

# DEVELOPMENT ECONOMICS: THE INTELLECTUAL DIVISIONS

PAUL STREETEN\*

## I. Cross-Currents in Development Economics

Albert Hirschman [6] has used two criteria for classifying development theories: one, whether they asserted or rejected the claim of mutual benefits in North-South relations; and two, whether they asserted or rejected the claim of mono-economics—that there is a single economic discipline applicable to all countries at all times. From this, he derived four types of economists: (1) orthodox (neoclassical) economists (accept both claims); (2) neo-Marxist and dependence economists (reject both); (3) development economists (reject the mono-economics claim—their existence requires a distinct subject—but accept the mutual benefit claim); (4) neo-Marxists (accept mono-economics claim except insofar as class determines consciousness, but reject the mutual benefit thesis).

		Mono-economics	
		accept	reject
Mutual benefit	accept	Orthodox economists	Development economists
	reject	Marxists	Neo-Marxists

One may want to quibble. There are development economists who analyze interest conflicts, and development economists who are neoclassical. Karl Marx [11] makes the point that capitalist countries exploit "backward" countries although both parties gain from exchange. And Joan Robinson wrote: "The misery of being exploited by capitalists is nothing compared to the misery of not being exploited at all" [15, 46]. Mutual benefit is not denied.

Hirschman [6] attributes the decline of development economics to a combined (though not concerted) onslaught from both neoclassical economics (with the charge of misalloca-

\*Economic Development Institute of The World Bank, Washington, D.C.

tion resulting from deviation from neoclassical principles) and neo-Marxist economics (with the charge of justifying dependence and exploitation). He attributes the fall also to the political disasters that struck many countries of the Third World.

In 1963 Dudley Seers [16] argued (as Paul Rosenstein-Rodan 20 years earlier) that the economics of the North does not apply to the different societies of the South.<sup>1</sup> The "economics of the special case," applicable to advanced industrial societies, had to be broadened to encompass different relationships. Stimulated by the generalization of the "special case" of fully employed economies to conditions of industrial unemployment in advanced countries, Rosenstein-Rodan, Arthur Lewis, Joan Robinson, and others broadened our vision to encompass underemployment and low labor utilization in underdeveloped countries.

Hirschman [6], among others, has noted that the exploration of Southern societies, with different tools of analysis, has often led to new illuminations and discoveries in our own Northern societies, thereby reestablishing the unity of the analysis. Hirschman cites the case of underemployed rural labor, "development with unlimited supplies of labor," the role of labor surpluses in European economies, and theories of dual labor markets, on the one hand, and the analysis of underemployed resources in developing countries—that have to be activated—and theories of satisficing and X-efficiency, on the other. My own work on the production function, in collaboration with Gunnar Myrdal [12], similarly showed that many of the criticisms originally developed for South Asia also apply to Western Europe and the USA. Dudley Seers' odyssey from "The Economics of the Special Case" to the discovery of dependency and dominance within Europe, and even within a single European country, is another illustration. Structuralist theories of inflation, originally constructed for underdeveloped countries, found new application in the advanced countries of the North. The recent work on technological transformation in developing countries also turns out to teach lessons for developed countries. These and other new insights mean that our understanding of the economic structure of the West will have been modified and enriched by an unbiased perusal of other economies.

The move toward awareness of the universal nature of some problems originally explored in the development context was accompanied by growing differentiation of countries in the Third World to the point that it could be questioned whether a special branch of economics—development economics—applied to all. To some extent this was the result of the analysis of the coexistence of different countries at different stages of development, and their interaction. It was thought neither that each country must be studied uniquely, nor that useful generalizations can be made for all countries in the Third World, but there was a move toward a country typology, regarded as useful for the application of policies. The principal criteria in this typology were country size (measured by population), relevant to the importance of foreign trade and the scope of making use of labor-intensive techniques for exports; degrees of dualism and labor surplus, relevant to the application of different models of development; endowment with natural resources, and particularly, an indigenous energy base which distinguishes oil exporters from oil importers, relative size of the agricultural and the industrial sectors, and government strategies.

It was the combination of the two trends—the discovery that many problems of the countries of the South are shared by the North, and that few problems are common to all countries of the South—which contributed to the decline of the early certainties, or at least large generalizations, of development economics.

The analysis of these various intellectual divisions as five cross-currents in development

1. Robert Solow has reminded me of Stephen Potter's well-known ploy to acquire a reputation for profundity and sophistication. The reply to any generalization is: "Not in the South."

economics can shed light on the rise and decline of development economics as well as future prospects. The first cross-current is one of mutual benefits against the idea of conflict.

