Richard Goodwin: The Indian Connection

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“One thing I wanted to ask you from ... your obit[uary] on Goodwin. You refer to him spending his winters in India, in the last years of his life. I knew Joan [Robinson] used to but I had no idea he did...where did he go? Was he affiliated with any institution?”

“I am glad he had a home [in Ahmedabad] away from the awful UK winters.”

Rammanohar Reddy, e-mails to Velupillai, 22 July, 2013

* Commemorating the 60th anniversary of Goodwin’s first published contributions to aspects of Indian economics, in Goodwin (1955, 1955a and 1955b) and Choudhury & Goodwin (1955). It is, for me, a particular pleasure, to recall that his very first contribution to what I have come to call his Indian Economic Decade (1955 – 1965), begins with his not-very-well known paper in EW, the predecessor of EPW. His Indian Connections, however, go back to the joint Oxford days with his wife, Jacqueline (‘Jackie’), and the lifelong friendship that was established with the Sarabhais – which is also a partial answer to Rammanohar Reddy’s above query: ‘..where did he go? Was he affiliated with any institution’ – in India. It is ‘partial’ because the Indian Economic Decade began with an invitation by P. C. Mahalanobis to visit the Indian Statistical Institute (ISI), which he did from September, 1954 to February, 1955.
§ 1. A Preamble

“When I went a couple of days ago to my seminar [at the University of Siena], I found The BOOK [i.e., the Festschrift in Honour of Richard Goodwin (Velupillai, 1990)]. … I told you many years ago to drop it, but I must admit I am pleased that you did not. Your part is very gratifying and very well done, though I was taken aback by the reference to Nobel; if they never would give the prize to Kaldor, they certainly never will do so for me!…

Your book is a sumptuous birthday present and I send you my sincerest thanks for all the effort that such a present has meant. My [77th] birthday celebration [in Ahmedabad, India] was the most magical in my long life. It was outdoors in February on the semi-tropical garden of our old friend [Manorama (Sarabhai) 1]; she had arranged for over 200 jars with candle-like flames, around the pool, in the trees and on the ground; the party included her son and his wife (both we knew at Cambridge) and a couple of other members of the family. When I arrived in Ahmedabad, her other son asked me if I wanted to use the studio, which he has converted from the small house in which we lived many years ago. So I simply dropped all economic work and used a magnificent studio for some six weeks!”

Richard Goodwin [Letter to Velupillai, 29 March2, 1990]

1 In a subsequent, this time hand-written, letter, dated 16 Jan., 1991, from his home, Dorvis’s, in Saffron Walden, near Cambridge.
2 In the original letter ‘March’ is written ‘Marzo’; he was writing from Siena.
This opening section is meant only as an exercise in a general introduction to a few nuggets of the personal factors of Goodwin’s *Indian Connection*.

Section two, then, focuses on the *Indian Economic Decade*, which – during a decade that spanned from about the mid-1950s to the mid-1960s – resulted in fundamental insights into the *Optimal Growth Path for an Underdeveloped Economy* (Goodwin, 1961). It was only in this period that he harnessed both dynamic programming and optimal control theory\(^3\) to frame applied problems of planning – although their ‘residual’ influences appear also in his highly innovative *Elementary Economics from the Higher Standpoint* (Goodwin, 1970; see the last chapter\(^4\)).

It must also be mentioned that his early work on constructing the *first Indian Input-Output Table* (Goodwin and Choudhury, 1955; cf., also Ghosh, 1968\(^5\)), was a reflection of his mastery of the mathematics of linear, multisectoral, models. Goodwin always walked on two solid theoretical legs: *structure*, to be investigated by linear, multisectoral, models of the economy; *dynamics*, by nonlinear, aggregative, nonstochastic, nonoptimum, disequilibrium models of the macroeconomy. To the inspiration derived from Schumpeter, Keynes and Harrod – buttressed by the geometric dynamics of Balthasar van der Pol and Ph. Le Corbeiller (and many years later, of Otto Rössler) – for implementing the latter approach, was, thus, added the Leontief scheme for the former.

The concluding, third, section returns to a part of the personal theme which formed the first section.

