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Charles W. Lindsey

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Notes and Comments

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CHARLES W. LINDSEY

When planning for a year – sow corn.
When planning for a decade – plant trees.
When planning for life – train and educate men.
Kuan Tsu 3 c. B.C.[1]

INTRODUCTION

Progress, including its economic component, is essentially a human activity. Adam Smith gave prime importance to skill, dexterity, and judgement of the worker. Writing in a period in which industry was primarily *manu*facture, Smith placed labor at the center of the production process. Later, as the machine came to dominate, it was said that industry had moved to an era of *machino*facture.

The changing interests of economists reflected the rise of the machine age. The replacement of the labor theory of value by the subject of marginal productivity ostensibly provides a vision of the economic process in which all inputs – labor, capital, and entrepreneurship – make a contribution. But in reality, capital is the object of dominant interest. Certainly, there are specialists in the area of labor economics. But even among this group, the laborer's contribution is generally conceptualized as a consequence of his or her embodied "human capital." Economic development literature for three decades has stressed the accumulation of capital:

1. Quoted from *Education and Training for the Metal Workers of 1980; Regional Trade Union Seminar* (Paris: Organization for Economic Cooperation and Development, 1968), p. 7.

more capital and more productive capital. But machines neither run, coordinate, nor invent themselves. The importance of human activity remains, albeit in altered forms.

In the standard formulation, capital is assumed to adjust to ensure employment for the existing work force. When technological change is brought in, either the requisite skills are claimed to be scarce, and the fact lamented, or they are tacitly assumed to be available as needed. Little attention is given to the process of skill acquisition. However, in a world in which access to skill, as well as to capital, is unequal both within and among nations, the mechanisms by which requisite skills are acquired by developing countries and the relation between the existing pool of skills and the selection of production processes, should be dominant concerns.

Capital is an ambiguous word in economic literature, denoting at different times money, productive equipment, and that which can be owned. In discussions about development, the term "technology" has come into use to focus on the equipment sense of capital, or on the production process itself. Interestingly, when we turn to the definition of technology, the centrality of man reappears.

> Technology in its broad meaning connotes the practical arts. Technologies are bodies of skills, knowledge and procedures for making, using, and doing useful things.[2]
>
> Technologies are the cultural traditions developed in human communities for dealing with the physical and biological environment, including the human organism.[3]
>
> Technology refers not only to tools, a stockpile of utensils, but to a kind of tool-using behavior, a set of methods for making specific goods. Technological change is the discovery and application of new or previously ignored or rejected production methods.[4]

Technology here is a broader concept than the equipment or production process focus of economics. It includes the society's ability to control the equipment and process. Skill, on the other

2. Robert S. Merrill, "Technology," in *International Encyclopedia of the Social Sciences*, ed. David L. Sills (New York: Macmillan Co. and the Free Press, 1968), 15: 576.

3. Ibid., p. 577.

4. W. Paul Strassman, *Technological Change and Economic Development: The Manufacturing Process of Mexico and Puerto Rico* (Ithaca: Cornell University Press, 1968), p. 2.

hand, is a much more micro concept. It refers to the ability to perform a particular activity and usually connotes something that takes time and effort to acquire. A group of individuals can learn the skills that are part of a particular technology and still not be able to utilize those skills if other, essential skills are not learned (or taught), and/or if they do not possess the requisite integrative knowledge.

In our technologically sophisticated and interdependent modern world, complete compartmentalization is no doubt impossible, but for practical purposes, the central core of various technologies should be identifiable. Relevant skill development has its most important meaning as giving the group the ability to utilize a particular technology.

ENCLAVING

To the extent that technologies are developed within a given society, they build on its accumulated knowledge and, in turn, add to that knowledge. Since such developments are incremental, industrial secrets, patents, and the like may protect the developers for a period of time, but usually they do not affect the process of technological development. In fact, depending on the institutional structures, development may be stimulated.

The case of technology imported from industrialized nations to developing nations presents a different situation, however. The imported technologies may simply exist as enclaves within the host economy. Apter has defined "enclaving" as "the importation of role networks associated with productive enterprises which on the whole remain independent of the local population."[5] The term was traditionally used with reference to mining and plantation enterprises which were foreign-controlled. Usually situated apart from the rest of the host economy physically, they employed technical and skilled personnel primarily from the home country, from which they imported most of the necessary tools and equipment, as well as consumption items demanded by the expatriate staff. In turn, the raw materials they extracted or produced were

5. David E. Apter, "Charters, Cartels and Multinationals: Some Colonial and Imperial Questions," in *The Multinational Corporation and Social Change* (New York: Praeger Publishers, 1976), pp. 21-22.

exported for use in the home country. What accrued to the host economy were a few jobs, royalty payments, and, perhaps taxes. All of these, however, were notoriously low.

