



the economy, he always saw the connections with politics and culture and, above all, he located all those interrelationships in the constantly changing historical context. It is my view, this, this wide-ranging approach, together with his profound sense of social responsibility, that created and shaped the community of research that originated under his influence in SPRU and has spread all over the world.

Whenever I had limited time and asked his advice as to what to choose among alternative tasks, he always told me to give priority to the young. For him, students were the bearers of the future and it was to encourage their creativity and strengthen their confidence that he wanted to give his best efforts.

We follow with the views of Richard Nelson on Chris Freeman <sup>2</sup>:

What Chris accomplished, what he has left as his legacy, is quite remarkable. He managed to father a true intellectual community, of scholars who come from very different backgrounds, and who have different particular interests, who nevertheless now think about a broad subject-technological change and its sources and economic impacts-in pretty much the same way. We speak the same language. We have shared beliefs about what is going on, and how the various aspects of the system work. We clearly welcome each other's company, and learn from each other; as the community is so strong and durable that we now are into our third or fourth generation, and continue to hold together. If I were asked to write a paragraph on my thoughts on Chris, this would be it...

Next a view from Luc Soete on Chris Freeman<sup>3</sup>:

My thoughts, my writings, my attitude to colleagues, even my lifestyle has been strongly influenced by Chris Freeman. My first joint paper with Chris was in 1979, the last one in 2009. It was 30 years of intellectual inspiration, of intense collaboration and mutual recognition. Of joint trips and conferences, of staying over at each others' place discussing the world's problems. If there is one thing I learned from him it is modesty: modesty in our understanding of the complexity of change whether technologically, socially or economically driven, but also modesty in explaining things to others. We, intellectual academics cocooned in our secure, high income, tenured environment, know so little of change, of the challenges of all those practitioners of change, having to deal with the day to day problems of insecurity, low income and temporary job opportunities...

And from Bengt Ake Lundvall<sup>4</sup>:

I got to know Chris Freeman around 1980. He became a great friend who loved football, a glass of beer, bird watching and a good joke. I remember Chris also as a great intellectual - always curious and open to new ideas. He did not accept to be locked up in a discipline or an ideology. More than anything he wanted to understand what was going on in order to contribute to a better world. His solidarity with young scholars, underdogs and poor countries was constant. He showed by his example that you can be a true academic without being pretentious. He will be missed by us who had the privilege to have him as friend and teacher. But we are many who will carry on his ideas and vision of the world.

The view from Banji Oyelaran-Oyeyinka<sup>5</sup>:

What I remember up to this day about Chris is a scene at the tea/coffee place while we were at the old Mantell Building in SPRU. I was just a new PhD student and here were a group of young upstarts mostly at the Masters level arguing animatedly with Chris Freeman! He was neither surprised nor offended even though on the subject matter these young students were clearly out of their depth. He was patient, very sympathetic and systematically explained all the issues. That for me was amazing humility: the mark of the greats. He belong to the greats. He taught us all so much.

A view from Raphael Kaplinsky on Chris Freeman by drawing some comparative insight how Richard Stengel who contributed in editing the book *Long Walk to Freedom* by Nelson Mandela<sup>6</sup>:

In the early 1990s Chris and I made a joint visit to Cape Town in South Africa. Chris frequently reminded me of this visit – he was shaken by what he had seen in the townships, he thought Cape Town sensationally beautiful, and of course there were the birds...

As it happens, when Carlotta emailed me about Chris's death, I was on vacation in Greece, reading a book entitled *Mandela's Way: Lessons on Life*. It was written by a journalist for Time Magazine (Richard Stengel) who had spent three years in the close company of Mandela, assisting him with his autobiography. On the basis of this close contact with Mandela, Stengel distilled 15 "lessons" to be learned from Mandela. As I read this book, I couldn't help but be struck by some close parallels with Chris, even though I knew that Chris would be aghast to be thought worthy of being placed in

such close juxtaposition to Mandela.

So here are the lessons, and how I think Chris scored...