## II. Mutual Benefits v. Conflict

The mutual benefit thesis is the old harmony doctrine served in a new sauce, and it is doubtful whether anybody seriously believed in it. It is also doubtful whether development economics asserted universally the mutual benefits thesis. Surely many writers saw the existence and possibility of conflicts of interest between nation states. Very few moral philosophers would attempt to construct a political theory on purely egoistic lines. Why then try to construct an international economic theory for national egoisms? Since we all accept the readiness of individuals to sacrifice their interests to the national community, the challenge of normative development economics is to construct the moral and institutional basis for applying sentiments and principles of solidarity beyond the national frontiers to the fledgling world community. There is also the obvious objection to the current fashion of the mutual interest thesis—where mutuality exists, people usually act accordingly (with some exceptions, such as prisoners' dilemma situations) and no great economic, political or philosophical analysis is needed to propagate such action. The challenging task is to show how conflicts, when they arise, can be resolved.

The current preoccupation with mutual and common interests (the two are not the same) is surprising in the presence of national policies not usually justified on grounds of mutual and common individual, household or local interests (social contract theories aside). Most of us accept the principle that the rich have an obligation toward the poor in the national community. Once this is accepted, the question arises whether humanity is a civilized community in the same sense. It is, of course, possible to reject this on social contract grounds. But there are embryonic global institutions that do render services to their members, and a social contract is not the only ground on which obligations by the rich to the poor can be justified.<sup>2</sup>

If such global obligations were accepted, the objection may be raised that national governments interfere with the discharge of the obligations of rich members to poor members. No doubt there is something in this objection. Those advocating development aid, and North-South cooperation generally, on the moral ground of the obligation to help the poor have not devoted enough time and effort to showing that such efforts actually achieve their aims, or, if not, how these efforts should be designed so that they do achieve their aims, without infringing too much on national sovereignty. The result has been an alliance of left and right attacks on aid, which, with a few notable exceptions, have not been seriously answered by the proponents of aid. The principal reason why moral obligations are accepted by governments (as well as by individuals) is that certain objectives can be achieved only through collective action, such as indivisible projects, or stepping up growth rates by adding foreign savings in the form of aid, or intervention on behalf of children of poor households, a particularly vulnerable and neglected group. In order to express each individual's moral motives in such situations, it is necessary to exercise force upon others, including oneself (through taxation), to contribute, if the aim is to be achieved.<sup>3</sup>

2. As examples, Lerner [7] and Canterbury [1, 2] have provided critiques and alternatives to social contract theory that suggest (analytically) common benefits to rich and poor from rich-to-poor redistributions.

3. Support for this view is presented by Canterbury [2, 16-18].

### III. Formal v. Informal Intellectual Sectors

Dudley Seers's [16] analogy of the two-sector developing-countries model suggests another distinction: one modern and "formal," the other simple and "informal." The analysis of the "formal sector" is cultivated by the economics departments of the established universities where students are trained in sophisticated techniques and the standards of excellence are derived from the discipline. The "informal" sector is made up of what the profession often dismisses as cranks—dissidents, "poets," journalists and novelists.

The insights of members of the informal sector have three advantages over those of the "formal" sector. First, these people often know how to communicate better with a wide audience. Second, they use their eyes and ears and tell what they observe. Third, not having been drilled (or lacking faith) in the professional paradigms and being free of the blinkers that these impose, they often treat important issues ignored by the professionals. Lacking a rigorous formal framework, their insights are often ephemeral, despite widespread impact.

The formal sector has the virtues of its defects. It attracts brilliant students and generates a body of knowledge that can be admired, taught, and elaborated; but its elegance overwhelms its irrelevance. By isolating the quantifiable and technically tractable and neglecting the rest, workers in the formal sector occasionally pour out the baby instead of the bathwater.

The informal sector has pioneered advances in our understanding of corruption, the culture of poverty and global concerns. The profession, understandably, has focused on the nation state. Concerns at a much lower level, and at a transnational level (not the same as inter-national concerns) have been relatively neglected.

Perhaps the most important function of a construction, be it a model, a theory or a paradigm, is to show up the limitations of other constructs and thereby add to the flexibility of our intellectual muscles (therapeutic), rather than to shed light on reality (didactic). The introduction of institutional considerations in the analysis of rural land-debt-wage relationships by neo-Marxists shows up the limits of neoclassical analysis, but neoclassical analysis shows equally that the crust of institutions can be broken, as well as hardened, by market forces. An analysis of intra-family relationships in terms of time allocation and maximizing behaviour can throw light on an alternative analysis conducted in terms of power relations and force, and *vice versa*. For reasons such as these, it is of the utmost importance to keep the dialogue going between different ideological schools in development studies, and not to permit a breaking up into non-communicating groups.

