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EDITORIAL

Economics and Biology: The Invisible Hand and Natural Selection

Politics and economics appear to be inseparable in human affairs. While the former has no pretensions to being a science (despite university courses called 'Political Science'), economics, especially in recent times, has advanced with substantial inputs from mathematics, statistics and, at times, even biology. Governments, in democracies, always seem to be battling either a political crisis or an economic downturn, which quickly snowballs into a political battle. Markets, inflation and recession are words that have entered everyday discourse. Growth and inflation are terms widely discussed; promoting the former while controlling the latter appears to be a desirable, but elusive, goal. In today's world, where governments battle burgeoning fiscal deficits, tightening belts seems an option that spells political doom. Economic growth is presumably fuelled by low interest rates, which allow corporates to access capital at favourable terms. Control of inflation, which appears important to most ordinary people, is traditionally done by raising interest rates and diminishing the flow of money. Monetary policy is administered in mysterious (at least to the commoner) ways by central banks, the Reserve Bank of India (RBI) in our case. Ideally, central banks are, apparently, largely free of interference by the political executive. I was therefore intrigued to come across a column which asked: 'Is this man killing India's growth', a bold headline placed alongside the benign portrait of the RBI Governor, D. Subbarao (Sugata Ghosh, *The Economic Times*, 18–24 September 2011). The columnist notes that undergraduate economics teaches us that to control inflation one must sacrifice growth. Alternatively, we must accept inflation in an economy that actively facilitates growth. The writer is reminded of Robert Frost's 'two roads that "diverged in a yellow wood"', both of which cannot be traversed simultaneously. When I read this, the cynic in me was immediately reminded of a famous literary encounter. In Lewis Carroll's classic, Alice meets the Cheshire Cat and asks for directions:

'"Would you tell me, please, which way I ought to go from here?"
"That depends a good deal on where you want to get to," said the Cat.
"I don't much care where-" said Alice
"Then it doesn't matter which way you go," said the Cat
"– so long as I get somewhere", Alice added as an explanation
"Oh, you're sure to do that," said the Cat,
"if you only walk long enough".'

(*Alice's Adventures in Wonderland*, Penguin Popular Classics, London, pp. 75–76).

One school of policy makers undoubtedly subscribes to the view that if countries 'walk long enough' on the path of growth, inflation will eventually subside.

Columnists provide suggestions and solutions to every economic crisis, their prescriptions appearing almost daily in newspapers and magazines. The courses of action suggested are often contradictory. The differences of opinion amongst economists seem to be far deeper and irreconcilable, as compared to the debates in science. Theories and experiments do not appear to settle the arguments that rage over decades between economists belonging to different schools. In the 1990s, as the Soviet Union imploded and China reinvented communism, clearly separating political philosophy from economic policy, it seemed that free market, capitalist economic ideas had won the day. State controls were anathema in an arena where markets reigned supreme. Unrestrained capitalism driven by consuming greed, based on apparently sophisticated, but fundamentally flawed, models of risk assessment, has contributed in substantial measure to the recent recession in the West, with its attendant fallout across the world. Arguments about the best means of tackling the recession, in the face of ballooning fiscal deficits, have become the subject of a fierce debate in the United States and elsewhere. Curiously, even in a struggling economy there is little political support for policies that seek to raise taxes for the rich. Economists and politicians are lining up in significant numbers on both sides of the debate. In India attempts to cut subsidies on cooking gas or diesel, as a means of raising public resources are met with stout and vocal resistance. Indeed, all those who are capable of paying the right price for goods and services (which include higher education) are among the most vocal, when there is even a hint of a discussion on reducing public subsidy. Governments need resources in order to subsidise essentials like food, healthcare and education for those who are unable to afford them. Where will these resources come from if every attempt to raise taxes and lower subsidies is fiercely resisted? Uncontrolled public expenditure and the difficult issue of endemic corruption serve to ensure that government policies are viewed with suspicion in India. Ministries and departments often work at cross purposes, leaving ordinary observers puzzled and confused. There are few clear answers to the questions that confront economic policy makers; economics and politics are enmeshed in a manner that allows only short term, and sometimes risky, solutions to be implemented. Clearly, economics and human behaviour can hardly be separated. 'Behavioural economics' is, indeed, a respectable subject of study in academia. This is a discipline that draws its essential elements from psychology, bridging the gulf between the 'hard' sciences and the 'softer' social sciences.

