

# Dismal Science

## Morne science

by ROBERT G. EVANS

### Abstract

“No prediction, no science.” By this standard, the past year has not been kind to the pretensions of “economic science,” Nobel prizes notwithstanding. The issue is more than semantic. As Neil Postman (1992) pointed out, sciences study natural *processes* that repeat themselves under constant conditions. The social disciplines study *practices* of human communities that are embedded in history. There are no constant conditions; it is impossible to step into the same river twice (Heraclitus). “Physics envy” has led mainstream economic theorists to attempt to understand their discipline through methods and models borrowed from the natural sciences. (By unfortunate coincidence, these have reinforced a certain class of ideological preconceptions and associated economic interests.) Today the results of this methodological mismatch speak for themselves.

## Résumé

« Pas d'argent, pas de Suisse. » Suivant cette formule, on peut dire que l'année écoulée n'a pas été à la hauteur des ambitions de la « science économique », malgré les prix Nobel. Ce n'est pas simplement une question de sémantique. Comme l'a indiqué Neil Postman, la science étudie des *processus* naturels, qui sont itératifs sous les mêmes conditions; tandis que les sciences sociales s'intéressent aux *pratiques* des collectivités humaines qui sont ancrées dans l'histoire. Ici, les conditions sont variables; on ne peut pas plonger deux fois dans le même fleuve (Héraclite). L'« envie de la physique » a poussé les économistes à tenter d'approcher leur discipline avec les méthodes et les modèles des sciences naturelles. (Malheureusement, cela a renforcé une certaine classe d'idées préconçues et d'intérêts financiers connexes.) Aujourd'hui le résultat de ces méthodologies incompatibles se passe de tout commentaire.

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“If economists could manage to get themselves thought of as humble, competent people on a level with dentists, that would be splendid.” – J.M. Keynes

JOHN MAYNARD KEYNES WAS HIMSELF SURELY THE LEAST HUMBLE ECONOMIST of his generation, and subsequent progress towards his goal is difficult to detect. In our own time, Alan Greenspan probably qualified as the leading celebrity economist. Chairman of the United States Federal Reserve System for 18 years, labelled a “genius” and an “oracle,” and hero of Bob Woodward’s (2000) book, *Maestro*, he appeared to bestride the narrow financial world like a colossus – and to revel in the role.

Times change. In the midst of the global economic crisis, many critics have pointed to Mr. Greenspan’s policies of low interest rates and minimal regulation of financial markets as principal contributing factors. He may himself now recognize the value of a little humility; his congressional testimony last October (Committee of Government Oversight and Reform 2008) has been very widely quoted:

... those of us who have looked to the self-interest of lending institutions to protect shareholders’ equity (myself especially) are in a state of shocked disbelief. ... What went wrong ... ?

Committee chairman Henry Waxman was searching in his questioning:

WAXMAN: You had the authority to prevent irresponsible lending practices that led to the subprime mortgage crisis. You were advised to do so by many others. Do you feel that your ideology pushed you to make decisions that you wish you had not made?

GREENSPAN: Yes, I've found a flaw. I don't know how significant or permanent it is. But I've been very distressed by that fact.

As for Greenspan's life-long advocacy of deregulation in financial markets:

WAXMAN: Were you wrong?

GREENSPAN: Partially.<sup>1</sup>

Four months later, the "high priest of laissez-faire" had reluctantly accepted the desirability of (temporarily) nationalizing some of America's biggest banks (Guha and Luce 2009). Milton Friedman must be spinning in his grave.

The point is not simply that pride goeth before a fall, nor that Mr. Greenspan was a singularly incompetent economist. He may well have been; his economic thinking was after all heavily influenced by novelist, capitalist cheerleader and general all-round economic nutter Ayn Rand.<sup>2</sup> But if he became caught up in his own ideology and cult of personality, his adulators are at least as much to blame. America's elites wanted to believe in the man and his radical free-market message. Moreover, Americans in general seem to have a powerful need for heroes.

