

How Was Milton Friedman Distinctive as a Teacher?\*

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With the possible exception of my eighth-grade math teacher, Milton Friedman was the best teacher that I ever had. Having said that, I can make no pretense that my evaluation of Milton Friedman as a teacher is dispassionate in the sense of being impersonal. This is my personal evaluation. I do think that this evaluation is dispassionate in the sense of being deliberate.

Why do I say “with the possible exception of my eighth-grade math teacher”? In the eighth grade, I was taking a math class, much of which was set theory. My teacher, Miss Cox, gave me a great sense of self confidence about my ability to work out logical arguments by doing something that was not exactly consistent with school rules. I cut math class one day. The next day, my math class had a test over recent material. Much of the test consisted of applying a set-theoretic operator that I had not seen before. Imagine my consternation. I steeled myself and went up and asked Miss Cox if there was a typographic error. Miss Cox told me that I would have known what the symbol meant if I had been in class. That was lesson number one. Then, in a sentence or two, she told me what the operator did. As a result, I got an A on the test. That taught me that I could figure things out for myself given a little bit of information.<sup>1</sup>

There is a serious point to this story. What had Miss Cox done? She gave me a little bit of information, and applying the definition of the operator was up to me. This is exactly what any serious teacher wants to do. As Jacques Barzun puts it,

[T]he whole aim of good teaching is to turn the young learner, by nature a little copycat, into an independent, self-propelling creature, who cannot merely learn but study— that is, work as his own boss to the limit of his powers. (Barzun, 1981, p. 29.)

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<sup>1</sup> It also confirmed my preference for mathematics as logic as opposed to a bags of tricks.

## A. YOU CAN DO IT

From the first course that I took from him at the University of Chicago, Milton Friedman always wanted students to think for themselves. He wasn't remotely as generous as Miss Cox though. In fact, the television show *Paper Chase* reminded me of Chicago and, although Milton presented himself to students quite differently in some ways than Professor Kingsfield, there were similarities. First of all, he was demanding and unforgiving of sloppiness and error. He probably could not believe the triviality of the questions that we had trouble with. Second, at various points, Milton posed questions to students in alphabetical order and, if a student got the wrong answer or just admitted defeat, he went on to the next. This was extraordinarily intimidating.<sup>2</sup>

While this part of his class was intimidating, it also conveyed a message: we could work out the argument ourselves. We generally didn't but he expected it and, as we learned more, the implication was that we would be able to work out arguments for ourselves.

When I was at Chicago, Milton Friedman was teaching price theory. This was quite a different course than virtually all graduate courses taught today, with much of the focus on thinking about issues like an economist rather than learning a set of mathematical tools.

Milton's strategy for the course was a simple one. He had a price theory book entitled *Price Theory: A Provisional Text*. He assumed that we were quite capable of reading that, so he lectured on additional material.<sup>3</sup> This in itself was somewhat alarming because the book was not that easy. It also was great preparation for a career as an economist. It is quite impossible to have a continuing career based on only

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<sup>2</sup> This did not prevent me and others from trying it in our own classes shortly after graduating, only to abandon it quickly.

<sup>3</sup> That material was added to the text and it appeared as *Price Theory* (1976) shortly after I took the classes in Fall 1974 and Winter 1975.

what someone learns in graduate school. We had to learn from written material to survive, and it is no different twenty years later. Those who could, did well; those who couldn't, didn't.

At the end of the quarter, we were given problems to be done in the reading period before the final examination. These problems required that we apply the theory learned in class to real events.<sup>4</sup> Quotes from *Time* magazine and a newspaper set up the problems at the end of the second price theory course. At the same time, these problems were theoretical questions. The first problem required reconciling the proposition that higher land prices and land taxes raised food prices with Henry George's single tax on land. The second problem required that we show how the effects of an unexpected increase in the price of oil and an unexpected increase in malpractice insurance rates are both "special cases of the same problem in capital theory."

#### **B. ECONOMICS IS AN INFORMATIVE WAY OF UNDERSTANDING THE WORLD**

Maybe such problems seem trivial. It is obvious that the supply of land for particular uses is different than the total supply of Henry George's "natural and indestructible powers of the soil." The similarity of the stock-flow problems in the second problem also seems transparent. Some of the topics of Milton's lectures with this bent also might seem obvious, trivial or both.

Even twenty years later, my colleague Bill Dougan and I remember two lectures that stick in our minds. These examples are sufficiently trivial that I have used them in Principles of Economics classes.

At one point, Milton used the content of one of his forthcoming *Newsweek* articles as the basis of the lecture. The controls on oil prices in the 1970s made a distinction between old and new oil. One purpose of the distinction presumably was to prevent owners of previously-discovered oil from unjust enrichment by higher oil prices but permit drillers to receive higher returns from discovering new oil.