### IV. Flat-Earthers v. Round-Earthers

Ian Little divides development economists differently. He tells me that he does not regard stages of growth and Rostow [the distinction discussed in the next section] as being very important or dominant.<sup>4</sup> Little [8] envisions a battle between structuralists who see the world as bounded and flat, and neoclassicists who see it as round and full of enterprising people who will organize themselves effectively.

Little's distinction is an important one and underlies much of the dispute between neoclassical and structuralists. If you believe that resources, in response to the right incentives, are moved easily and quickly, at minimal costs, from one line of activity into another, so that the economy is rather like toothpaste or syrup, the implications for policy-

making and for mutual benefits are quite different from what they are if you believe that the economy consists of hard, specific pieces of capital goods, individuals trained in specific skills and located in and attached to specific areas, who can be remolded only at great cost, or after a long time, or never.

The neoclassicals stress the importance of getting prices right. Peter Timmer's dictum—"Getting prices right is not the end of economic development, but getting prices wrong frequently is"—retains validity. Everybody would agree that other things are necessary for an efficient and equitable economy, but there is disagreement about the relation between the correct prices and these other measures. According to the neoclassicals, getting prices right without the other measures is better than nothing. According to the structuralists, the combined set of measures is necessary, and the "right" prices by themselves may leave things unchanged or make them worse. Overvaluing a single element in a complex system, such as the role of prices, (on this view) is worse than overvaluing the currency. If you suffer from one type of evil (e.g. very unequal land distribution), the addition of another evil, viz. "distortion," (e.g. "distorted" low food prices) may improve things.

A difficulty with the distinction between neoclassicals and structuralists is that, though their arguments are inspired by different visions of the world, the debate is often about instruments. In this debate instruments that form part of a complex kit are then singled out and identified with their ultimate purpose. Thus the successes of the Republic of Korea and Taiwan are used by orthodox economists to propagate export promotion as the key to equitable and rapid growth. In turn, export promotion is often identified with absence of government intervention and the free play of market forces. Yet, the Republic of Korea and Taiwan promoted labor-intensive import substitution, as well as exports, early import substitution led to later exports; the labor force employed in exports is a small proportion of the total labor force, and government intervention as well as the public sector played a very important part. The singling out of export promotion through liberal trade policies and free markets is a flawed account.

The structuralists tend to be equally guilty of oversimplification. Having correctly observed and analyzed numerous occasions on which the market malfunctioned, they erroneously conclude that central state action must replace it, despite evidence that some state interventions have produced worse results. Instead of concluding that the state should incorporate the market as a powerful instrument of planning, and prices as useful instruments of policy, they dismiss them.

The deeper issue underlying Little's distinction is whether measures introduced to cushion the victims of the competitive struggle, or measures to ensure fairness in the allocation of resources, may be *counterproductive*. A large literature exists on the detrimental effects of Social Security on incentives, of equitable controls on misallocation by encouraging "rent-seeking" activities and on reinforcing monopolies by what Raj Krishna has called "first-round socialism." A smaller body of literature exists on the detrimental effects of international aid, although a good deal has been written on food aid. In these areas the advocates of the compassionate society and world solidarity have to think harder on how to achieve their objectives without cutting away the ground on which they stand.

### V. Linear v. Non-linear Paradigms

I have suggested another dividing line. The allocation to the two schools is most easily tested by a response to the well-known Lewis test: if the advanced countries were to sink under the sea tomorrow, would the developing countries (after a period of adjustment) be

4. This view was expressed in private correspondence.

better or worse off? In this Litmus test the Blues say "worse" and the Reds say "better." The distinction is, of course, related to the mutual interest thesis. According to the Blues, development is a linear path along which all countries travel. The advanced countries have, at various times, passed the stage of "take-off," and the developing countries—with pushes from their governments—are now following them.

In international relations, this view led to the call on the rich countries to provide the "missing components" to the developing countries, thereby helping them to break bottlenecks. These missing components may be capital, foreign exchange, skills or management. The doctrine provided a rationale for international financial aid, technical assistance, trade and private foreign investment. By breaking bottlenecks, rich countries could contribute to development efforts a multiple of what it cost them and thus speed up the development process. The two-gap models were a rationalization of foreign assistance. Moreover, the ultimate purpose of aid was to be rid of aid, when beyond the point of take-off, indigenous efforts are sufficient for further growth.

