

STORY TELLING IN THE TEACHING OF MACROECONOMICS: AN ECONOMIST'S TALES¹

Wong Wei Kang

Department of Economics

ABSTRACT

This paper proposes the systematic use of story telling in the teaching of introductory macroeconomics, both to stimulate students' interest and to provide intuitions on the principles of economics. Specific examples are discussed to illustrate the approach.

KEYWORDS

Story telling, analogy principle, introductory macroeconomics, money neutrality, timing evidence, correlation and causation

I don't know how to teach. A large class—20, 30 students, and everybody comes with different interests. Should we teach science by describing the history of how things are discovered? For some students, that's very interesting, for others not at all—they want to know what the facts are, and never mind how they were discovered... Another kid is very interested in applications of science to social problems; he really wants to help people, and the science for him is a means to do that... Another one is delighted by the magic and mystery of mathematics, and the method of analyzing things... I'm sorry—after many, many years of trying all different kinds of methods, I really don't know how to do it. (Feynman & Sykes, 1995:156–157)

Replace the word 'science' with 'macroeconomics' and multiply the number of students by ten—that is the problem I face in an introductory macroeconomics class. In addition, economics professors suffer from two unique disadvantages. First, while few students would choose physics unless they are remotely interested, many would choose economics believing that having economics on their curriculum vitae enhances their future job prospect (which I would like to think is true), despite having little or no interest in the subject, Second, while few students will complain about physics being mathematical, such complaints are common in economics² due to some mismatches in students' interests and expectations. While I

believe that a professor cannot fully address these problems and should not accommodate the demands blindly to appease the students, I propose using story telling as a partial solution.³

What do I mean by story telling? Stories can be classified into several categories. The more conventional stories comprise of real world applications of the principles of economics. For example, we can discuss how the IS-LM model can be used to analyse the economic impact of the 911 attack and subsequent policy packages adopted to counter the impact. These real world applications are very useful in teaching introductory macroeconomics. However, this paper emphasises that there are also less conventional stories that we can use to illustrate the principles of economics. These include examples from everyday life or even fictional stories. A carefully constructed story brings out the ‘flavour’ of economic arguments and enables students to grasp the ideas behind economic arguments better.

The philosophy behind story telling as an approach to the teaching of economics is what I call the Analogy Principle. The Analogy Principle says that the principles of economics can often be seen in domains that are generally considered to be non-economics related. By showing how we can draw analogies between the arguments of economics and many diverse situations that people do not generally associate with economics, we show students that economics is more than a narrowly defined subject dealing with dollars and cents. In fact, economics is a way of thinking.

This approach is not new. UC Berkeley Economist and Nobelist, George Akerlof, is known among his students for giving many ‘homely’ examples in his PhD macroeconomics class. In addition to providing intuitions on the finer points of economic theory, I believe Professor Akerlof’s stories have also contributed significantly to the collective memory of different generations of Berkeley trained economists.⁴ Similarly, in ‘Restoring Fun to Game Theory’, Professor Dixit, an economist at Princeton University, proposes using examples from everyday life to illustrate the principles of game theory.⁵ He argues:

Even the interests of the abstract theorists will be better served if introductory courses are better motivated using examples and classroom games that engage the students’ interest, and encourage them to go on to more advanced courses. This will create larger audiences for the abstract game theorists; then they can teach them the mathematics and the rigor that are surely important aspects of the subject at the higher levels. (Dixit, 2004:1)

To illustrate this approach, consider the question of money neutrality—a central issue in macroeconomics. Money is said to be neutral if changes in the nominal money supply change the price level proportionally but have no effect on real variables, such as real output and real wage. The basic classical model argues that money is neutral. In contrast, the Keynesian model argues that money is not neutral in the short-run. Obviously, whether money is neutral has important policy implications. For example, if money is not neutral, then expansionary monetary policy may be used to lift an economy out of recession. Of course, money neutrality is ultimately an empirical issue. Specifically, consider the following scenario: suppose we observe that economic expansions tend to follow increases in the nominal money supply whereas recessions tend to follow decreases in the nominal money supply. Does the above observation show that money is not neutral (i.e. changes in the nominal money supply *cause* changes in real economic activities)?

The Real Business Cycle theorists argue that the above observation does not prove that changes in the nominal money supply have real effects on output and employment. The reason is that the above observation is also consistent with money neutrality, where money has no real effect. Specifically, if expectations matter, the above observation can be explained by reverse causation, where future booms and busts *cause* the current changes in nominal money supply, instead of the other way around. For concreteness, consider the following scenario (see Abel & Bernanke, 2005, pp. 374–375).