The enclave nature of imported technologies in the manufacturing sector is perhaps less obvious, but no less real. It has been discussed to some extent under the heading of dualism, the separation of one part of economic activity – "modern" – from another part – "traditional." The term enclave carries the additional sense of isolation.[6] The point I wish to make can be put best by first looking at technology imported as foreign investment. Later, the discussion will be expanded to include situations where ownership is at least partly domestic.

For the relatively new type of foreign investment now seen in East and Southeast Asia, which manufactures almost entirely for export, the comparison with the older enclave mining is almost exact. Equipment is imported to work on imported raw materials for export. The location of many such enterprises in export processing zones, physically removed from the rest of the economy, completes the comparison.[7] As with mining, employment at low wages is the primary benefit to the local economy. (Of course today one would have to include any foreign exchange earned, a factor unnecessary when the host country's money supply was tightly controlled by its colonial master.)

Historically, however, the largest share of foreign investment in manufacturing has been of the import substitution variety. Since its products are for the domestic market, albeit often affordable only by elite groups, the potential enclave nature is not quite so obvious. But it remains so in a technological sense. Inputs either are imported or, if locally acquired, are generally raw materials and not earlier stages of manufactures.[8] Management,

6. The interpretation of dualism as that of separateness is largely misleading. As we shall argue below, dominance/dependence is a more appropriate description. At one level, however isolation is the appropriate term to use.

7. For a discussion of the Bataan Export Processing Zone in the Philippines, see Robert Thomas Snow, "Dependent Development and the New Industrial Worker: The Case of the Export Processing Zone in the Philippines" (Ph.D. dissertation, Harvard University, 1977); Benjamin Osias, "Mariveles Export Processing Zone Beckons Investors," *The Journal of the American Chamber of Commerce* 49 (April 1973): 8 ff.; Ken Ohara, "Philippines: Bataan Export Processing Zone," in *Free Trade Zones and Industrialization of Asia,* special issue of *Ampo* (Tokyo, 1977).

8. The ILO report on the Philippines notes that one method of transferring a wide range of skills by foreign firms is through the use of local suppliers. They go on to point out that this use of backward linkages to support domestic industry "has, to date, been conspicuously missing in Philippine industrialization." International Labor Office (ILO), *Sharing in Development: A Programme of Employment, Equity and Growth for the Philippines* (Geneva, 1974), p. 293.

engineering, and skilled knowledge initially tended to be confined to expatriates; however, to a considerable extent local talent has replaced the expatriates. This is no doubt an improvement, but by itself, does not eliminate the potential enclave nature of the activity. Parts of a particular technology may not have been transferred to the host country. Also, the question of diffusion remains.

DEPENDENCY

The adverse consequence of enclaving is reinforced by the dependent character of third world economies. Dependence is generally referred to as part of a power system – dominance and dependence – in which development of one group of countries is conditioned by the development of another group. It includes technological, economic and social dimensions.[9] Speaking of the technological aspect, Stewart emphasizes capacity rather than power. "Technological dependence arises initially from the imbalance in technological *capacity;* i.e., the capacity to produce technology."[10] If we include in the concept of capacity, attitudes towards the ability to produce technology, and realize that the attitudes are, in part, shaped by the power relationship, the link between power and capacity is made. The advantage of Stewart's approach is that it allows us to see the connection between dependency, on the one hand, and economic development viewed as the ability to produce more and more diverse goods, on the other.

As she points out, technological dependence arises when the major sources of a country's technology come from abroad.[11] The existence of technological independence (or, more accurately, interdependence) is at the same time the achievement of success in the process of economic development.

For a developing nation, being a latecomer to the development process surely has its advantages. But it also has its costs. There is a loss of control in decision-making, both because the available

9. Here we concentrate on the technological dimension. In doing so, we do not mean to suggest that it is more important than the other dimensions, or that they are not interrelated.

10. Frances Stewart, *Technology and Underdevelopment,* 2nd ed. (London: Macmillan Press, Ltd., 1978), p. 119.

11. Ibid., p. 116.

technology was developed largely by others confronted with different circumstances, and because the choices are often made by outsiders. This point has been often made, but we shall use Stewart's formulation.