This linear or stages of growth view has been criticized on logical, moral, political, historical and economic grounds. Logically, the coexistence of rich and poor countries is bound to make a difference (for better or worse) to the development efforts and prospects of the less advanced, compared with a situation where no other country was ahead, or the distances were much smaller. The larger the gap and the more interdependent the components of the international system, the less relevant are the lessons of the early starters. Morally and politically, the linear view ruled out options of different styles of development. Inexorably, all countries were bound to pass through the five Rostovian stages.

Historically, the view can be criticized as excessively determinist. Germany and Russia followed different paths from the English industrial revolution; the differences were greater still for the recently industrializing countries. Economically, the doctrine is deficient because it ignores the fact that the propagation of impulses from the rich to the poor countries (and among the poor countries) alters the nature of the development process; the late comers face problems essentially different from the early starters, and the "late latecomers" again find themselves in a world of demonstration effects and other impulses, both from the advanced countries and from other latecomers, which present opportunities and obstacles, incentives and inhibitions, quite different from those that England or even Germany, France and Russia faced in their preindustrialization phase.

The Red response to the Lewis Litmus test has gained adherents with the spreading disenchantment about development and the international contribution to it. According to this view, the international system of rich-poor relationships produces and maintains the underdevelopment of the poor countries (the rich "underdevelop" the poor, in André Gunder Frank's phrase [5]). In various ways, malignly exploitative or benignly neglectful or simply as a result of the unintended impact of events and policies in rich countries, the coexistence of rich and poor societies renders more difficult or impossible the efforts of the poor societies to choose their style of development. The dominant groups in the developing countries—politicians, entrepreneurs, salaried officials, employees—enjoy high incomes, wealth, and status and, being subservient to the international system of inequality, conformity, and underdevelopment, they perpetuate it. International integration leads to national disintegration. Not only Marxists but also a growing number of non-Marxists have come to attribute a part of underdevelopment and the obstacles encountered in the process of development to the existence and the policies of the industrial countries of the West, including Japan and the Soviet Union.

According to one line of this second view, aid is a permanent feature due as a matter of right, like an international income tax, not a transitional phenomenon to be ended after "take-off." According to a more radical line, aid is itself part of the international system of

exploitation essential to maintain reactionary regimes, and self-reliant, independent development has to rid itself of it.

The conclusion drawn from this perception is that the developing countries should put up barriers between themselves and the destructive intrusions of trade, technology, transnational corporations, and educational and ideological influences, and should aim at "delinking" or "decoupling," at pulling down a poverty curtain, at insulating and isolating themselves from the international system. Paradoxically the proposal of the socialist or radical of "delinking" was triggered by capitalist hostility to the Soviet Union, the People's Republic of China, and Cuba.

Proponents of the Blue perception point to Singapore, Hong Kong, Taiwan, Republic of Korea, and West Africa as outstanding examples of the benefits from commercial integration into the international system; and they cite the introduction of export crops into the colonies—rubber into Malaya, cocoa into the Gold Coast and Nigeria, tea into India—as powerful stimuli to their progress. Central Asia, large parts of Africa, and the interior of South America, on the other hand, lacked contact with the West and are among the least developed areas. Proponents of the Red perception point to Indonesia, India, the People's Republic of China, and Japan. The country with the greatest degree of contact with the West is Indonesia, where the Dutch were present for over 300 years. Next comes India, where the British gradually expanded their footholds; then China, where trade along the coast created enclaves from which trade with the interior was forced on the country; last Japan, where the Tokugawa enforced a policy of no contact with the West except through a small Dutch trading group. Yet, they point out, Japan started to grow first and made rapid progress; China is well on the way; India comes next, and Indonesia last. The order of economic advance is the reverse of the degree of contact with the West. Hirschman observes that in Latin America "industrial progress was particularly vigorous during the World Wars and the Great Depression, when contacts with the industrial countries were at a low ebb" [6, 17].

Inevitably, a brief summary of the two views is bound to oversimplify. Rostow for the first kind of perception, and Frank for the second, are the popular rather than the academic models. Raul Prebisch, Hans Singer, Gunnar Myrdal, Albert Hirschman, and Francois Perroux, not to mention Marx and List, had long ago developed approaches that separated "spread" or "trickle down" effects from "polarization," "backwash," "domination," or "immiserization" effects. And many doubted from the beginning whether everything would be fine if all countries pursued only free trade policies and established competitive markets. But probably because of their more careful formulations, the impact of their thinking, though important, was "peripheral" not "mainstream." More recent proponents of the second perception include Samir Amin, E. A. Brett, F. E. Cardoso, Franz Fanon, Celso Furtado, Johan Galtung, Colin Leys, Ann Seidman, Osvaldo Sunkel, and Tamas Szentes.

