I say always look back. Look back at your mistakes.”

Samuelson’s economic history of the past half century has shown prognostication is challenging even for the giants of a field. There is something about being a giant and taking risks that makes one more susceptible to mistakes. Nolan Ryan, baseball’s all-time strikeout king, likes to point out that he also walked more batters than any other pitcher. In a similar manner, Samuelson may have been more right, and done as much for economics as any one in the twentieth century; nonetheless he, like the pitching legend, humbly recognizes his moments of error, and is determined to correct them, whenever possible.

Mathematics, Mathematics, Mathematics

Among many of Samuelson’s contributions to economics is his work in bringing scientific and mathematical principles into the field. Indeed, Samuelson is credited with launching the “mathematization” of economics. Partly due to his efforts, economics has evolved much since the days of simple supply and demand curves to which Samuelson was introduced in 1932. Among his over 550 published works are papers involving the use of Newtonian conservation properties in economics and the importance of mathematical optimization and maximization in economic systems. For his work on optimization problems in his 1948 book, *Foundations of Economic Analysis* he was awarded the Nobel Prize for Economic Sciences in 1970. As previous authors have noted, Samuelson’s work was so prolific that there is hardly any area of economic theory in which he has not made significant contributions.

In offering advice to young economists who someday follow in his footsteps, Samuelson acknowledged “I used to say ‘location, location, location’ for economists in training. That was years ago when the field wasn’t as developed. Now I say ‘mathematics, mathematics, mathematics.’ Not necessarily more complicated math. It’s more important that you have a deep understanding of the fundamental mathematics on which economics today is largely founded.”

Turning 91 this May, Samuelson reflects, “As I look back in my ninth decade over my long career in economics, I realize that all those incidents of good luck have to be understood against the background of fundamental trends in economic history. Mine has been a grandstand seat from which to observe most of a century of basic economic history. Bliss it was to be in the forefront of the revolutions that have changed economics forever.” ■