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3 Both, in its *classical calculus of variations* senses as broached by Ramsey (1928), and the later, more ‘modern’ approaches via an invoking of one or another variant of *Pontryagin’s maximum principle*.

4 He gave me his copy of Nemhauser’s eminently pedagogical book on *an Introduction to Dynamic Programming* (Nemhauser, 1966), where that he worked assiduously in mastering this field is copiously evident.

5 Ghosh pointed out that (*op.cit*, p. 12; italics added):
   ‘The *first* input-output table for India was constructed in the Indian Statistical Institute under the direction of Goodwin and Choudhury.’
It may well be the case that Goodwin’s famous essay in the Dobb Festschrift – *A Growth Cycle* (Goodwin, 1967) – will be remembered when most of his other pioneering contributions become curiosa belonging to the increasingly neglected field of the *History of Economic Thought*. My own view on this, endorsed only in personal communications by Goodwin, some reported in this paper and others in a companion piece (Velupillai, 2015), is that it was nothing other than a stepping stone to his eventual satisfaction with its three-dimensional dynamic variant, as a repository of the *Rössler Band* (Goodwin, 1990, 1991; Rössler, 1976). This was because it encapsulated his *Occamist* modelling strategy, implemented on the basis of Harrod’s insight that capitalism’s dynamics must come to term with its one, inescapable, fact of the minimum limit of constrained resources – whether employment, or whatever.

What, however, is little – or, entirely – unknown is that the genesis of the model of *A Growth Cycle* was a fortuitous after-dinner conversation with *J. B. S. Haldane* in the library of the Indian Statistical Institute (ISI), which was located in the home of P.C. Mahalanobis, in 1955. During this conversation Haldane had suggested to Goodwin that the ‘best way to model the contradictions of capitalism was to consider it a partly complementary-partly hostile system.

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6 Remembrances of Putnam’s sentiments, expressed in his pungent review of Shadows of the Mind, by Roger Penrose (Putnam, 1995, p. 370; italics added), come to mind:

“*Shadows of the mind* will be hailed as a ‘controversial’ book, and it will no doubt sell very well even though it includes explanations of difficult concepts from quantum mechanics and computational science. *And yet this reviewer regards its appearance as a sad episode in our current intellectual life.*”

I regard the ‘illegitimate fame’ of *A Growth Cycle*, especially of many heterodox economists, ‘a sad episode in our intellectual life’. Very few who use it as a repository of one or another kind of model of the ‘class struggle’ are familiar with the mathematical infelicities of the model (Desai, 1973 and Desai, et.al., 2006, are notable exceptions to this ‘rule of thumb’).

None, to the best of my knowledge, are remotely familiar with the origins of *A Growth Cycle* – during an episode belonging to Goodwin’s *Indian Economic Decade*.

7 Much of this is discussed in detail in Velupillai (2015). Many, like, Jolink (1995), continue to claim that Goodwin relied on the one, inescapable, macroeconomic, nonlinear constraint, provided only by (full) employment of labour. This is demonstrably incorrect.

8 The almost legendary modern *Renaissance Man*, J. B. S. Haldane, died a naturalized Indian in Bubaneswar, India, in December, 1964.

9 This narrative is based on a conversation with Goodwin, at his home, Dorvis’s, in Ashdon, in 1976. I have no written document to substantiate my ‘story’, but it was first reported in my Cambridge doctoral dissertation of 1979, *supervised and endorsed by Richard Goodwin*. My brilliant student, Ilker Aslantepe, points out that the Goodwin-Haldane conversation must have taken place in *September, 1954*. His observation is based on a thorough investigation of the ISI reports for the relevant periods.
along the line of the Lotka-Volterra Prey-Predator dynamics.’ That suggestion, at the initiation of the Indian Economic Decade, in India, at the home of the Indian most associated with the planning machinery in India, by a scientist who was to choose India as his (second) home, was instrumental in Goodwin’s decade-long search for a way to encapsulate the contradictory nature of capitalisms dynamics in the Prey-Predator system of Lotka-Volterra. It is almost serendipitous that A Growth Cycle had its first non-Cambridge public appearance in 1965 – the end of the Indian Economic Decade – in Rome, at the First World Congress of the Econometric Society.