A reconciliation between the two perceptions (namely, that development can be speeded up by global economic integration and that underdevelopment is caused and perpetuated by it) is possible along the following lines. The advanced industrial countries emit a large number of impulses of two kinds: those that present opportunities for faster and better development than would otherwise have been possible, and those that present obstacles to development, that stunt growth. I submit that the Lewis test is not helpful in presenting the problem, however useful it is as a Litmus test for sorting out ideologies. The developed countries propagate a large number of impulses to the developing countries. Reasonable men may differ about the net balance of these impulses; for example, whether any defects of admitting transnational companies are offset by the availability of a stock of scientific, technological, and organizational knowledge, or whether the harm done by

the brain drain is greater or less than the benefits from foreign technical assistance, or whether the inflow of grants and loans at concessionary interest rates is counterbalanced by aid-tying, faculty project selection, hard terms and conditions, and flight of capital.

The interesting question then is not "do the developing countries benefit or lose from their coexistence with developed countries?" but "how can they pursue selective policies that permit them to derive the benefits of the positive forces without simultaneously exposing themselves to the harm of the detrimental forces?". Looked at in this way, the question becomes one of designing *selective* policies for aid, trade, foreign investment, transnational companies, technology, foreign education, movements of people, and so on. Neither complete insulation nor wide-open integration but a policy of enlightened discrimination would present the correct answer.

This approach does tend to take a somewhat Olympian or Platonic view of policy making. If policies are regarded as a function of political interest and pressure groups, the picture changes. The Reds would say such policies are impossible and the Blues that they are unnecessary. My reply would be that although I regard policies as partly dependent variables, determined by all the other variables in the social system, a process of experience and learning, as well as of constituency building for reforms, is capable of bending them in the correct direction.

According to this view, only those transnational corporations deemed to make positive contributions would be welcomed on favorable terms. Trade would be neither completely free nor autarkic, but, combined with a system of excise taxes and domestic controls, would discriminate according to social priorities. Exports would be taxed where demand elasticities are favorable. Not all forms of foreign technology and foreign products would be adopted without modification, but only those suited to the needs of the country. Others would be adapted and, where adaptation is impossible or too costly, indigenous innovation would be encouraged. Similar principles of discrimination would be applied to subsidizing education abroad and inviting technical assistance at home. Multilateral clearing and payment arrangements with like-minded countries would be established so that constraints on hard currency earnings would not prevent the expansion of mutually beneficial trade. International reserves would be held in the form of a diversified portfolio of currencies in order to minimize the risk of losses. All of this would require scarce administrative skills, but pooling can economize in these, international cooperation can help, and learning will improve performance.<sup>5</sup>

A judicious selection of features of outward- and inward-looking strategies is likely to give the best results—such as drawing on foreign research and developing indigenous research or drawing on and adapting foreign technology and products. The lessons of industrializing Germany, France, Japan, and Russia, using and adapting foreign ways, blending new institutions with old traditions, are not directly applicable because international income gaps were narrower then and the dimensions of the demographic problem, which determine the scale of the need for jobs, were quite different. Yet, even these countries in their early stages of development did not look at the established markets of England but at new opportunities and the growing markets of other newcomers. The main point is that there is a choice of different styles of development which rely on admitting different blends of indigenous and foreign impulses.

## VI. Big v. Small

Some believe that bigger is better, and some think that small is beautiful. The spokesman

5. Some related, specific proposals have been advanced (independently) by UNIDO [20, 125-28].

of the former is the late P. C. Mahalanobis, of the latter the late E. F. Schumacher.