Suppose for some reasons unrelated to changes in money supply (e.g. technological progress), people expect output to expand in the future. To prepare for future expansion, firms may need to increase its current transactions (e.g. purchase raw materials, place orders for machinery, and so on) and thus they will demand for more money now. Observing this increase in money demand, the central bank will increase money supply to meet the higher money demand if it is concerned with price stability. In this scenario, an economic expansion will be preceded by an increase in the nominal money supply, even though the expansion is not caused by the increase in the nominal money supply (i.e. money is neutral). Causation is reversed in this scenario because it is the expected future expansion that causes the current increase in nominal money supply, rather than the other way around. In other words, the above observation is consistent with alternative interpretations.⁶

The above discussion reveals two general fallacies in thinking about causality. First, the timing of two events is not evidence for causation, especially when expectations matter (i.e. even if A always happens before B, it does not imply that A causes B). Second, correlation does not imply causation (i.e. even if A and B always happen together, it does not imply that either A causes B or B causes A. The correlation could be due to an omitted variable C, which affects both A and B systematically). It turns out that the above fallacies can be detected in many diverse situations. Thus, I usually tell students the following three stories to illustrate the lessons.

THE REVERSE CAUSATION TRILOGY⁷

I. The Dawn of a New Day

Cocks crow before the sun rises, yet nobody would claim that the cock's crow causes the sun to rise. Instead, anticipating the sunrise, the cocks crow (see Sims, 1992). In this example, it is clear which way causality runs, though a debate may well have taken place in history.

II: The IMF Strikes Back!

In the aftermath of the Asian Financial Crisis, critics of International Monetary Fund (IMF) accused IMF for aggravating economic hardship in the crisis countries (e.g. see Stiglitz, 2002). They argued that IMF imposed harsh fiscal austerity on the crisis countries whenever they intervened and these policies had in fact worsened economic situations in the crisis countries.

IMF's Chief Economist, Kenneth Rogoff, argued that these criticisms were unfounded and unfair to the IMF. He argued that since no private agents would come to the aid of these crisis countries which were headed for deeper crisis, had IMF not intervened, worse things could have happened. As a result, economic situations seem bleak after IMF intervened (see Rogoff, 2003). Thus, he argued that although economic hardship tended to follow IMF intervention, it does not imply that IMF's intervention caused these hardships. In fact, it is the anticipation of future hardship that triggered IMF's intervention in the first place.

This example shows that in some cases, it may be much more difficult to determine causality. The above arguments merely suggest possibilities. They cannot settle the debate. Ultimately, whether IMF had in fact aggravated economic hardship in the crisis countries is an empirical question yet to be answered. It is difficult to sort out the direction of causation because we do not observe the hypothetical: *ceteris paribus*, what would have happened had IMF not intervened?⁸

III: Return of the White Wizard

The last story comes from *The Two Towers* in *The Lord of the Rings* trilogy. When the white wizard, Gandalf, met up with Legolas and Aragorn in the Fangorn forest after defeating the Balrog of Morgoth, they went to warn Rohan of imminent danger. In spite of their good intentions, they were greeted coldly when they arrived at the Golden Hall of Rohan. Wormtongue accused Gandalf of causing terrible things to happen to Rohan whenever he visited (e.g. King Theoden's son was slain before Gandalf's visit). That was why he was not welcomed. Gandalf's rebuttal is a perfect example of reverse causation. Gandalf argued that because he had expected bad things to happen to Rohan, being the good wizard, he had come to help. So Wormtongue was wrong in taking timing evidence and correlational evidence as evidence for causation (see Tolkien, 2003, pp. 501–502).

A SMALL END-OF-SEMESTER PROJECT

To encourage students' participation at the end of the semester, students were asked to think of an example to illustrate an economic principle that they had earlier learnt in class. The example could be a real world application, an example from everyday life, or a fictional story. The students were asked to clearly explain how their examples illustrate an economic principle by using PowerPoint slides. The following is an example submitted by a student, Hui Chin Fung:

One of the two contributions that won Kydland and Prescott their 2004 Nobel Prizes in Economics was the so-called time-inconsistency problem of low-inflation monetary policy (see Kydland & Prescott, 1977; Barro & Gordon, 1983). The basic problem is that although the central bank has an incentive to promise a low-inflation monetary policy *ex ante*, its incentive changes once people believe its promise—*ex post*, the central bank would like to renege on its promise. However, if the central bank cares about its credibility and reputation, this will reduce its *ex post* incentive to renege.

An illustration of the time-inconsistency problem can be found in a story told by Han Fei, a philosopher who lived more than two thousand years ago in ancient China. The

title of the presentation was “Zeng Zi Kills the Pig” (see Han, 2000, p.711). As the story went, Zeng Zi’s wife was going to the market and her kid wanted to go along. She said to her kid, “If you stay home and be a good kid, I’ll kill a pig (and cook it) when I return.” The kid believed her and stayed home. When Zeng Zi’s wife returned from the market, Zeng Zi was preparing to kill a pig. She tried to stop him and explained that she was only pleasing the child and did not really mean it. Zeng Zi replied, “The child didn’t know your true intentions. By lying to him today, he will learn to lie and also lose the trust he has in his parents, you can’t teach a child this way”. And so Zeng Zi killed the pig.