But the mathematics that depicted the economic dynamics in A Growth Cycle was not that which dominated Goodwin’s contributions to economic analysis during the Indian Economic Decade. It was neither multisectoral economics, nor optimal growth formulations of aggregate dynamics. These are the twin horns of the Bull that Goodwin harnessed, and mastered, in his applied and theoretical contributions of that fertile decade. On the other hand, he did seek to anchor his assumptions on dynamical systems that could be associated with maximum principles, sometimes explicitly, often implicitly.

§ 2. The Indian Economic Decade

“[You have escaped to LA only a couple of days before we hope to escape to India…]. We go to Delhi & then on to Ahmedabad in the Gujerat – where we live in a lovely walled enclosure with several members of the family. Anand, the eldest son of our friend Manorama, has a N.Y. sculptress as a companion and he has transformed a small house, which we formally stayed in, into a marvelous studio which, I trust, will be vacant and available to me for painting; we will be there for 6 weeks.

Richard Goodwin (Letter to Velupillai, 16 January, 1991)

Goodwin’s Indian Connection, in the specific sense of the way his six-month sojourn at the Indian Statistical Institute (ISI), then led by imaginative purposiveness by P. C. Mahalanobis, determined two particular developments of his theoretical, economic, tools: the mathematics of optimal planning, from a theoretical point of view – most particularly on the determination of the (aggregate) optimum rate of saving, hence in the tradition of Ramsey (1928); and the

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10 Somehow the ‘warning’ in his friend Paul Samuelson’s Nobel Memorial Prize lecture (Samuelson, 1970 (1975), pp. 336-340) that very few dynamical systems – not including Goodwin’s celebrated nonlinear accelerator and the dynamic multiplier model (Goodwin, 1951a) – could be associated with meaningful maximum principles.
application of his pioneering work on linear, multisectoral, economic structures (cf., Goodwin, 1949, 1953), in developing the first Input-Output tables for the Indian economy. In this connection, his wry remembrances of the time he spent at ISI, when Ragnar Frisch was also present, has a tinge of unusual bitterness (Goodwin, 1992a, p. 24; italics added):

“When Frisch finally realized [that the only basic economic statistics in India were lodged not with the government, but in the Institute itself], he asked to be given some research assistants. The consequence for me was that I had to lose about half of the staff I had assembled to construct the first ever input-output table for India, and I had to leave before my table was quite complete.”

Strangely, Goodwin never returned, in the post 1965 period, to any kind of Optimal Growth model; but his interest in combining linear multisectoral models of the economy, usually in some variant of the Input-Output framework, remained a lifelong ‘passion’, in conjunction with his efforts to make its implicit dynamics evident via coordinate transformations that would enable him to use the rich nonlinearities at his disposal. In this way he was able also to synthesise his allegiance to Sraffa, Marx, Schumpeter and Keynes – most clearly explained and developed in his path-breaking essay in the *Ajit Das Gupta Festschrift* (Goodwin, 1974)\(^\text{11}\).

It is a singular fact that Goodwin’s applied and theoretical contributions to the above two fields can be precisely dated to Goodwin (1955, 1955a, 1955b)\(^\text{12}\), Goodwin & Choudhury (1955) and to Goodwin (1965) – i.e., an *Indian Economic Decade* (with natural spillovers at both ends).

\(^{11}\) It is particularly instructive to note that the title of this essay is: *The Use of Normalized General Coordinates in Economic Planning*.

\(^{12}\) I asked Goodwin for an English version of (1955b - at that time, in the early 1970s, I did not read French) and he responded in an undated, Peterhouse letter-headed, note (most probably, March, 1974), as follows:

‘Dear Vellupillai (sic!),
I have now found the French article you asked about and enclose it (you may keep it) – but more important I discovered a copy of the English from which I wrote the French. The English seems to be unique, so you must eventually return it to me.
Sincerely,
Richard Goodwin
The English version was titled *Growth Planning* and I duly returned it; eventually, it was published in one of the volumes of his Collected Essays. By about the late 1970s he had begun addressing me as Vela and signing off his letters to me as ‘Dick’ or, more often, ‘Your Prof.’.
Arguably, the most celebrated of his contribution in the *Indian Economic Decade* was Goodwin (1961). There are three important observations on this contribution which must be emphasized. The first is a minor point: on the exact dating of the original appearance of the arguments in the paper. As he noted in the first footnote of Goodwin (1961, p. 756; italics added):

“The substance of this paper was originally presented to the Oxford-London-Cambridge Seminar on November 10, 1956.”