A simple modification of the Harrod-Domar growth model generates conclusions that appeared to justify investment in heavy industry in India. Multi-sector models have proliferated with different capital-output ratios in each sector. The most influential have been Prasanta Chandra Mahalanobis's (1893-1972) two-sector and four-sector models [9; 10], which have been criticized both on empirical grounds—that the sectors do not correspond to "fillable boxes"—and on logical grounds. Mahalanobis assumes that investment is distributed between two sectors, consumer goods (e.g., looms) and capital goods (e.g., machine tools). We thus have two incremental capital-output ratios: the investment-extra consumer goods ratio and the investment-extra capital goods ratio. The former is assumed to be lower than the latter, but the rate of growth of investment now depends on the rate of growth of output in the "capital goods" sector, and therefore on the allocation of investment between the two sectors. The implicit assumption is that foreign exchange resources for importing capital goods are strictly limited, hence "foreign trade productivity" is zero. Thus the proportion of total investment allocated to the capital goods sector (together with its capital-output ratio) becomes the crucial variable determining the long-term rate of growth of consumption goods. In Mahalanobis's four-sector model the consumption sector is subdivided into modern industry, and small-scale industry, including agriculture, and services. This model was used by Mahalanobis to explore the employment implications of different investment patterns.

The two-sector model has been criticized from numerous points of view. [4, 13, 14, 19]. When all criticisms are taken into account, however, certain valid conclusions remain. In the absence of all other limitations on production if there is a machine that can either reproduce itself or produce other kinds of products, the production of other products can be raised at some later date by a greater allocation of capital now to the reproduction of the machine.<sup>6</sup> Alternatively, if other limitations on production are postulated, the tautological proposition is left that if the growth of an economy is limited by a bottleneck in the production of capital goods (however defined), removal of this bottleneck will accelerate growth. India's First Plan emphasis on the marginal propensity to save illustrates the importance of considering other constraints, such as availability of capital goods, and shows that these may prevent the savings potential from materializing. Raising the investment-income ratio is obviously not enough; decisions will also have to be made as to how the investment is to be distributed among different activities. But any bottleneck—skilled labor, administrative ability, foreign exchange—could be selected as a constraint and the proportion of expenditure (or effort) devoted to reducing this constraint made the determinant of development.

But Mahalanobis and some of his predecessors and followers have advocated more "roundabout" methods of increasing production, in the sense of increasing the allocation of investment to the capital goods sector. These methods are vulnerable to a criticism that Wicksell [21] advanced against Böhm-Bawerk. To translate Wicksell's argument into the language of Mahalanobis, one may begin by asking: if it is the distribution of investment between machines and machines making machines that is the key to rapid growth, why not invest in machines making machines (machine tools) and achieve a still higher rate of growth, and so on?<sup>7</sup> Wicksell's reply was ". . . if a successive lengthening of the produc-

6. This result can be demonstrated mathematically but space considerations preclude doing so. However, in addition to the versatility assumption a second assumption is necessary, viz. that the capital stock cannot be shifted between the two sectors. See [3].

7. The features criticized are not identical, for more "roundaboutness" is not the same as increased allocation to the capital goods sector; Wicksell's lengthening leads to a once-for-all increase in income later, whereas reallocation leads to a permanently increased flow. But the parallel brings out the assumptions about Pareto optimality.

tion process is also to be economically profitable, the product must increase at a more than geometric rate of progression, as time is increasing at an arithmetic rate. In general this can only be so to a limited extent through newly occurring changes" [21, 183].

In the language of the Indian plan, Wicksell's criticism can be stated thus: plowing back seeds (presumably consumption goods) may yield the same future results and leave more to be eaten now than constructing machine tools to make steel mills to make fertilizer plants to make fertilizers to produce more seeds. Methods of production that are "inefficient" in the Pareto sense must be ruled out. That is, if by adopting some other method of production, output at one time could be increased without reducing output at any other time, the present method is unambiguously inefficient. If for an infinite time-horizon we substitute a flow of output to the horizon plus a final capital stock, the criterion for inefficiency is that output could be increased at some time without decreasing it at any other and without decreasing the amount of any item in the final capital stock. It is frequently assumed in the discussion that all methods of production using more and more capital goods are "efficient" in the sense of not being unambiguously inefficient. Only after determining what "efficient" methods are can it be asked which of these efficient methods should be adopted in view of technological limitations, the need to enforce savings, and the political value judgments about time.

The Mahalanobis model also adds an odd and rather special constraint set by savings. By assuming that savings can be raised only by introducing capital-intensive methods of production, emphasis on heavy industry and capital goods becomes a means of enforcing savings. In terms of the Harrod-Domar model, in which the growth rate ( $g$ ) equals the savings-income ratio ( $s$ ) divided by the capital-output ratio ( $k$ ),  $s$  becomes a function of  $k$ , and  $k$  is a function of the distribution of investment; by changing the direction of investment we can increase the average  $k$ , thereby raising  $s$  more than proportionately and thus raising the growth rate  $g$ . The main reason seems to be that people cannot eat machines. But before choosing this method of increasing  $g$ , we should be certain that there are no ways of reducing  $k$  that would reduce  $s$  less than proportionately.