> Because most technological development since the industrial revolution, has occurred in the developed countries . . . world technology today depends on the characteristics of the techniques developed in the advanced countries, which in turn depend on the historic/economic circumstances of the advanced economies during this period, which conditioned their dynamic cycles. Broadly speaking, the period has been characterized by systematic changes: these changes include rising incomes, increased labor productivity, increased education of manpower, increased range and sophistication of products designed to fit in with rising incomes, increasing specialization, increased investment per employee, a factory system of production which has increasingly, along with employer/employee work relationships, drawn in the whole society, and so on.[12]

It may be that much of modern technology, both that which exists and the more limited pool which is being transferred, is appropriate and useful to developing countries. The point is that this cannot be assumed. Priorities must first be identified, and then the question asked about the appropriateness and usefulness of this modern technology for each developing nation. For one thing since the problem is long term and collective in nature, individual decision-making will have no necessary relation to the results of collective decision-making. "The will to maximize profits is not enough; economic self-interest, like other urges, does not come in a common package with the knowledge of its own best pursuit."[13]

Second, among those technologies which have been most advanced in industrial countries is that of *marketing.* Even if needs cannot be manipulated at will, marketing efforts by subsidiaries of foreign firms have a considerable ability to convince consumers that their products are the best satisfiers of those needs. Third, the entire process of the development of tastes cannot be separated from the experience of those involved. The international transmission of tastes, the so-called demonstration effect, has been commented on by others. Important also is the fact that we are largely ignorant of alternative possibilities since they have not

12. Ibid., pp. 9-10.
13. Strassman, *Technological Change,* p. 25.

been brought to fruition.

All of this gives the owners of modern technology enormous power. The converse side of their power is the impotence that others feel. The lack of technological capacity generates a mental orientation that fosters continued dependence. This is not an individual phenomenon – witness the success of those who make up the brain drain – but collective and contextual. Neither is it total (see below), but as those struggling against it in developing nations know, it is pervasive. And it is reinforced by the fact that the measuring rod that most use to judge indigenous efforts gives weight to those factors in which the dominant foreign investors – the transnational corporations (TNCs) – excel. In a competitive fight, they have all the advantages.

Nevertheless, one might reply, if the TNCs are transferring technology, then progress is being made, and with luck the capacity to develop technology will occur with time. Perhaps, but there are serious mitigating factors, the most important of which is the partial nature of the transfer.

COMPLETENESS OF TECHNOLOGY TRANSFERS

Casual empiricism as well as more careful study shows that most foreign investment today is by TNCs, large oligopolistic firms. As Hymer has shown, there are good theoretical reasons for this.[14] Foreign investment could not occur unless the outsider possessed some advantage over local firms, both currently and prospectively.

To the extent that their position in the market is a consequence of the technological skills and information that they possess, the TNCs surely will be reluctant to part with them. Portions, perhaps, but not entire packages. As we noted at the beginning of this essay, technologies are bodies of skills, knowledge, and procedures. Considerable parts of the total may be transferred without endangering the TNCs control. But unless the technology can be replicated locally, the power of the TNC remains, as does the dependence of the host country. The importation of crucial elements, the use of expatriates for particular positions, the specialization of tasks to be performed by local staff, even the process of subcontracting – all of these factors work to the TNCs advantage.

14. Stephen Hymer, *The International Operations of National Firms* (Cambridge, Mass.: M.I.T. Press, 1976), pp. 91-96.

The case of a joint venture between a TNC and one or more domestic capitalists enlarges the possibility of meaningful technological transfer only somewhat. Many TNCs entering into such arrangements go through considerable efforts to maintain day to day control over the production process. Their reasoning, logically enough, is that it is they who have the requisite technical knowledge. To bring their joint venture partner, who does not possess that knowledge, into the day to day running of the factory would generate unnecessary problems. To the extent that domestic joint venture partners accede, the economy will remain technologically dependent. Thus, the attitudes of the economically powerful within a third world nation are of considerable importance. If they see their interests best served in establishing business connections with the TNCs, without regard to the technological questions, a joint venture will be little improvement over a wholly owned foreign investment.

The third alternative, and in some ways the most desirable from the point of view of technological transfer, is for a domestic enterprise to obtain technology independent of equity arrangements. Although not always possible, and in some instances not desirable, the opportunities are there. This is particularly true for technologies that have become relatively standardized. Strassman has identified four possible networks.[15] First are markets, migration, and schools; second are licensing agreements, and third are research institutes. The fourth, which Strassman calls the relay system, includes machinery suppliers, consultants, trade journals, government and staff engineers.