The flaws in Mr. Greenspan's policies are now glaringly obvious. But few professional economists, in business, government or academia, were any more prescient than he (present company not excepted). Many were aware that American housing prices were riding a bubble of unsound lending practices, but almost none foresaw the terrible worldwide consequences. (If they had, the stock markets would have crashed at least a year earlier.) James Galbraith drove the point home in an interview with Deborah Solomon for the *New York Times* (2008):

SOLOMON: ... there are at least 15,000 professional economists in this country, and you're saying only two or three of them foresaw the mortgage crisis?

GALBRAITH: Ten or 12 would be closer than two or three.

SOLOMON: What does that say about the field of economics, which claims to be a science?

GALBRAITH: It's an enormous blot on the reputation of the profession. There are thousands of economists. Most of them teach. And most of them teach a theoretical framework that has been shown to be fundamentally useless.

"Is no prediction, is no science," says the crusty old Russian astronomer in Fred

Hoyle's (1957) novel *The Black Cloud*. Scientists make predictions about the outcome of experiments or other forms of observation. Their theories stand or fall on those observations. By this standard, "economic science" came up rather short last year. It often does.

There is, however, one prediction that is dead easy for any health economist. The proportion of national income taken up by healthcare spending is about to surge. In our last major recession, healthcare spending rose from 8.5% of GDP in 1989 to 10.0% in 1992. Between 1981 and 1983, the ratio rose from 7.3% to 8.3%. When the general economy turns down, the healthcare sector – public or private – is typically immune.<sup>3</sup> This recession appears to be more severe and may be longer-lasting; by 2010, Canadians will probably be spending close to 13% of their national income on healthcare. The 2008 estimate of the Canadian Institute of Health Information – 10.7% – has, I suspect, already been overtaken by events.

Recent US government projections (Sisko et al. 2009) predict a jump from 16.6% in 2008 to 17.6% in 2009, but assume economic recovery in 2010. This outcome looks increasingly unlikely. The government's projection of 20.2% in 2018 may well be reached five years earlier if the crisis is prolonged.

Governments worldwide are in serious fiscal trouble, facing falling revenues and rising bills for industry bail-outs. Deficits are heading up, way up. The prospects for public healthcare systems are likely to include more aggressive efforts to contain costs – as Canadian governments did in the early and mid-1990s – and to transfer costs from public to private budgets.

Providers of healthcare will increasingly press for the latter approach, attempting to shore up their own incomes by extracting a larger share of the declining incomes of others. (Remember, total spending on healthcare is always and necessarily equal to the total incomes of direct and indirect providers of healthcare – that's an accounting identity, not an economic theory.) We will hear a lot more about fiscal unsustainability, and the virtues of payment by patients, over the next few years, encouraged by right-wing governments and random judicial interventions. The ideology may be in tatters, but the economic interests are as robust as ever. The objective is simply to shift the economic pain from (higher-income) taxpayers to (lower-income) sick people.

These predictions are in no sense "scientific"; they do not arise from any clearly articulated and progressively expanded body of tested and confirmed theory (much less from a set of mathematical equations!). They are generalizations based on long observation of the behaviour of healthcare systems, and from a (small) number of previous recessions. They may be right or wrong – I'd bet on them, actually – but they are not science. Any disciplinary roots they have are in history, watered with a squirt of logic.

But the almost total failure of economists to predict the onset, and certainly the severity, of the current crisis raises deeper questions about the pretensions of "economic science." Whether or not economics is a science has more than semantic significance. The attempt to "do science" has, I would argue, had deleterious effects on both the

methods and the results of the enterprise of academic economics.

Good economists, it has been said, come back in their next lives as physicists. Bad ones return as sociologists. Apart from illustrating the quality of economist humour, this little joke makes an important point about the disciplinary aspirations of many academic economists. Their hope, their intellectual program, is to construct theoretical frameworks that are both as mathematically rigorous and as opaque to outsiders as those of physics, and as comprehensive and successful in prediction. Progress in understanding economic phenomena will come through the careful specification (in mathematical language) of empirically testable propositions, along with increasingly sophisticated statistical methods for performing such tests. (And, of course, more data.)

In short, they suffer from physics envy.<sup>4</sup>

And they have reason. There is much to envy. But this aspiration, encapsulated in the idea of “economic science,” is fundamentally misplaced. Social phenomena, including those studied by economists, are categorically different from natural phenomena, including those studied by physicists. And the attempt to study the former by the methods that have been so successful in advancing understanding of the latter leads to a great deal of waste motion, misleading conclusions and occasionally acute embarrassment – as at present.