Despite numerous criticisms advanced against his model, Mahalanobis's conclusions and recommendations were right for India at the time [18]. The principal reason he gave for encouraging the machine-making sector is to reduce, in time, the unit cost of making capital goods through learning effects, economies of scale and specialization. For a country the size of India, this was the most important ground for building up the capital goods sector.

Ernest Friedrich Schumacher (1911–77) stands at the opposite pole from that of P. C. Mahalanobis. In the 1960s, when capital accumulation was the rage (on the left and the right), and when the "stages of economic growth" dominated official thinking, Schumacher [17] argued that countries with large labor surpluses and capital shortages should adopt "intermediate technology." Village tools were too primitive, Western machines too complex. He also wanted technology to have a human face, "as if people mattered." The notion of an intermediate or appropriate technology was applied not only to manufacturing industry and agriculture (simple power tools, not tractors and combine harvesters), but also to the social sectors (health, sanitation, water supply), and to the scale of institutions: small, decentralized, participatory. In Schumacher's later writing he emphasized the unity of man as consumer and producer. His thought had been developed when he was economic adviser to Burma and India, where Buddhist and Gandhian philosophy had impressed him.

The neoclassical economist might rebut that, with pricing policies that reflect relative factor scarcities, the right combinations between capital and labor would emerge. But the scale of the problem is such that tinkering with prices would not help. Income per head in

the poor countries is perhaps one tenth of what it is in rich countries; savings rates are about one half; and the rate of growth of the labor force is three times as high, say three per cent instead of one percent. This means that investable resources per worker are only one-sixtieth or  $(1/10) \times (1/2) \times (1/3)$ , what they are typically in an advanced industrial country. Assuming completely fixed coefficients between capital and labor, the transfer of rich country technology would create jobs for only one to two percent of the extra labor force streaming into the market every year, without making an impact on the large pool of existing unemployed. Even with a considerable degree of flexibility, it is impossible to remove unemployment. And the appropriate technology for these countries just does not exist. Only four percent of Research & Development expenditure is spent in the developing countries containing three quarters of humanity (and by no means all of this on problems specific to them); 96 percent in the rich countries, comprising only one quarter of mankind. This amounts to a ratio of 50:1 of R & D expenditure per head between rich and poor countries. No wonder appropriate technology for low income societies does exist.

## VII. Conclusions

My favorite division between *Utopians* and *Pedants* helps to summarize my thoughts. On the one hand is an admirable species: professional, dedicated, fine minds, conscientious, paying great attention to details. These are, without derogatory connotations, the *Pedants*. But they have come to know so much about how things are and how they work that they have acquired a vested interest in preserving the *status quo*. When faced with proposals for reform, they are like inverted Micawbers—waiting for something to turn down. The *Pedants* can always think of 10 very good reasons why it cannot be done. They have at least one problem to every solution, and often more.

On the other hand is a group of people, with fewer but more vocal members who present us with visions of alternative futures. Just as the first group is passionately devoted to preserving things as they are, so this group passionately dislikes precision, both in analysing what exists today and in drawing up the blueprints of their ideas for a better society. They are the *Utopians*. They are careless about details but they are the visionaries, the keepers of our faith.

The division of humanity into *Pedants* and *Utopians* is, as Peter Berger has said, deplorable. We need *Pedantic Utopians* or *Utopian Pedants* who cultivate, with informed fantasy, imaginative but carefully worked out visions of alternative social possibilities.

Eclecticism and compromise are not attractive to scholars; indeed two different scientific paradigms cannot coexist for long. But the declension is: I (and Hegel) synthesize, you compromise, he/she is anemic. The intent of my article is not compromise but to show either that the alternatives were wrongly posed, or that only a double- or mighty-pronged attack will achieve objectives. Within this context what lessons can be learned for the future course of development economics should it turn out that the news of its death—like that of Mark Twain—has been exaggerated?

- (1) The transition of development economics from the "economics of a special case," viz. Third World economies, to a new global economics of shared problems, but with greater differentiation of approaches and analyses, both unifies and differentiates the subject.
- (2) The need for an appropriate intellectual technology, rigorous within the bounds permitted by the subject, calls for a unification of the formal and informal intellectual sectors.
- (3) The need for multidisciplinary work at the deepest level, where non-conventional but relevant variables are incorporated in the models, is generally accepted. The

precise way of doing it is much more difficult to specify.