Inasmuch as the decision making is local, there are no requirements or pressures to select specific technologies or institutionalized patterns of production that have been developed elsewhere under different circumstances. In addition, there is no relatively costless channel to direct inquiries when problems arise. Biases, therefore, are in the direction of self-reliance. There is little evidence to suggest that the basic capital equipment chosen by domestically-owned firms is different from that of foreign-owned enterprises, and the latter do make adjustments to meet local conditions. The point, however, is that the lack of ready contacts, as well as costs involved, may make the domestic firm more

15. Strassman, *Technological Change*, chap. 2.

likely to undertake adjustments on its own, and local producers do not have to clear them with the home office. To the extent that domestic firms make their own decisions, the country is moving in the direction of technological independence.

SUITABILITY OF TRANSFERRED TECHNOLOGY

Reference so far has been to technology and technological transfer in general. The question of suitability does arise, however, in at least two contexts. One is the subject of appropriate (or intermediate) technology. It has been widely observed that much of the technology imported from the industrialized countries creates relatively few employment opportunities; it is urban - rather than rural-oriented, both in terms of location and product; and it requires skills that are often in short supply. The advantages derived from the increased productivity are limited both geographically and in terms of the groups affected. The dualism and inequality existing within most third world countries are reinforced.

To be appropriate, the technology should be useful to people where they are – mostly rural, largely agricultural; it should not be labor-displacing; it should be simple so that it builds on existing skills; and it should be based on locally available materials. Successful, widespread introduction of such technology would create an environment conducive to continued technological change and adaptation not only within a limited urban setting, but throughout the much larger rural areas. In other words, it would be supportive of a movement away from technological dependence.

The success of appropriate technology schemes, however, is quite dependent upon the transformation of existing social relations within rural areas. Otherwise local elites, or possibly outsiders, will easily reap the benefits by gaining control of the technology. Rather than being a liberating and progressive force, the introduced technology could simply reinforce the impoverished and subordinate position of the rural mass and perpetuate the stagnant environment in which they live.

But this takes us beyond my topic. No matter what is the success of appropriate technology schemes, transfers of other types of technology also must occur. It is the entire process with which I am concerned.

Suitability also arises when a distinction is made, however

imperfectly, between industrial technologies and business technologies.[16] The former are directed toward the production of usable articles, the latter toward profit and loss, purchase and sale. The point is not whether one set of technologies is necessary or desirable and the other not; rather, it is that their respective institutional roles are different. Simply put, industrial technologies are the *content* of economic activity, while business technologies provide the *form* or *environment* within which production takes place. The particular set of business technologies currently in place in most third world countries has been largely transferred from industrialized nations in the same way that industrial technologies have; and these business technologies have been conditioned by the nature of the developing economies' integration into the world economy.

In the now industrialized nations, the evolution of the two types of technologies has largely gone hand in hand. But this is not the case in third world countries. Business technologies accompanied the early exports of industrialized economies, particularly manufactured consumer products. The transfer process accelerated later when import-substitution induced foreign investment began to occur. In many ways the sophistication of business technology currently in use in third world countries is well in advance of that of their industrial technology.

Important also is the fact that business technologies have been diffused among domestic enterprises to a much greater extent than industrial technologies. There are several reasons for this.

For one thing, business technology as a whole is labor intensive. It takes relatively little equipment to write a jingle for radio, or design the knobs on a television set to be placed at the top rather than the side. Second, modern business technology consists of an evolution of commercial activity in third world countries that predates industrial activity by many years. Accumulated experience is there, as is cultural familiarity.

Another consideration is that, by and large, business technology does not demand the standardized, precise interaction of equipment, material, and human activity that modern industrial technology requires. Success or failure is not so well defined, or so obvious. Fourth, business secrets are difficult to maintain. Ex-

16. Reading the works of Thorstein Veblen, particularly *The Theory of Business Enterprise*, has shaped much of my thinking on this topic.

perience may be necessary, but copying is endemic. And for many business activities, the market is sufficiently differentiated that newcomers can gain enough of a foothold to acquire the requisite experience.

Lastly, in the successful application of business technology, appearances are more important than substance. A little courage can be quite rewarding. And failure is not necessarily very costly.