In a purely chronological sense of priority in reviving ‘Ramsey economics’ (pace Samuelson, 1969, p. vi), this comes before Tinbergen (1956) – and the much later plethora of endless contributions to optimal growth theory within the neoclassical, aggregative, closures.

Secondly, as Sen perceptively pointed out, even before Goodwin ([*ibid*] was published (Sen, 1961, p. 480, f.n., 1; italics in the original):

“In an unpublished paper [Goodwin, *op.cit*] Mr. Richard Goodwin tries to find out the optimal *time path* of the rate of saving, rather than one optimal *rate* of saving for all time to come. Mr. Goodwin uses the same type of utility function as Professor Tinbergen, but his results are very different, which seems to suggest that it is unfortunate to put the question in terms of a rate of saving once for all. One of the more exciting aspects of the problem of the rate of saving is the way it changes, or should change, with the process of development.

This theme, that of the *time path* of an optimal trajectory was explained, in pure prose of exceptional clarity, yet with conviction, in *Planning The Task Ahead* (Goodwin, 1955), in the context of the concrete planning problems faced by India’s economy in those immediate post-Independence years. I conjecture, therefore, that this pioneering piece in the *Economic*

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13 Goodwin was ‘notorious’, in his early years (i.e., years before formal retirement from Cambridge University, in 1980), for the ‘lag’ between the appearance of a first draft of a contribution that subsequently became a path-breaking paper, and its final published form in a Journal or Book.

14 This ‘industry’, now transmogrified into *Optimal Stochastic Growth Theory* – and its variants – is one of the dominant *theoretical technologies* of modern macroeconomics, especially in its incarnation as the *Dynamic Stochastic General Equilibrium (DSGE)* model.

15 Sen’s paper was published in the September, 1961, issue, and Goodwin’s classic of 1961 in the very next number of the *EJ*. I have always wondered whether Goodwin was the (anonymous?) referee of Sen’s classic and perhaps, it was the catalyst that spurred him to publish his long dormant paper! Perhaps some diligent researcher will unearth the relevant documents in the archives of the *EJ*!
Weekly of 1955, coming close on the heels of Goodwin’s work (jointly with Choudhury) on constructing the first I-O tables for India, was the link between multisectoral planning models and optimal aggregative growth models that were the hallmarks on his work in the Indian Economic Decade\(^\text{16}\). His earlier work – and the contributions in the post-1965 period – were characterized by investigating the link between growth and cycles in aggregative models that highlighted Classical – particularly, Marxian – Schumpeterian and Keynesian elements (the MKS system as he ‘fondly’ dubbed them – but the ‘S’ had to double up for Sraffian, as well!).

Finally, there was the ‘last’ paper of the Indian Economic Decade, published in the Indian Economic Journal of 1965 (Goodwin, 1965), titled, A Note On Optimal Accumulation With Infinite Horizon And No Technical Progress. The Optimal Growth framework of Goodwin (1961) is recognizably evident here – but, for the rest, it is almost uncompromisingly ‘neoclassical’; it is, in fact, the only published paper by Goodwin that can be referred to as ‘neoclassical’\(^\text{17}\). Almost, only because the mild concession to the Cambridge (UK) stance is through the use of inverted commas in the word ‘capital’ (ibid, 445)!

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\(^\text{16}\) Goodwin’s correspondence with Maurice Dobb, in the period 1958-1961, squarely within the Indian Economic Decade, lends substantial evidence to this point. In particular, Dobb’s letter to Goodwin, dated 15/11/1958 (appended to this paper) – and, of course, substantiated also by Dobb’s explicitly stated indebtedness to Goodwin in preparing An Essay on Economic Growth and Planning (Dobb, 1960, p. vi; underlined emphasis added). The letter from Dobb, in response to one by Goodwin (to which I have no access), also shows, clearly, that the connection between the material balance methods of early Soviet planning models and Leontief’s (spelled Leontiev by Dobb, in the letter appended) development of the Input-Output model was very well known to both Dobb and Goodwin. In fact, during his lectures at Cambridge in 1973-74, Goodwin always mentioned, as an aside, the story of Lentioef’s father – then at the Soviet Embassy in Berlin – bringing home the first materials balance sheet of the Soviet Planning system. The subsequent reaction of Leontief, then a student of Physics and of Ladislaus von Bortkiewicz, in developing the now famous I-O model, remains a story that deserves a complete elucidation (although partial renditions are available in the literature).