(4) A selective policy of discrimination is capable of producing a synthesis between those who advocate total linking to the international market system and those who advocate delinking. Its purpose would be to make use of the beneficial impulses propagated by the world system without admitting the detrimental impulses.

(5) Three dimensions now somewhat neglected need strengthening. One is the *historical dimension*, understanding how things came to be what they are, and knowing the limits of and opportunities for how they should become. The second is the *global dimension*, viewing international relations in a manner that transcends the boundaries of the nation state. The interaction of national policies and the international system, alliances of interests across national boundaries, and appropriate institutional responses to global problems are all issues that should have a higher place on our research agenda than they have now. This approach has been propounded in UNIDO's inaugural *Global Report* [20]. The third is the dimension which Harvey Leibenstein called *Micro-Micro Theory*. It covers not only what goes on inside the firm, but also inside the farm, the household, and possibly inside any one individual, with conflicting desires. The basic needs work has shown that institutional arrangements are very important in meeting basic needs, and of the three institutions—market, public sector and household—the household has, until recently, been neglected by economists. In addition, the origins and diffusion of technological innovation deserve more attention.

(6) Large-scale and small-scale activities should not be regarded as alternatives, but should be made mutually supporting or at least not mutually destructive—Mao's strategy of walking on two legs. Large-scale, modern activity should not destroy the small-scale, informal sector. The difficulty is to design policies which enable the small-scale sector to grow without depriving the large-scale sector of resources that would have a higher productivity there; these may be capital, or managerial talent, or wage goods, or foreign exchange.

(7) Finally, we need a combination of careful attention to detail with visions for alternative futures.

## References

1. Canterbury, E. Ray, "Income Redistribution and Rawlsian Justice." *Journal of Economics and Business*, May 1981, 188-201.
2. \_\_\_\_\_, "Welfare Economics and the Vita Theory." *Eastern Economic Journal*, January 1980, 1-20.
3. Chakravarty, S., "Some Aspects of Optimal Investment Policy in an Underdeveloped Economy," in *Towards Balanced Economic Growth*, edited by H. C. Bos. New York: North Holland Publishing Co., 1969.
4. Domar, Evsey D., "A Soviet Model of Growth." Essay IX in *Essays in the Theory of Economic Growth*. New York: Oxford University Press 1957.
5. Frank, Andre Gunder. *Dependent Accumulation and Underdevelopment*. New York and London: Monthly Review Press, 1979.
6. Hirschman, Albert, "The Rise and Decline of Development Economics," in *Essays in Trespassing: Economics To Politics and Beyond*. Cambridge, Massachusetts: Cambridge University Press, 1951, pp. 1-24.
7. Lerner, Abba P., "Utilitarian Marginalism (Nozick, Rawls, Justice, and Welfare)." *Eastern Economic Journal*, January 1978, 51-65.
8. Little, Ian, "On Different Kinds of Economists," in *Economic Development*. New York: Basic Books, Inc., 1982, pp. 16-26.
9. Mahalanobis, P. C., "The Approach of Operational Research To Planning in India." *Sankhya*, December 1955, 3-50.
10. \_\_\_\_\_, "Some Observations on the Process of Growth of National Income." *Sankhya*, September 1955, 307-12.

11. Marx, Karl. *Theories of Surplus Value*, Vol. IV of *Capital*, edited by S. Ryazarskaya. Moscow: Foreign Language Publishing House, 1963.
12. Myrdal, Gunnar. *Asian Drama*. New York: Twentieth Century Fund, 1968.
13. Raj, K. N., "Growth Models and Indian Planning." *The Indian Economic Review*, February 1961, 242-61.
14. Raj, K. N. and A. K. Sen., "Alternative Patterns of Growth under Conditions of Stagnant Export Earnings." *Oxford Economic Papers*, February 1961, 43-52.
15. Robinson, Joan. *Economic Philosophy*. New York: Pelican, 1966.
16. Seers, Dudley. *Economic Philosophy*. New York: Pelican, 1963.
17. Schumacher, E. F. *Small is Beautiful*. New York: Harper and Row, 1973.
18. Srinivasan, T. N., "P. C. Mahalanobis," in *International Encyclopedia of the Social Sciences*, Vol. 18, edited by D. Sills. New York: The Free Press, 1979, pp. 491-93.
19. Tsuru, Shigeto, "The Applicability and Limitations of Economic Development Theory." *The Indian Economic Journal*, April 1962.
20. UNIDO (Vienna). *Global Report*. New York: United Nations, 1985.
21. Wicksell, Knut. *Selected Papers on Economic Theory*. London: Allen & Unwin Ltd., 1958.