1. Courage is not the absence of fear – Chris drove a tank in World War 2, he saw action, and spoke openly about the fear in combat.
2. Be measured – Chris was seldom unprepared or intemperate.
3. Lead from the front – Chris founded, and the Directed SPRU for many years.
4. Lead from the Back – Need I say more! This was the hallmark of Chris' leadership of SPRU.
5. Look the part – Chris failed dismally on this score - that is, if he was aiming to be a President. He didn't do badly as an academic but even then he was sometimes underdressed for the part.
6. Have a Core Principle – Chris was integrity.
7. See the Good in Others – Always, but it meant amongst other things, that one couldn't really rely on Chris as a referee.
8. Know your enemy – Failed: Chris was not Machiavellian enough to concentrate on his enemies (not that there were many).
9. Keep your Rivals Close – as in 8 above.
10. Know when to say No – Failure!
11. It's a Long Game – With distinction.
12. Love Makes a Difference – His family and close friends can easily testify to this one.
13. Quitting is Leading Too – Demonstrably: Chris led the way in giving way as Director to become a regular Fellow of SPRU, and then at Maastricht.
14. Its Always Both (being comfortable with contradictions) – Chris knew right from wrong, but he also knew that at least in personal matters, there were shades of greys.
15. Find your own Garden (Mandela loved tending his plants) – For Chris, it was his birds.
16. I would like to add an additional lesson, applying to both Mandela and Chris.
17. The measure of a person is not so much what they do in their life, but what they leave behind – Pass with Distinction

A view from Calestous Juma<sup>7</sup>:

Chris Freeman's indelible legacy is that he led by example. He is undoubtedly the father of field of science policy and innovation studies. But one would have found it difficult to make such a statement and get away with

it. This is mainly because he had a demeanour to him that combined deep intellect with unflinching humility. He led not because he was a pioneer but because he was admired. This personal quality made it easy for Chris to extend his influence in an effortless way. I was not a direct student of him and many of my contemporaries worked hard to have him as a thesis advisor. I did not find such direct interaction necessary as his personality influenced those around him irrespective of whether they were working directly with him or not. It is not accidental that while still at the University of Sussex I conceived the idea of creating the African Centre for Technology Studies (ACTS), Africa's first independent science and innovation think tank. ACTS itself has helped to inspire several generations of policy analysts. If Chris were alive he would deny that he had any influence on any of that, which would be in keeping with his indelible legacy.

From Hasa Mfaume Mlawa, Tanzania<sup>8</sup>:

Chris Freeman has undoubtedly been a scholar (not merely an academic) of his own class in this generation. This has been underscored by nearly everyone who wrote and said something to celebrate the life and works of this great scholar. In addition, Chris was a very kind and generous person. He loved people – of all status and social standing. And those who knew him more intimately (the likes of Geoff Oldham) tell us that Chris was an amazing family man – he loved his family so fondly and passionately. I would like to add one other attribute of Chris, in addition to those mentioned above – his strong commitment, desire and passion to create, nurture and sustain SCHOLARY NETWORKS around the world in a field he spent almost his entire life to develop – Economics of INNOVATION.

I had also responses from Andrew Jamison who said though he is not an economist, but of all the works he read on innovation, he found that the work done by Chris to be the best and the clearest.

Notes on Chris from José Cassiolato and Helena Lastres, Brazil<sup>9</sup>:

Chris first came to Brazil in August 1982 when he delivered the keynote speech in an International Seminar, which aimed at discussing the crisis which was unfolding. It was also a moment when Latin American scholars dealing with development were coming to terms with internal and external criticism of the Latin American Structuralist School. Chris had a strong participation in the preparation of the seminal OECD 1980 document "Technical Change and Economic Policy", which not only challenged the orthodox analysis of the crisis but also offered a much more realistic alter-

native incorporating the technological dimension and was publishing his book "Unemployment and Technical Innovation: a Study of Long Waves in Economic Development".

In the paper he prepared for the seminar (Innovation and Long Cycles of Economic Development) he explicitly pointed out that "underlying process structuring the current economic crisis must, in particular, take into account the theory of long cycles advanced by Joseph Schumpeter (1939), who more than any other 20th century economist attempted to explain growth largely in terms of technical innovation. Thirty years ago one could find in Chris' thoughts explanations for what is still happening today.