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<sup>4</sup> One nice touch was "You may write as much as you want, but the grade will be based only on the first 1,000 words."

Another purpose of the distinction was to keep fuel oil and gasoline prices lower because refiners would pay a lower price for old oil and have a lower cost of producing products. Milton went through the entire class in alphabetical order without anyone making the correct distinction between average and marginal cost. At least to us, this point was not so obvious!

In another lecture, Milton hammered home the distinction between “who writes the check and who pays for something.” This is well known. Virtually everyone who takes Principles of Economics sees analyses of the effects of sales taxes, excise taxes and taxes such as Social Security. It is trivial that the incidence of a tax can be quite different than the legal assignment and every informed discussion of Social Security combines the “employee’s” and the “employer’s” share.

Still, is this so trivial? I was reading a paper recently by an accomplished economist that equated the legal assignment of liability for fraud with the party who paid for fraud. This is the same issue in another guise. The distinction between assignment of liability and its incidence is simple but the distinction is anything but inconsequential. The assignment of liability for fraud is just the first step in the analysis though. Coase’s Theorem implies that the assignment matters at all only in the presence of sufficiently high transactions costs that contracts cannot thwart the legal assignment. Given transactions costs, it seems fairly obvious to assign legal liability to those who would receive it in the absence of transactions costs. As some have suggested, this might be those who have the lowest cost of avoiding fraud losses. All of this seems rather obvious.

I think that Milton made it seem obvious for us after we learned it. He was showing us that simple principles could be extraordinarily powerful for understanding the world around us.

### C. GET IT RIGHT

Milton also was an unforgiving taskmaster in terms of getting things right. Doing so-so work was neither competent nor adequate and was likely to obscure the correct answer.

My personal lesson came when I collected and analyzed data on money relative to real income and prices in various countries. It was hard to find the data for some countries and I thought that I had done a good job. One Sunday afternoon, Milton had time to see me and I went over to his apartment to deliver the results. I was happy with my work when I went in and I was well aware of the work's deficiencies when I left. For countries where it was readily available, I had used end-of-period money data with the annual income data. This seemed reasonable and it did not seem all that important. Some of the graphs were not all that convincing, but I figured that even Milton Friedman gets surprised once in a while by the data. Milton pointed out the error and indicated that it was worth spending the time to do it right. I was the one surprised. When I computed the averages, which I did on a hand calculator twice to be sure that the averages were correct, I found that the graphs were much more convincing demonstrations than my earlier attempts. Even though the short-cut seemed inconsequential, it mattered.<sup>5</sup>

Actually, Milton probably did most of his teaching in the Money and Banking Workshop. He set workshop rules that were atypical at Chicago, let alone in the profession. Members of the workshop were required to present a paper during the year and outsiders filled in other weeks. In a few cases, the papers presented had already been accepted in the *Journal of Political Economy*. Members were expected to read the paper in advance and the workshop's procedure enforced it. The procedure was the same for everyone. At the start of the workshop, Milton always gave the presenter "five minutes to retract anything you like." Then the members of the workshop went through the papers one page at a time. Once, Milton started at

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<sup>5</sup> The other lesson that afternoon was that even an economist as extraordinary as Milton Friedman works a lot more than forty hours a week.

page one and someone objected that he had a comment on the title page. This however was unusual. Members would point out errors, mistakes and stupid statements and the presenter would attempt to respond. It was common not to reach the end of the paper and sometimes the discussion became quite heated along the way. Tom Sargent attempted to explain it to me, but it took me a while to realize that most of the profession regards it as rude at best to continue to press a point after it is clear that the paper's author does not realize his error and probably never will.

In the workshop, Milton taught partly by example and partly by admonishment. He never showed any tolerance for the clever but uninformative idea. An example from my own experience illustrates the use of admonishment. One ritual at Chicago was the thesis seminar, at which a graduate student would present preliminary work on a dissertation and the faculty in the workshop would approve it or disapprove it. Milton had suggested that I work on the Gibson Paradox. I went off and carefully collected data for various countries. I did what some would have considered a sophisticated analysis at the time. I dismissed the simple correlations because they were tainted by high serial correlations if not unit roots and applied a Box-Jenkins analysis to the data to estimate correlations of the residuals. The day when I presented this paper at the workshop is one of the worst days of my life.<sup>6</sup> Mercifully, I do not remember many of the details of the seminar but it was clear by the time that it was over that an idea that I thought was innovative and informative would not cut it. After the workshop and the faculty's discussion, Milton took me into his office to indicate his disapproval and disappointment in no uncertain terms. I should junk that statistical analysis and start over. The bright light in the day was shed by Gloria Valentine, Milton's secretary then and now, who suggested that he was being a "Dutch Uncle", a phrase that my wife had to explain to me.<sup>7</sup>

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<sup>6</sup> My disappointment was worse because I had received generally favorable comments on a paper presented at an earlier workshop.