Whatever its cause, however, the sophistication of business technology in third world countries reflects misdirected efforts and gives a false indication of the level of industrial and economic development. It provides a gloss for motion without movements, an arena for self-congratulation among the participants without the bread that must accompany it. My concern is with industrial technologies and their transfer.

DIFFUSION OF TECHNOLOGY WITHIN THE SOCIETY

Whether the transfer of a particular technology is to a subsidiary of a TNC, a joint venture, or a domestic firm, the *transfer* is only the first step in the process of the technology becoming "part and parcel of the economy where the investment is made."[17] For the latter to occur, the technology must be diffused within the economy, it must become part of the accumulated knowledge of that society.

A given technology can be thought of as composed of equipment, materials and skills, together with process – i.e., the particular application of skills with equipment and materials to produce a product. Equipment and materials are generally available on the open market, thus it is skills and process, the human components of technology to which attention must be directed.[18]

Opinions differ as to the extent diffusion takes place. Hughes,

17. H.C. Bos, Martin Sanders, and Carlo Secchi, *Private Foreign Investment in Development Countries: A Quantitative Study on the Evaluation of the Macro-Economic Effects*, International Studies in Economics and Econometrics, vol. 7 (Boston and Dordrecht, Holland: D. Reidel, 1974), p. 37.

18. In the author's interviews with approximately thirty TNCs and joint ventures in the Philippines in late 1980 and early 1981, none indicated that inaccessibility of equipment would be a problem for Filipino business people who might wish to enter into competition with them. Skills, knowledge of the production process, and marketing difficulties, however, were among the factors mentioned as possible impediments. Interestingly, a few of the Filipinos in joint ventures suggested ready accessibility to raw materials as a major advantage of the joint venture over going it alone.

for example, argues that in Southeast Asia, skill diffusion does occur.

> Higher training for technicians is particularly scarce. Most training takes place on the job, with firms with foreign investment playing a particularly important role. The prevalence of 'stealing' such workers then spreads the new skills throughout manufacturing.[19]

From their investigations, however, Bos and his colleagues arrived at a different opinion.

> Also in terms of training of industrial skills we are dealing with effects which are in the first place internal to the firm. Indeed, because of the higher wages, industrial workers do not generally leave the foreign firm on a voluntary basis, and consequently the benefits of additional skills remain by and large with the firm. Indeed, PFI [private foreign investment] may tend to create a small elite of well-paid skilled industrial labor in a general setting of misery and unemployment.[20]

SKILL DEVELOPMENT

To properly investigate the process of skill transfer and its diffusion, we must look at both the types of skill or knowledge that are being transferred and the alternative routes. In the development of an industrial labor force, Kerr and his colleagues point to four interrelated processes: recruitment, commitment (including industrial discipline), advancement, and maintenance.[21] All of these are important, but it is only the advancement process that concerns us here.

There are also four possible avenues by which skills can be obtained: formal education, vocational or technical schools, on-the-job training (both systematic and informal), and self-development or education.[22] On-the-job training should be of importance for the entire spectrum of skills. Self-development could be important; self-motivation and commitment would play a large role

19. Helen Hughes, "The Manufacturing Sector," in *Southeast Asia's Economy in the 1970s* (New York: Praeger Publishers for the Asian Development Bank, 1971), p. 219; see also Frederick Harbison and Charles Myers, *Education, Manpower, and Economic Growth* (New York: McGraw-Hill Book Co., 1964), pp. 64-65.

20. Bos, *Private Foreign Investment*, p. 39. Information from the interviews mentioned in note eighteen above tends to support the view of Bos. There were exceptions, however.

21. Clark Kerr, John T. Dunlop, Frederick Harbison, and Charles Myers, *Industrialization and Industrial Man* (Cambridge: Harvard University Press, 1960), p. 166.

22. See Harbison and Myers, *Education, Manpower and Economic Growth*, p. 2.

here. Beyond a basic level of education, formal, especially higher, education is most relevant to managers, professionals, and engineers. Technical schools provide the basic training for skilled and semi-skilled manpower.[23] There are often widespread complaints, however, about the quality of technical schools and, in some technical disciplines, university graduates. At least some on-the-job training is necessary.[24]

The emphasis on technology as a body of skills must be reasserted here. If the training is to meaningfully move the country toward technological independence, then it must include as wide a range of skills as possible. This includes making certain that a sufficiently large part of the inputs necessary for the production process are drawn from local sources, if not produced within the firm. Producing a motorcycle, for example, with an imported motor, will not lead to technological independence. There are limits no doubt to what can be produced within a developing country at a particular point in time. Deepening production must occur progressively. In certain basic industries economies of scale may be sufficiently important to foreclose local production. But there may be inefficiencies in the economic system that are far worse than producing at less than the most efficient scale of production. A relatively small cost disadvantage should not be an excuse for maintaining technological dependence.