I read through and commented on every submission. Students can access all the slides and comments. I then set aside some time during the last lecture to discuss their examples using Oprah Winfrey’s style (Mehta, 2004). The students with the best stories were asked to present their slides during the last lecture. Each presentation took about three minutes. Generally, the project was well-received and students participated actively.

To conclude, this paper proposes the use of story telling in the teaching of undergraduate macroeconomics and discusses some specific examples. The approach can be used to provide intuitions on the principles of economics and to engage the students’ interests before they are fully committed to economics. In the process, students also learn that economics is in fact a way of thinking with wide applicability. In a way, the approach gives a twist to what is meant by ‘thinking like an economist.’

ENDNOTES

1. This paper has been inspired by Professor George Akerlof’s many ‘homely’ examples in his lectures on macroeconomic theory at University of California, Berkeley. This paper contains an account of my attempt to emulate his approach. Of course, all errors are mine.
2. What is considered ‘too mathematical’ in economics often differs from student to student because there are no clear benchmarks. For example, some students would consider solving simultaneous equations in the IS-LM model too mathematical.
3. I disagree with: (i) a student-teacher relationship is characterised by a simple relationship between customers and sellers in a perfect market for education services, and (ii) consumer sovereignty dictates that teachers should simply supply what the students want. I disagree with the above notion on the following grounds. First, the analysis ignores a fundamental characteristic underlying a student-teacher relationship: the so-called market for education services is imperfect because of information asymmetry. By definition, the teachers know more than the students in their chosen fields. Thus, they are supposed to lead the students, not follow. Second, the above notion also ignores the possibility that teachers have an important role to play in giving the students an identity in education and that identity matters (see Akerlof & Kranton, 2002).
4. When I met a senior from Berkeley at Cambridge University in June 2004, our common Berkeley experience turned out to be an analogy that Professor Akerlof drew between different views on childcare and different theories of business cycle fluctuations.

5. One particularly interesting example that Professor Dixit uses to illustrate the logic of backward induction comes from a game played in a reality TV show *Survivor Thailand*.
6. Of course, these arguments also do not prove that money is neutral. For alternative evidence on money nonneutrality, see Friedman & Schwartz (1963) and Romer & Romer (1989).
7. To my disappointment, I later discovered that there is a generational gap between my students and me: most of my students have not seen the original Star Wars Trilogy.
8. The professor can also take the opportunity to elaborate on the difference between economics and the hard sciences such as physics, and why it is often impossible to run controlled experiments in economics,

REFERENCES

- Abel, A.B. & Bernanke, B.S. (2005). *Macroeconomics*, Singapore: Pearson/Addison-Wesley.
- Akerlof, G.A. & Kranton, R.E. (2002). 'Identity and Schooling: Some Lessons for the Economics of Education', *Journal of Economic Literature*, **XL**, 1167–1201.
- Barro, R.J. & Gordon, D.G. (1983). 'A Positive Theory of Monetary Policy in a Natural Rate Model', *Journal of Political Economy*, **91**, 589–610.
- Dixit, A. (2004). 'Restoring Fun to Game Theory', paper presented at the University of South Australia and Journal of Economic Education conference "What We Teach and How We Teach It—Perspectives on Economics from Around the Globe", Adelaide, Australia, July 14–16, [Internet] <http://www.princeton.edu/~dixitak/home/FunGames.pdf>. (Last accessed: 14 March 2005).
- Feynman, R.P. & Sykes, C. (1995). *No Ordinary Genius: The Illustrated Richard Feynman*, W.W. Norton & Company.
- Friedman, M. & Schwartz, A.J. (1963). *A Monetary History of the United States, 1867–1960*, Princeton, NJ: Princeton University Press.
- Han, F. (2000). *Han Feizi xin jiaozhu*. Shanghai: Shanghai guji.
- Kydland, F.E. & Prescott, E.C. (1977). 'Rules Rather than Discretion: The Inconsistency of Optimal Plans', *Journal of Political Economy*, **85**, 473–492.
- Mehta, K. (2004). 'Audience Participation in Lectures', paper presented at the FASS-CDTL Symposium "Innovative Approaches to University Teaching and Learning", National University of Singapore, Singapore, November 4–5.

Rogoff, K. (2003). 'The IMF Strikes Back', *Foreign Policy*, 134. <http://www.imf.org/external/np/vc/2003/021003.htm> (Last accessed: 14 March 2005).

Romer, C.D. & Romer, D.H. (1989). 'Does Monetary Policy Matter? A New Test in the Spirit of Friedman and Schwartz', *NBER Macroeconomics Annual*, **4**, 121–170.

Sims, C. (1992). 'Interpreting the Macroeconomic Time Series Facts: The Effects of Monetary Policy', *European Economic Review*, **36(5)**, 975–1011.

Stiglitz, J. (2002). *Globalization and Its Discontents*, New York: W.W. Norton & Company.

Tolkien, J.R.R. (2001). *The Two Towers* (The Lord of the Rings, Part 2). London: Harper Collins.