Following the very useful distinction introduced by Postman (1992), physicists and other scientists study *processes* while economists and other students of society study *practices*.<sup>5</sup> Processes occur in the natural world, and repeat themselves under constant conditions; it is this repetitive feature, rather than their accessibility to experiment (consider astronomy), that is essential for the application of the methods of science. The “Laws of Nature” do not change, but our understanding of them evolves, and the behaviour of the entities they govern is thus determinate (subject to quantum considerations) and discoverable.

Practices, on the other hand, are characteristics of human communities, the behaviour of individuals or groups. They have an inherently arbitrary element: “There are nine and sixty ways of constructing tribal lays, and every single one of them is right.” Most importantly, practices have unique histories. One cannot study repetition under constant conditions, because there *are* no constant conditions. In the poetic paraphrase of (Heraclitus), it is impossible to step into the same river twice.<sup>6</sup> The perceptions of participants evolve with their histories; behaviour will differ in apparently similar circumstances. Information is not only imperfect but subject to revision in unpredictable ways.<sup>7</sup> Students of the other social disciplines seem comfortable with this reality; their quest for borrowed prestige goes no further than labelling themselves with the oxymoron “social scientists” and flinging the word “theory” around until it is as meaningless as “paradigm.” Only the economists seem to have repudiated Heraclitus to follow Democritus and his indistinguishable atoms.

The primary entities studied by physicists, from atoms on down, do not have indi-

vidual identities. Protons, electrons, neutrons and the rest of the particle zoo are interchangeable members of classes of objects. Having no identity, they do not pay the price of mortality. They may change their forms, dividing and re-combining, but the dance of the particles has no beginning and no end, save perhaps on a cosmological scale.

The various “representative agents” of economic theory – hypothetical consumers, firms and others ad hoc – share these characteristics, interchangeability and immortality.<sup>8</sup> Lacking individuality and governed by very simple laws of attraction and repulsion, they become mathematically tractable and predictable. But their predictable behaviour, correspondingly, can be a very unsafe guide to the world we actually live in. In extreme circumstances, those relying on it are left in a state of “shocked disbelief” as trillions of dollars vanish to money heaven.

The mental states of those losing jobs, homes and life savings might be more pungently expressed. Who the hell was in charge here? (And how much were they paid?) Mr. Greenspan was humiliated, Mr. Madoff convicted. But the now notorious “quants” (including mathematicians and physicists), whose elaborate mathematical models of risk proved so disastrously misleading, have not had to give back their bonuses (or even their Nobel prizes). Nor have the senior executives who relied upon them – nor, beneath them, the legions of professional “wealth managers” who were paid to advise the rest of us.

The perils of following Democritus rather than Heracleitus were underlined by economic historian Niall Ferguson in a wide-ranging and disturbing interview with the *Globe and Mail* (Scoffield 2009):

Most projections are wrong, because they’re based on models that don’t really correspond to the real world. If anything good comes of crisis, I hope it will be to discredit these ridiculous models ... and a return to something more like a historical understanding about the way the world works. ... these models ... don’t really have enough data to be illuminating ... and assume this has to end this year because, well, that’s what recessions do.

In Ferguson’s view, economists’ predictions of recovery are likely to be as erroneous as their (non) predictions of collapse, and for the same reasons.

Bad economics ruins lives, just as surely as bad medicine. But there is an important difference. Medicine draws heavily on various sciences but does not pretend to be a science, and physicians (or dentists, or pharmacists...) do not have much to say about “medical theory” and what it might dictate.<sup>9</sup> Medical researchers put enormous effort into identifying, explaining and developing remedies for specific pathologies of the human condition, in individuals and (to a lesser extent) in groups.<sup>10</sup> Physicians then try to recognize such pathologies in their patients and to offer appropriate remedies.

They may not all succeed equally well. The pervasiveness of wide variations in

clinical practice unrelated to either the patient's condition or the outcome of therapy is a bit of an embarrassment, even a "blot on the reputation of the profession" – or it might be if the public were as aware of it as they now are of the failings of economists. But at least most clinicians know that "we are not all Volkswagens"; individual differences matter a lot. There is no "representative patient."