The mobility of the skill being taught is also of importance. At the technological level, Scoville uses the term "transferability" to denote the "ability of a man with certain fairly standardized skills and abilities to perform a range of different jobs."[25] Vaitsos makes the distinction between "industry specific" and "task

23. The categories skilled, semi-skilled, and unskilled, although useful at a general level of discourse, become difficult to define or measure with any precision, if examined closely. In addition, they have in practice been formulated with social class connotations in mind. See John G. Scoville, *The Job Content of the U.S. Economy, 1940-1970* (New York: McGraw-Hill Book Co., 1969), p. 23; and Harold Wool, *The Labor Supply for Lower-Level Occupations* (New York: Praeger Publishers, 1976), p. 3.

24. For a discussion of the Philippine case, see R. Hal Mason, "The Relative Factor Proportions in Manufacturing: A Pilot Study Comparing U.S. Owned Subsidiaries and Local Counterparts in the Philippines," (U.S.A.I.D., Office of Program and Policy Coordination, May, 1969, mimeographed), p. 142; Jesus Gotiduc, "An Assessment of Industry Demand for Technicians and Skilled Workers," *The Philippine Review of Business and Economics* 8 (June 1971): 65-66; and Russell J. Cheetham and Edward K. Hawkins, *The Philippines: Priorities and Prospects for Development* (Washington, D.C.: The World Bank, 1976), pp. 299-300.

25. Scoville, *The Job Content*, p. 15.

specific" jobs. The latter include "detail engineering, product design, feasibility studies, some equipment specifications, and routine plant lay-out requirements, electric, civil and soil engineering, etc."[26] Many skills at the skilled worker and semi-skilled worker level could be added to his list.

Bowman however argues that the question of mobility should be approached at the economic rather than the technological level.

> The most fundamental economic base for categorization of skills is their degree or mobility, not merely among kinds of jobs but also among firms or employing units . . . Technologically specialized skills are not necessarily immobile as among firms; and technologically general skills may nevertheless be immobilized in certain institutional settings . . . The distinction between mobile and immobile skills relates fundamentally to labor market structures despite the fact that technological constraints condition the operation of those markets.[27]

In technologically advanced societies there may be specialized skills that are immobile in an economic sense, but they are relatively few. This is not necessarily the case for third world countries. Thus in addition to attention to the transfer of whole technologies, including the relevant skills, attention must also be given to the fact that specific skills may be relevant to more than one technology. It is obviously easier to transfer industries that can utilize the existing pool of skills. But to make a technological contribution, industries should enlarge the pool. Bowman refers to such industries as "infant training industries."

> . . . what makes a potentially productive industry an infant is then one or both of two things: gaps in human competences and know-how, and gaps in complementary industries and physical infrastructure (external economies). I use the term 'infant training industries' to direct attention to the role that the industry itself may play in developing new kinds of human resources and know-how . . .[28]

As Bowman goes on to point out, the problem is circular: the choice of technologies depends upon the existing skill pool, and

26. Constantine V. Vaitsos, "Employment Effects of Foreign Direct Investments in Developing Countries," in *Employment in Developing Nations,* ed. Edgar O. Edwards (New York: Columbia University Press, 1974), pp. 341-42.

27. Mary Jean Bowman, "From Guilds to Infant Training Industries," in *Education and Economic Development,* ed. C. Arnold Anderson and Mary Jean Bowman (Chicago: Addine Publishing Co., 1965), p. 100.

28. Ibid., p. 113.

the potential learning opportunities (and hence the future skill pool) depends upon the choice of technology. The problem is not that difficult to understand, at least in the broad. The solution, however, is a different matter.

CONCLUSION

The issues are clear: 1) how much technology and what types of skills are being introduced into the economy? 2) To what extent is the transfer only partial, perpetuating the dependent condition? How is the process affected by nationality (residence) of the owners? To what extent are the skills being introduced technologically and economically mobile? 3) To what extent are the skills being transferred, filling gaps in the existing spectrum? And to what extent are the technologies and skills being diffused from the enterprise or agent that first brought them into the economy? Unfortunately, we have few answers to these questions.