\(^\text{17}\) In the early 1980s, when I discussed (intensively) with Goodwin, on the composition of the two collected volumes of essays (Goodwin, 1982, 1983), I did manage to persuade him to include some of his papers, the contents of which he was not sure warranted re-publication (for example, Goodwin, 1955a, in its English translation as On Growth Planning (as well as Goodwin, 1951b, 1953). But he refused, in spite of my many pleas, to include Goodwin (1965)!
The zenith or climax of the *Cambridge Controversies in Capital Theory* (Harcourt, 1969) came about as a result of an elementary mathematical mistake made by Levhari (1965)\(^\text{18}\), in trying to ‘defend’ the stance taken by one side in this debate; and this was in 1965\(^\text{19}\). The origins can be dated to the two classics by Robinson (1953/54) and Kaldor (1955/56) – i.e., the proverbial ‘half-life’ of the key issues that defined and delineated the subject matter of the controversies was almost exactly the *Indian Economic Decade*. But Goodwin took no part in the debate during this intensive, defining, period (although he returned to Capital theoretic themes, in a specifically Sraffian sense, from about 1974 – i.e., beginning with his contribution to the *A. K. Das Gupta Festschrift* (Goodwin, 1974)\(^\text{20}\).

The paper by Goodwin (ibid) is, apart from the mild concession mentioned above, is thoroughly neoclassical, with the full paraphernalia of the usual assumptions: an aggregate linear, homogeneous, production function, a mildly generalized version of the standard ‘Bernoulli’s logarithmic utility function’ the Ramsey Rule, ‘steady, neutral technical progress’ (despite the title of the paper!), and so on – essentially an entirely supply-side model.

However, Goodwin, unlike the neoclassicals, does point out a crucial weakness – from a strictly *numerical* and *computational*\(^\text{21}\) point of view – of this type of model (*ibid*, pp. 446/7; italics added):

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\(^{18}\) Had Levhari read, and understood, the exchange between Sraffa and Newman of June, 1962, he may not have made the elementary error on *indecomposability* that he did make in the above piece. But there was no obvious way he could have known of this exchange, which was made available to the academic community, first in the *Krishna Bharadwaj classic* (Bharadwaj, 1970). But, then, had Levhari not made the mistake he did make, there may not have come about the ‘*Summing Up*’ piece by Samuelson which, effectively declared the Cambridge (UK) stance as correct and, essentially, brought to an end the theoretical controversy. Everything that came later was simply an *Afterglow* (Harcourt, 1975).

\(^{19}\) Most of the papers – particularly Pasinetti (1966) – published in the November, 1966, QJE, were already in circulation in 1965.

\(^{20}\) It is, surely, an interesting fact that of the three original *Patrons* of the *Cambridge Journal of Economics* (cf., Pasinetti, 2005, p.838), Richard Goodwin, Luigi Pasinetti and Joan Robinson, only Goodwin did not contribute at all to the *Cambridge Controversies in Capital Theories*, during the Indian Economic Decade.

\(^{21}\) That these are *two different concepts* is, to the best of this author’s knowledge, *never emphasized in the neoclassical literature*, whether it be macroeconomic, microeconomic, game theoretic, IO (not I-O), or whatever.
“The end point is a quasi-stable equilibrium motion, but one which is *in practice* unstable since the unstable element will always dominate. Thus *in practice it will be neither possible to find the right initial* γ nor to hold to the correct path if we could ever find it.”