The central core of economic theory, however, is the development of more and more refined descriptions of "normal" behaviour, primarily of various forms of interaction among identical individual transactors whose objectives and scope of behaviour are precisely delineated. Pathological behaviour – murdering one's business competitors, for example, or, less dramatically, lying, cheating, theft, corruption by or of public officials and various other forms of "opportunistic behaviour" – are ruled out by assumption or simply ignored. Their study is confined to side alleys of the discipline.

There is no need to study such unscientific and grubby details, because the immortal representative agents of standard economic theory all possess full information, or at least as much as anyone else has. Opportunistic behaviour requires not only imperfect but also asymmetric information. (Bernie Madoff knew some important things that his investors did not.) It also happens to be at the core of "why healthcare is different": the institutional peculiarities of healthcare systems, such as professional self-regulation and not-for-profit organizations, are intended to protect patients against opportunistic behaviour in an environment of pervasive asymmetric information. The financial meltdown is a dramatic example of what can happen in an insufficiently regulated industry characterized by extreme asymmetry of information. There's a message here.

Now, when whole economies are acting like an organism in anaphylactic shock, the poverty of policy responses (poverty of ideas, not money!) is perhaps even more remarkable than the failure of prediction.

Increased public spending on public infrastructure is good, but these are the Keynesian remedies of the 1930s. If there is progress, it is that this time around, most economists and government authorities recognize the importance of preventing massive failures of financial institutions. Low interest rates, yes, but even rates near zero have little effect when no one wants to lend or borrow – the Keynesians referred to this as the "liquidity trap."

In fact, policy thinking has gone backwards since the post-war era. Real sciences do not generally run backwards, with hard-won understanding overturned by ideology and political agendas.<sup>11</sup>

In the 1950s and 1960s, economists studied "automatic stabilizers" – progressive taxation and spending programs like unemployment insurance that would automatically pump purchasing power into economies heading towards recession. They studied the different multiplier effects of alternative tax structures and spending programs,

and were well aware of the relatively weak impact of general, across-the-board tax cuts. They recommended cyclically balanced public budgets in which surpluses in good times were an opportunity to accumulate financial assets that would support deficits in bad times, not a signal for ideologically driven tax cuts.

But in the monetarist dark ages of the next 30 years, much of that lore was lost. The dominant ideology was “markets good, governments bad.” Left alone, markets stabilized themselves. Fiscal policies, taxing and spending, were powerless to influence the “natural” equilibrium levels of output and unemployment; in fact, fiscal interventions actually accentuated or even generated instability. (Roosevelt caused the Great Depression. Really.) Public budgets should be balanced, period, and the smaller the better.

The automatic stabilizers, we were told, were not only ineffective but also reduced economic growth. Progressive taxation and social programs discouraged work effort, savings and investment, and regulation of all kinds inhibited innovation. High and stable growth rates required only sound people like Alan Greenspan to keep a steady hand on the monetary tiller. When times are good and public budgets are in surplus, cut taxes – people know best how to spend their own money. If times are bad and fiscal stimulus cannot be avoided, well, cut taxes, eh?<sup>12</sup>

The return to the orthodoxies of the pre-Depression era – balanced budgets at all times, small governments with minimal regulation and lower taxes at every opportunity – has obvious roots in both ideology and economic interest. It has supported the dramatic increase in economic inequality over the past quarter-century. But it has also been powerfully assisted by contemporaneous trends in the orthodoxy of academic macro-economics, which I think can be attributed to physics envy.

In a harsh and analytically sophisticated critique of that orthodoxy, Buiter (2009) argues that

... the typical graduate macroeconomics and monetary economics training received at Anglo-American universities during the past 30 years or so may have set back by decades serious investigations of aggregate economic behaviour and economic policy-relevant understanding. It was a privately and socially costly waste of time and other resources.

Most mainstream macroeconomic theoretical innovations since the 1970s ... have turned out to be self-referential, inward-looking distractions at best. Research tended to be motivated by the internal logic, intellectual sunk capital and esthetic puzzles of established research programmes rather than by a powerful desire to understand how the economy works – let alone how the economy works during times of stress and financial instability. So the economics profession was caught unprepared when the crisis struck.