<sup>7</sup> Possibly based on the theory that misery loves company, Bob Laurent at the Federal Reserve Bank of Chicago told me a few days later that his thesis seminar had not been a good day either.

While the day of my thesis seminar was not one of my happier days, it also was a memorable day in a more important respect. I would like to think that it never occurred to me that throwing a statistical technique at a problem was good economics research. Even so, a message was drilled into me: focus on the economic question being answered and use the statistics helpful for answering that question.<sup>8</sup>

Milton always conveyed the usefulness of economics for understanding the world around us and a receptiveness to evidence. This does not mean that he had no point of view based on his current reading of the evidence, but he was willing to consider new evidence and change his mind if it was inconsistent with his prior belief. We were engaged in serious work designed to understand the world around us, not just make points or spread a truth that was already known. A good example of this characteristic is evident in Milton's written work. Milton's Fordham lectures (1960) contain a clear analysis of banking panics and their implications for banking regulation based largely on his *Monetary History* with Anna J. Schwartz (1963). Subsequent theoretical work and empirical evidence for the United States and other countries indicated that relatively unregulated banking actually can work well in some circumstances. Milton and Anna (1986) explain a dramatic change in point of view about "the inherent instability of banking" and the desirability of government regulation. This example actually is after Milton retired, when most people's

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According to Bob, on the way into the workshop, Milton told him that "I know you learned to write English somewhere, but it's not obvious in this paper." Bob said that the workshop went downhill from there.

<sup>8</sup> When I was done with my dissertation, it was clear that Milton liked one chapter — in which I had examined the correlations across countries -- and another member of my committee, Robert E. Lucas, liked a different chapter -- in which I had examined the consistency of the data with Irving Fisher's explanation of the Gibson Paradox using cross-equations restrictions in a vector autoregression.

I find this story both amusing and instructive. Milton emphasized using the simplest possible tools to examine an issue. Bob emphasized using more sophisticated, in Milton's terms more complicated, tools in the expectation that the more elaborate tools would yield a clearer answer. I personally came to agree with Milton on the general principle, which I think that Bob would too. I am inclined to think, though, that more complicated analyses can yield conclusions that would have been missed by a simpler analysis.



views are set in stone. The willingness to think hard about the implications of evidence was not surprising to those of us who had been in the Money and Banking Workshop with him.

#### **D. CONCLUSION**

Some of my descriptions of Milton may make him sound harsh. There is a sense in which this is deserved. He is very smart, he is commonly regarded as an excellent debater and he has been known to deliver withering criticism. On the other hand, people learn from mistakes and a teacher's job is point out mistakes so the mistakes will not be made again.

Another part of a teacher's job is to clarify things for people so that they understand them. One of the most remarkable things about Milton's price theory course was his clear, concise and precise discussion of things. He often made off-hand comments that instantly clarified issues that had been unclear.

It is not evident from anything that I have said so far, but one of Milton's distinguishing characteristics actually is his gentleness with people. In forums where he responds to questions from general audiences, he invariably answers in terms calculated to be clear to the listener. His answers often have an undercurrent of "It seems obvious that ..., but actually when you think about it, you will see that ...." There is no tone of "If you were as smart as I am, you would see that ...." Actually, he is much kinder to general audiences than he seemed to be to graduate students. A colleague, Don Gordon, explains that, when Milton is dealing with the general public, he does not want to assume that people have knowledge that they obviously cannot. On the other hand, people who claim to be playing on the same level should be able to take it. From this vantage point, Milton was not only doing graduate students a favor by seeming merciless, he was complimenting them on their relative standing.

Other characteristics of Milton's are his cheerfulness and generosity. He smiles often, whether he is explaining expected utility or why a balanced budget amendment is a good thing. Anyone who sees him

in the video *Free to Choose* sees the same thing that graduate students did: someone who is delighted to be able to attempt to understand and explain the world around us.

Milton's generosity never was more evident than after he won the Nobel Prize. More than almost all academic economists, Milton is a public person involved in attempts to improve policies. After winning the Nobel Prize, his time was even more in demand. Even so, he made time for a reception for students in the afternoon before a reception that same evening for others. At that reception, he made light of how long it had taken for him to receive the obviously deserved prize. He passed along the information that Paul Samuelson had indicated that the Nobel Committee did better with its investments than he had and maybe Milton would have done. Milton made a point of crediting his wife Rose for her extraordinary contributions to his work. Even though the crowd was quite large, Milton took time to talk to every student in the room, in the end even helping my wife put her coat on.

Milton Friedman is a remarkable person and teacher.

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