Can behavioural economists learn from the long history of studies of animal behaviour in biology? Should sociobiology and natural selection become subjects that are routinely taught to students of economics? Is it likely 'that economists a hundred years from now will be more likely to name Charles Darwin than Adam Smith as the intellectual founder of their discipline?' The last question is raised and answered in the affirmative by Robert Frank in his book, intriguingly titled, *The Darwin Economy* (Princeton University Press, Princeton, New Jersey, 2011). Frank, a Professor of Economics at Cornell has subtitled his book, *Liberty, Competition and the Common Good*. He begins by quoting one of the founders of behavioural economics, Amos Tversky who was fond of saying: 'My colleagues, they study artificial intelligence. Me? I study natural stupidity.' Modern economics traces its roots to Adam Smith's, now iconic book, *An Enquiry into the Nature and Causes of the Wealth of Nations*, published in 1776. Smith's work must also be viewed in the context of the times. It appeared in the year the American Revolution began, over a dozen years before the French Revolution, well before the Industrial Revolution set in and the British Empire reached its high point. Smith observed and analysed a predominantly agricultural society in feudal times. He is quoted widely even today, most often inappropriately, for his immortal phrase, 'the invisible hand', which is a favourite with proponents of free markets. He used the phrase only twice in his classic work. In discussing an individuals labour and his contributions to society, Smith penned his famous lines: '…every individual necessarily labours to render the annual revenue of the society as great as he can. He generally, indeed, neither intends to promote the public interest, nor knows how much he is promoting it. By preferring the support of domestic to that of foreign industry he intends only his own security; and by directing that industry in such a manner as its produce may be of the greatest value, he intends only his own gain, and he is in this, as in many other cases, led by an *invisible hand* to promote an end which was no part of his intention. Nor is it always the worse for the society that it was no part of it. By pursuing his own interest he frequently promotes that of the society more effectually than when he really intends to promote it.' Enlightened self interest can often benefit groups; for Smith the 'invisible hand' aligned self interest and the common good. He is also often quoted for his observation on self interest: 'It is not from the benevolence of the butcher, the brewer, or the baker, that we expect our dinner, but from their regard to their own interest'. In *The Darwin Economy*, Frank notes that Smith was right when he argued that competition benefits consumers but argues that 'Smith never believed that the invisible hand guaranteed good outcomes in all circumstances'. Smith has had his share of detractors none more devastating than the Harvard economist Joseph Schumpeter: 'His [Smith's] very limitations made for success. Had he been more brilliant he would not have been taken so seriously. Had he dug more deeply, unearthed more recondite truth, had he used more difficult and ingenious methods he would not have been understood. But he had no such ambitions; in fact he disliked anything that went beyond plain common sense. He never moved above the heads of the dullest readers. He led them on gently, encouraging them by trivialities and homely observations, making them feel comfortable all along.' (*History of Economic Analysis*, Oxford University Press, 1954)

In asking whose views are most relevant in the modern context, Smith or Darwin, Frank argues that 'unbridled market forces often fail to channel the behaviour of self-interested individuals for the common good'. He goes on to note that 'Charles Darwin saw clearly, individual incentives often lead to wasteful arms races'. Frank advances the view that individuals (and by implication corporations) can make decisions that are departures from 'rational choice'. The outcomes can be viewed 'with regret' or 'without regret'. The former arise from what Frank terms as 'cognitive errors' which can subsequently be corrected. The more dangerous outcomes are the result of 'choices without regret', since 'we typically lack both the means and the motive to alter behaviours we don't regret, even when those behaviours generate large social costs'. Frank notes that 'Smith never believed that the invisible hand guaranteed good outcomes in all circumstances'. He adds: 'The real challenge to the invisible hand is rooted in the very logic of the competitive process, itself.' He then turns to Darwin: 'One of his central insights was that natural selection favours traits and behaviours primarily according to their effect on individual organisms, not larger groups. Sometimes individual and group interests coincide… and in such cases we often get invisible hand-like results…. In other cases, however mutations that help the individual prove quite harmful to the larger group. This is in fact the expected result for mutations that confer advantage in head-to-head competition among members of the same species'. In a chapter titled 'Darwin's wedge', Frank emphasises that natural selection, with its imperative of ensuring reproductive fitness in a relative sense, must be understood to explain the natural world. In extrapolating Darwinian principles to the arena of market economics, Frank notes that 'even perfect competition will not always guide behaviour in ways that promote the common good. Individual and group interest often diverge sharply… and in such cases individual interest generally carries the day.'

Sociobiologists who study altruism may well relate to Smith's 'invisible hand', while economists turn to Darwin.

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