The practice of removing all non-linearities and most of the interesting aspects of uncertainty from the models that were then let loose on actual numerical policy analysis was a major step backwards. I trust it has been relegated to the dustbin of history by now in those central banks that matter.

In its place is an intellectual potpourri of factoids, partial theories, empirical regularities without firm theoretical foundations, hunches, intuitions and half-developed insights. It is not much, but knowing that you know nothing is the beginning of wisdom.

It is perhaps just an unfortunate coincidence that faith in the self-stabilizing nature of competitive private markets, which the theoretical models sustained, happened to align so neatly with the ideological predilections of Alan Greenspan and the economic interests of the class he represented.

The point is not that the discipline of economics is empty of content, or that economists know nothing useful for the ordering of social affairs. But I do believe that, Nobel prizes to the contrary, economics is not, need not be and indeed, by the nature of its subject matter, cannot be a science.<sup>13</sup> Attempts to make it look scientific by trying to copy the physicists have a certain air of the cargo cult; the elaborate theoretical runways carved out of the jungle by the application of advanced mathematics look sort of scientific, but no one delivers the goods.

What, though, does all this have to do with a column on health policy? Three things:

First, as noted, the economic crisis will pose serious threats to healthcare systems. Second, the pseudo-scientific methodology that Buiter excoriates is unfortunately well rooted among a number of health economists – though primarily in the United States. Third, once upon a time I used to work in macro-economic modelling, abandoning the field at the beginning of the dark ages.

Foresight? No; health was just much more interesting.

## Notes

1. Reminiscent of the Curate's Egg (*Punch*, November 9, 1895). Retrieved March 30, 2009. <[http://en.wikipedia.org/wiki/Curate's\\_egg](http://en.wikipedia.org/wiki/Curate's_egg)>.

2. "In a 1963 essay for Ms. Rand's newsletter, Mr. Greenspan dismissed as a 'collectivist' myth the idea that businessmen, left to their own devices, 'would attempt to sell unsafe food and drugs, fraudulent securities, and shoddy buildings.' On the contrary, he declared, 'it is in the self-interest of every businessman to have a reputation for honest dealings and a quality product'" (Krugman 2007). Greenspan has had a very costly education, all at public expense.

3. In an extra twist, the collapse of financial markets has wiped out hundreds of thousands of dollars from the portfolios of late-in-career Canadian physicians. To shore up their retirement assets,

many are likely to increase their working hours and delay retirement. If they do, there will be an unanticipated increase in physician billings (Sylvain 2009).

4. The work of sociologists, by contrast, is typically treated with indifference if not actual disdain. Why would anyone be interested in all that personal or institutional detail? Worse still, “[t]hey do not make modls [sic]” (Leijonhufvud 1973).
5. Postman attributes the distinction to the philosopher Michael Oakeshott, but provides no reference.

6. *Παυτα ρει, ουδεν μενει.*

7. John Helliwell captured this point nicely when, in the 1960s, he was working with a team at the Bank of Canada to develop a multi-equation model of the Canadian economy. If we develop a really good one, we must not tell anyone it exists. The equations are estimated from past transactor behaviour. If transactors know that the Bank, Finance Canada or both can accurately predict and manage economic conditions, their behaviour will change and the equations will become invalid.

8. The casual substitution by some health economists of the label “consumer” for “patient” – intellectual laziness or deliberate deception – is spectacularly inappropriate.

9. Academic nurses do, but that is another story.

10. Recognition of normality may be more problematic: “Health is merely a state of inadequate diagnosis.”

11. Lysenkoism died with its sponsor; the influence of creation science will now wane with that of its sponsors – though it will no doubt return. Neither penetrated the international scientific community.

12. This policy pattern might lead one to wonder if the Prime Minister’s Office was occupied by the head of the Canadian Taxpayers’ Foundation. But the anti-tax ideology has obviously not been confined to Canada.

13. The Prize in Economic Sciences is actually awarded by the Sveriges Riksbank in memory of Alfred Nobel. Gunnar Myrdal, who won the prize in 1974 jointly with Friedrich von Hayek, subsequently argued that Nobel prizes should not be awarded in a field so heavily freighted with ideology.

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