

# PRAGMATIC ASPECTS OF PARADIGM CHANGE ACCORDING TO KUHN

You'd think that in the sciences, paradigm change would be quick and painless. But Thomas Kuhn shows that it isn't so in *The Structure Of Scientific Revolutions*. Most significant changes in physics, chemistry and astronomy, the examples Kuhn discusses, happen over a significant period of time. Kuhn discusses the problem at length. One factor is that there can be no proof of a scientific theory inside the existing paradigm, or inside the new one for that matter. As Kuhn says:

The premises and values shared by the two parties to a debate over paradigms are not sufficiently extensive for that. As in political revolutions, so in paradigm choice—there is no standard higher than the assent of the relevant community. To discover how scientific revolutions are effected, we shall therefore have to examine not only the impact of nature and of logic, but also the techniques of persuasive argumentation effective within the quite special groups that constitute the community of scientists. P. 93.

Kuhn identifies several methods of persuasion. First, there is the possibility that the new paradigm allows solutions to problems that the old one doesn't. This would be highly persuasive, but it is rare. Normally it takes quite a while to work out the parameters of the new paradigm before it begins to yield better solutions to most problems. He also discusses the aesthetic aspects of solutions. Some, as the mathematicians say, are more elegant, more intellectually pleasing. That is attractive to some scientists, who begin to work in the area, and establish the conditions for more complete

articulation of the new paradigm that produces better results and eventually persuades others to take up the new paradigm.

How do these observations apply to economics? Neoliberal ideas do not prescribe solutions to problems that were unsolvable by other schools of economics. Mankiw tells us that "The study of economics has many facets, but it is unified by several central ideas." P. 4. Mankiw's 10 Principles of Economics as the beginnings of a paradigm, as I discuss here, I don't see anything particularly insightful or aesthetically pleasing. Here they are again:

1. People face tradeoffs
2. The cost of something is what you give up to get it
3. Rational people think at the margin
4. People respond to incentives
5. Trade can make everyone better off
6. Markets are usually a good way to organize economic activity
7. Governments can sometimes improve market outcomes
8. A country's standard of living depends on its ability to produce goods and services
9. Prices rise when the government prints too much money
10. Society faces a short-run tradeoff between Inflation and unemployment

On close examination, they seem like an ad hoc collection of aphorisms based on a highly

reductive view of human beings, and trite observations with little intellectual content (people face trade-offs?). More importantly, they have a strong ideological content: the solutions and the policy directions that they will support can easily be inferred. A different set of principles would produce a different set of solutions and policies.

As an example, look at number 8. It seems ambiguous. Perhaps Mankiw is talking about the production of goods and services for sale in the private sector. Does a counter-example spring to mind? China? They have a huge capacity to produce goods and services, and they have a low standard of living compared to the US, which has substantially reduced its capacity to produce goods other than food and lately and, at enormous environmental cost, petroleum.

Besides, what is the measure of standard of living? And when did it become an explicit goal of US economic policy? If standard of living includes health care, a decent environment and a functional infrastructure, how can we even say we or the Chinese have an acceptable standard of living? Can we think of alternatives to production of goods and services to produce a good standard of living? How about conquest and rapine? It worked for centuries and still does today.

Well, it turns out Mankiw meant that if the productivity of workers rises, then their standard of living improves. P. 13, Principles of Macroeconomics, Sixth Ed., 2011. This isn't true in the US today, if it ever was and the proof generally offered is just nonsense from the Natural Law. In a 2006 blog post, Mankiw acknowledges that the labor share has been dropping while productivity was rising, for reasons he can't quite explain. He remains untroubled, and includes this stuff in his book years later in the face of years of evidence to the contrary. It doesn't sit well with his claim that economists are objective like scientists. P. 22.

Kuhn talks about textbooks at some length. They are essentially summaries of the scientist's paradigm, detailed statements of things the scientific community agree are true at a point in time. He asserts that textbooks introduce the student to the conclusions of the community of scholars in a field, and enable the student to master the techniques necessary to progress from the more or less well-solved problems in the textbook to the problems at the edge of agreed results.

I think textbooks are important in economics, too. They introduce the student to the dominant ideas at a point in time. They implicitly assert that those ideas have the same degree of certainty that the equations for the Lorentz-FitzGerald contraction have. That certainty stays with students whether or not they go on in the field. Thus, economics education is one of the reasons for the hegemony of the neoliberal school of economics. And it's not an accident. The rich contribute heavily to teaching this ideology in colleges and high schools. When people believe in a set of "principles" like those taught by Mankiw to the nation's elites-in-training at Harvard, it's difficult to change their minds as they age. So that's one reason economists don't change anything. They don't have to. There is no demand from the elites for anything new.

Kuhn argues that textbooks disguise the actual process of changes in the dominant paradigms, by reconstructing the history of change.

From the beginning of the scientific enterprise, a textbook presentation implies, scientists have striven for the particular objectives that are embodied in today's paradigms. One by one, in a process often compared to the addition of bricks to a building, scientists have added another fact, concept, law, or theory to the body of information supplied in the contemporary science text. P. 140.

You can see echoes of that view in the various writings I've discussed in this series, including Stigler, and it's open in Samuelson and Nordhaus, who include a chart showing something like that on the back inside cover of Economics, 18th ed, 2005. You see it in both the textbooks I've mentioned, which pay little attention to the origins of the ideas they contain, whether the French Physiocrats, the Natural Law adherents, or the Benthamites. These ideas persist, they are not rooted out of the textbooks and continue to infect our public discourse. I'm sure those ideas would be much less persuasive if people understood that they arose from ideas like Natural Law.

This leaves the process of change in the paradigm to the experts in the field, the economists themselves. They don't seem troubled by their failures, but they are fully insulated, both in their wallets and in their tenure, and are supported by wealth. So there is no reason to expect them to change on their own.