However, what I find most remarkable is that the three issues in macroeconomic modelling, that one associates with Richard Goodwin, *nonlinear cycle theory*, *Keynesian Monetary theory* and the *Schumpeterian theory of innovation*, are entirely absent in the pioneering works of the *Indian Economic Decade*! They are replaced by a theory of *optimal policy for an underdeveloped economy*, applied *multisectoral modelling* and *optimal growth theory*. Neither the first, nor the third, of these latter triptych played a (serious) part in the work of this supreme theorist, in his post 1965 contribution to economics; the second appeared copiously in his theoretical work in capital theory and only once in serious applied work with policy implications (Goodwin, 1980)22.

§ 3. Beyond the Indian Decade

“In addition to all this, is the fact that thoughts reduced to paper are generally nothing more than the footprints of a man walking in the sand. It is true that we see the path he has taken; but to know what he saw on the way, we must use our own eyes.”

Arthur Schopenhauer (italics added)23

‘To know what [Goodwin] saw on the way’, in any reasonably accurate and perceptive way, one would need his eyes, and understand completely (sic!) his way of looking at (the dynamics) of events. This is especially so for the *Indian Decade*, given the immense complexity of the tasks faced by that country’s economy. Goodwin, a master of abstract theorising, was also a *maestro* at simplifying usefully – for, if not, his abstractions would have been pure speculation.

Goodwin left the Indian scene after the fertile Indian Economic Decade, for almost two decades. In the intervening period, apart from occasional Indian ‘episodes’ – as, for example,
via his contribution to the *A.K. Das Gupta Festschrift*, his professional friendships and admiration for Meghnad Desai and Amartya Sen\textsuperscript{24}, his more personal relationships with his half-Indian godson\textsuperscript{25}, a few interactions with Indian colleagues\textsuperscript{26} in the Cambridge economics faculty – he did not involve himself with theoretical or practical issues of planning in any Indian context.

Many years after the *Indian Decade*, he met and grew fond of, and appreciated the intellectual depth of, Sukhamoy Chakravarty (Goodwin, 1992). In ‘discovering’ Chakravarty, he – I think – met someone of kindred spirit: a supremely competent theorist, combined with a passion for the application of theory in practically useful, politically enlightened, policy frameworks. He greatly admired Chakravarty’s commitment to the implementation of sensible, socially meaningful, policy measures to enhance the performance of the Indian economy, without compromising the social consequences – for example, in the form of increasing wealth and income inequality.

Goodwin rarely wrote any joint paper; he was even more reticent in collaborating to produce jointly edited books. His esteem for Chakravarty is evidenced by the fact that one of these rare occasions was when he jointly edited a book on von Neumann, with Chakravarty (Chakravarty, et. al., 1988).

They – Chakravarty and Goodwin – shared a passion for the analytical framework provided by von Neumann. But I think their interpretations of von Neumann’s assumption on joint production, in its relation to Sraffa’s work, were not very similar. Chakravarty grew, over the years, more convinced that Sraffa demonstrated all his propositions on Fixed Capital and

\textsuperscript{24} He was the external examiner for Amartya Sen’s doctoral student at the LSE, the now famous Kaushik Basu. I accompanied him to the railway station at Cambridge, on the day he went to London for Professor Basu’s doctoral thesis defense. During our walk to the station, he told me that he agreed to be the external examiner ‘only because Amartya Sen asked me’.

\textsuperscript{25} Simon Commander, but also his close friend, Jayati Ghosh, who later became a good friend of Richard and Jackie Goodwin. He was a godfather also to Daniel Strook. I came to know about this in the following way. In 1978 I attended a ‘Summer School’ on Stochastic Differential Equations, held in Cortona, Italy. The main lecturers were Daniel Strook and S. R. S Varadhan. I wrote Goodwin, from Cortona, that Strook and Varadhan were splendid lecturers. He wrote back, immediately: ‘I am cross with you for not telling me that Dan Strook was going to be one of your lecturers. He is my godson.’!

\textsuperscript{26} I am thinking, in particular of, Ajit Singh and Prabhat Patnaik.
Joint Production in constructive mathematical modes. Goodwin did not budge from his view that joint production was an unnecessary complication, and its theory not very useful in practical, applicable, senses.

In a long letter dated ’23 August, 1990’, written from his home, Dorvis’s, in Ashdon, he remarked, with obvious sadness:

“… Chakravarty .. is, by the way, dangerously ill right now and his daughter is going to India. …[eight lines later] Michael Landesmann [just – i.e., while he was writing the letter] .. told me that Chakravarty died yesterday! That sad news has rather put me off ….”