His lecture had a tremendous impact on the Brazilian and Latin American heterodox ideas on development as it opened up a possibility of integrating neo-Schumpeterian analysis with the Latin American political economy of development based on structuralism. In fact one could argue that the Latin American response to the neoliberal paradigm of the last 20 years rests largely upon the results of such integration that was permitted by reading and discussing Chris' contributions.

Even though he had such authority, Chris was always very modest when asked about lessons of his ideas for our underdeveloped reality. Radically differently from most Western "experts" who keep lecturing and giving advice and recipes when confronted to the complex realities of underdevelopment, Chris always suggested that we in the developing world would need to find our own answers instead of searching for recipes advised by foreigners, as each National System of Innovation is an unique social, cultural, political and economic construct.

His idea that innovation was a social, specific and impossible to be replicated process was associated to an interest for successful social, political and technological experiences, in different parts of the world. We remember in Lewes, in the late 1980s when we were in our DPhil programme, that he asked about what was behind a Brazilian produced apple that we could buy at any supermarket in England and the public transport system in a Brazilian mid-size city, he heard about at BBC world radio.

The importance of Chris' ideas for development thinking is immense. To learn from him and to have shared his wisdom and character was a privilege for those who had a chance.

## **2. Continuing Freeman's Research Legacy**

In a tribute Giovanni Dosi wrote on Chris Freeman to the journal of Science for Public Policy (2010: 630), he observed: "... well beyond the recognition and admiration in several communities which he contributed to establishing, for quite some time he had deserved the highest respect in economics. He was one of the most prominent founding fathers of the economics of innovation as a distinct sub-discipline of social science."

In a paper presented at the DRUID Summer Conference 2006, Jan Fagerberg did an interesting study by asking the question: Is there a Community of innovation Scholars? He recognised despite the daunting task of finding effective coordinating mechanisms, three possible routes. The first is leading academic scholars, the second, participation in professional associations/conferences and the third is academic scientific publication outlets. He employed cluster analyses to find out which of these factors and how they embed a community of practice by providing shared sources of inspiration. What he found out was striking. It is Richard R. Nelson and Christopher Freeman, arguably, that emerged as the most influential scholars in the field from the 1970s onwards on their respective sides of the Atlantic (Fagerberg, 2006). It is interesting Freeman and Nelson were ranked ahead of Schumpeter, Karl Marx, Adam Smith and others in making the innovation field. Freeman was the first director of SPRU (founded in 1965). It remains to this day as the most successful academic and research institutions in the innovation field area in the world. Research Policy has also been ranked first in disseminating scientific and academic publication in the innovation field. Once again Chris Freeman was amongst the founding editors of this journal since 1972. Chris also authored the classic textbook and probably the first one on the Economics of Innovation in 1974. It is not thus surprising he shares first rank in being the leading scholarly inspirer along with Richard R. Nelson who co-authored with Sidney Winter: *An Evolutionary Theory of Economic Change*. It is thus no overstatement that Chris Freeman is a pioneer of the economic theory of innovation.

The economic theory of innovation can develop in three main directions: The first is building innovation theory research as critical of mainstream economics. The second is building innovation theory research to address the unending cycle of financial and economic cycles both short term and long term. The third is what the Globelics research community has been doing for nearly a decade now, building scholarship on science, engineering, technology and innovation for development.

The first is to build in a critical tradition in the innovation research. The economic theory of innovation is critical, but it is not enough to be critical. Alternatives to mainstream neo-classical economics must be developed

systematically with the clarity to furnish policy relevance and measurable and tangible outcomes.

It has been repeated often that mainstream economics is too detached, too disengaged, too uncomfortable with the complexity and economic realities. There is a need to embed the social, technological, environmental and physical reality and context and their hybrid condition within economics itself. The opportunity must be opened for empirically grounded and appreciated theories of innovation that can potentially produce models or policies that can assist solving real life problems. Transdisciplinary and hybrid innovation thinkers that blend scientific abstraction in connection or relations with the real world should be nurtured and mentored. Richard Nelson said economics is always mixed economy and should be analysed from such recognition and not avoiding. There is a mixed reality to economics; there is no such thing as pure economics free from the dilution of context and other intervening dimensions.<sup>11</sup> It is not purely market, nor purely state. States and markets are mixed. The challenge is how they are mixed and whether the mixing generates better outcomes or not than existing ones. Economic theories of innovation that combine the visible hand with the invisible market as driving real economic dynamics and processes are more useful to design realistic policies than those theories that promote pure market economics as ideology.

Second the economic system that dominates social life is not free from fluctuations, cycles, disruptions, crises and destructions. There is a need to position innovation research to find how economies that can regulate crises, cycles and destructions can be forged. Knowledge of how financial and economic cycles both in the short term and long term unfold exists, but ways of how to go beyond them and innovate an economy that can self-regulate such cycles that can make sense both to policy makers and the various publics, interest groups and stakeholders do not obtain yet. Innovation research can make big contribution to address the challenges in understanding to overcome economic and financial fluctuations.

The third is innovation for eradicating poverty and promoting development. The invention of the Globelics network<sup>10</sup> has been an important initiative to address development challenges with innovation research. Substantive progress has been made and will no doubt continue to be made.

### **3. Everything is moved but Chris Freeman's Memory**

At the 8<sup>th</sup> Globelics conference in Kuala Lumpur, there was the plenary session to remember the work and life of Chris Freeman. Chris continues to be present when he has actually left this world because of the work he left behind. At the Plenary in Kuala Lumpur, I related a conversation I had with

a professor from Finland in South Africa why Chris Freeman was not honoured for the Nobel Prize when apparently he has had no lack of nominations and the new economic theory of innovation is a distinct and recognisable accomplishment with impact on both the discipline of economics and policy. The Finish professor said that Chris Freeman's work was not pure economics. His thinking trespassed or transgressed the pure discipline of economics. It ventured into culture, sociology, politics and other social science fields. That can be the reason for denying recognition with a Nobel Prize of the rich and enormous original work he accomplished. I remember replying that if indeed the Nobel Prize committee refuses to award Chris Freeman a prize to him for the reasons given by the Finish professor, one can only say that Chris Freeman is the better for it for not getting it. It is precisely because mainstream economics is too detached, too disengaged, too uncomfortable with the complexity and economic realities explicated with the inclusion of the social, environmental and physical reality and context and their hybrid condition on the ground that it has not been able to produce models or policies that can assist solving real life problems. Thinkers that blend scientific abstraction in connection or relations with the real world should be appreciated not side lined.

#### **4. Concluding Remark**

The inspiration that we had for the Globelics network of scholars comes from the founder of innovation studies as duly acknowledged by Bengt Åke Lundvall on September 11, 2001 at Chris Freeman's 80<sup>th</sup> birthday when he passed on the concept note to initiate the current Globelics scholarly community to him as a birthday gift. Globelics is thriving building strong research networks between the North and the South.

#### **Notes**

- <sup>1</sup> Personal communication with Carlota Perez, 13 January 2011.
- <sup>2</sup> Personal communication with Richard Nelson, 12 January 2011.
- <sup>3</sup> Personal communication with Luc Soete, 12 January 2011.
- <sup>4</sup> Personal communication with Bengt Ake Lundvall, 13 January 2011.
- <sup>5</sup> Personal communication with Banji Oyelaran-Oyeyinka, 13 January 2011.
- <sup>6</sup> Personal communication with Raphael Kaplinsky, 13 January 2011.

- <sup>7</sup> Personal communication with Calestous Juma, 13 January 2011.
- <sup>8</sup> Personal communication with Hasa Mfaume Mlawa, 13 January 2011
- <sup>9</sup> Personal communication with José Cassiolato and Helena Lastres, 13 January 2011.
- <sup>10</sup> See <http://www.globelics.org>

## **References**

- Dosi, G. (2010), 'Christopher Freeman: A social Scientist and a Progressive Intellectual', in *Science for Public Policy*, October, p. 630.
- Fagerberg, J. (2006), 'Is There A Community of Innovation Scholars?', *DRUID Summer Conference 2006: Knowledge, Innovation and Competitiveness - Dynamics of Firms, Networks, Regions and Institutions*, Copenhagen Business School, Denmark.