In my Economic Journal article on Goodwin (Velupillai, 1998, p. 1449; italics added), I concluded by remarking:

“They [Jackie and Richard Goodwin] divided their last years between winters in India, summers in England and springs and autumns in Italy.”

In one of his last letters to me27, dated ‘1 Jan. 1993, again from ‘Dorvis’s, Ashdon’, he wrote (italics added):

“For 3 years we have spent the winter in Ahmedabad with our old friends, and I hoped to continue this year; I have a magnificent studio (also used by top NY artists) and handmade rag paper from the Gandhi Ashram. But it was not to be ….”

References


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27 His very last personal letter to me was written at the end of 1994. After that we rang each other, to and from Belfast and Taipei. In Spring 1996, I asked him, during a phone conversation from Taipei, whether he could think of writing a piece for the Taiwan Journal of Political Economy (now defunct). As was usual with him, he said he would ‘think about it, but cannot promise’. A few months later he left us, forever.


Tinbergen, Jan (1956), *The Optimum Rate of Saving*, *The Economic Journal*, December


15. II. 58.

Dear Dick,

Thank you very much for writing so fully about the Voprosi Ekonomiki articles. I'm glad you found them of some interest. I've looked up the original article of Belkin (rather hurriedly). I see that he says that chess-board balance tables (I presume this is the same as a matrix?) were used in planning between 1920 and 1930; and that the question of 'elaborating' them (razrabotka) was discussed at the statistical congress in June 1957.

I can't find, however, that he says so many words that they ceased to use such a method between these dates (perhaps this is somewhere else in the article and I've missed it). In so far as they continued to use the 'balance method' in their planning, they as they undoubtedly did, they must have used this method in effect, mustn't they, even if they did not
call it by the name? What may have happened, I suppose, is that there was no theoretical discussion or development of it after 1930 — just a continued empirical use of it — and that this is what this (ahh) is now urging needs is overdue.

A possible explanation of all this I suggest is that the method may have got mixed up with the particular use of it made by Groman and his group for deriving plan-targets from extrapolation of past trends. The latter was the basis for the first two lots of annual "Control Figures" prepared by Gosplan in the mid-20's; but it came under severe criticism in the discussions of 1927 and '28 and '29 as imparting a conservative bias to plan-targets. There is a hint of this in one of the main Russian contributions to the Bussa conference in Turkey this past summer, the text of which Austin has lent me. He (Dyachenko, who co-chaired the thing with Austin) refers to the "bunchies method," and says "the bunchles..."
of the balance method were applied in the S.U. long before Leontiev's work appeared, during the initial period of working out of control figures for economic development. He then goes on to say (a) 'certain Soviet economists' treated the method as a means of ascertaining elementally produced trends, with a view to subordinating planning to these trends' — such treatment was rejected; (b) that the input-output method has some points in common with the balance method applied in U.S.S.R., but is essentially limited to market relationships (?!?) and is merely a perfected form of extrapolation (which he admits planning cannot completely dispense with). It looks as though he's not quite clear what the Leontiev method is; he admits it has some relationship to the balance method, but thinks of it primarily in terms of the old Groman-controversy.

Incidentally, I've just seen a
reference in the latest number of V.P. (in an article by the well-known statistician Nemchinov) to the fact that Leonid (apparently still in Russia then) wrote an article in 1925 in the Gosplan monthly on Gosplan's first control figures (the same as was presented to Keynes on a famous Sunday morning in Gosplan in the summer of 1925 when Keynes semonized to Gosplan economists on the virtues of Treasury control). This seems to strengthen the presumption that Leonid derived his method originally from their 'balance method', no doubt developing this beyond what they did themselves—possibly for fear of incurring guilt by association with the German school (I mean this to refer to the Sov. economists lack of development of it).

As regards Wednesday which I'm much looking forward to, I'd like to do as regards the black-white alternate whatever you'd like and intend to do. As I said, I've looked out my tails, and I don't think they'll disgrace you. So please say the word, as to what you would do, and I'll follow suit. Sorry to be such a nuisance.