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INTERMEDIATE TECHNOLOGIES

EACH new stage of the development of Western societies has been ushered in by technological transformations—but these transformations took place in response to certain stimuli, certain needs within the societies themselves; the changes were *evolutionary* and related to the level of technical sophistication and organization reached by these societies.

In the developing countries, on the other hand, the West has tried to short-circuit this process and to introduce the most advanced technologies to societies which were, for the most part, still in a pre-technological age. The result has often been social disruption, the aggravation of unemployment and little change in the standard of living of the majority.

We are now beginning to realize that development is an organic growth and that *to intermediate levels of development there must correspond intermediate levels of technologies*, but it has taken the West two decades to learn that lesson.

In the post-war years, when the West began in earnest to try to narrow the gulf between the rich industrial countries of the West and the poor developing countries of the Third World, industrialization seemed the most appropriate method and the one likely to yield the quickest results. The apparent logic of this method was that, since the highest rates of output and profit per unit of capital in developed countries were found in capital-intensive activities, the swiftest way of promoting economic growth in developing countries was to transfer to them these capital-intensive industries. This would incidentally enable developed countries to expand their exports of advanced machinery and equipment. What did not occur at the time to Western planners was that the transplanting of industries, designed for the affluent and industrialized nations of the West, to a completely alien environment with differing factor endowments and technical standards, might have some serious drawbacks.

Within the last ten years the main disadvantages of this emphasis on rapid industrialization as the panacea for developing countries have become more and more apparent; they can be summarized as follows:

> Little benefit accrues to the agricultural sector of the economy.
>
> Industrial development tends to gravitate to the more densely populated parts of a country and spreads its benefits in a narrow circle, occasionally wreaking, by job destruction, havoc in a far wider area.
>
> Capital-intensive industries require minimum numbers of highly trained personnel and there is a limit to the speed at which such people can be trained.
>
> The development of such industries requires extensive imports of plant and machinery and will thereby either place a severe strain on a country's balance of payments or depend heavily on "grant aid."

A good example is the Indian glass industry. The introduction of automatic machines in the last decade to replace hand-operated machines has been a total failure because this advanced technology is completely unsuited to Indian conditions and to the consumers' requirements. As a result the new glass industry is becoming critically dependent on foreign exchange, has not created significant employment, and has tended to cripple local initiative.

In spite of a greatly increased volume of aid per capita, food production in the developing countries has hardly risen at all—with some notable exceptions like Pakistan. Indeed, most developing countries are still as incapable of feeding themselves now as they were before this massive injection of aid took place. Even the annual rate of increase of industrial production has dropped in the last five years and is likely to decline even further unless agricultural production can be raised. Worse still, unemployment and under-employment, especially in

the 18-30 age group, has now increased to alarming proportions in the rural areas.

Faced with this disappointing performance, planners in developed and developing countries alike have begun to reappraise the conventional strategy of development; they have been forced to the conclusion that a sophisticated technology, which is essentially alien to the environment in which it is supposed to work, cannot possibly take root there. The reason is simply that vital cooperating factors, the infra-structures which enable the advanced machinery to operate smoothly and profitably in the West, are usually not found in developing countries; the human elements especially—the technicians, accountants, managers—are conspicuously absent.

The modern plant in this new environment can in fact be likened to one of those medieval knights who, without a trained retinue of serfs to help him into his heavy armour and upon horseback, was quite useless on the battlefield. Planners are therefore beginning to recognize that the right technology for developing countries is the one which matches the available human resources, the social structure, and the size of the market.

The golden rule for development is that the new technologies should not be too far ahead of the ability of a community to absorb new skills and ideas, to reproduce these technologies locally and utilize them to the common good.

Indian economists were among the first to diagnose the bankruptcy of the conventional attack on underdevelopment and to advocate the use of intermediate technology. They realized that the transition of a traditional economy to an industrial economy could be achieved better and quicker through an *evolutionary* rather than a *revolutionary* process. At a Seminar convened in Hyderabad in 1964 by the Indian Planning Commission, Dr. D. Gadgil, the distinguished Indian economist, said:

> Everything points to the desirability, nay, urgency, of initiating widespread industrial development in all regions of the country which will prevent the accentuation of dualistic features within the economy and make for concerted and uniform economic progress. . . . The scientists and technicians must be made fully aware [that] what is expected out of the adoption of "intermediate technology" . . . is a dynamic process which should be the center of interest of the plan of industrialization of the country. It should claim the attention . . . of the ablest scientists and technicians in the country. . . .

Intermediate technology can alleviate the stresses of the "dual" economy where a small élite with high standards becomes more and more alienated from the masses, which remain by and large at subsistence level.

Dr. Schumacher, one of the most persuasive advocates of intermediate technology in the West, has suggested a four-pronged attack on this problem:

> Workplaces should be set up in places where the people are actually living.
>
> These workplaces should be cheap enough to be created on a large scale, without demanding either a high level of domestic saving, or requiring imports costly in foreign exchange.
>
> In other words, investment per workplace should be related to income per head.
>
> Production methods should be simple, so that the demand for high skills is minimized. This applies not only to production itself, but also to organization, the supply of raw materials, finance, marketing, and the like.
>
> Lastly, production should be based on local materials and for local use. This has a multiplier effect and output, income and employment are stimulated in related industries and trades.

Underlying these four propositions is the essential requirement that the equipment, raw materials, managerial and operative skills needed should be obtainable locally and quickly.

It is by satisfying the above criteria that Japan was able to develop harmoniously and rapidly at the end of the last century. The Japanese, although they borrowed their techniques from the West in the early stages of their industrialization, were quick to adapt them to their own needs so that they could be reproduced from local resources within a short period. In this way they lessened their dependence on foreign know-how and created new sectors of activity to replace the traditional occupations which inevitably disappeared. They, in fact, built the

mechanism of self-sustaining growth into their developing economy.

Another specific advantage of this method is that it taps local resources of entrepreneurship and management—the scarcest factors of production in developing economies. This is the example which developing countries, in a hurry to reach the take-off stage, should follow.

By providing the manual workers of developing countries with improved, simple and sturdy tools, intermediate technology can raise their productivity appreciably. This is, in fact, one of the most powerful arguments in favor of intermediate technology; it enables the masses, and not just a privileged few, to help themselves and to participate in the process of development.

There is, of course, the danger that if labor productivity goes up more quickly than demand in any period, fewer agricultural workers will be needed. But since in most developing countries at the present time agricultural output is not keeping pace with population increases, an increase in labor productivity for agriculture is needed to provide increased output. Initially, therefore, this need not involve any displacement of labor since the increased output can easily be absorbed.

On the other hand, further increases in labor productivity in agriculture will inevitably release labor for other uses and thus create unemployment. This is the necessary route to a higher level of economic development, but it can only be effective if the surplus labor thus created can be absorbed by growing industries in the urban areas.

An important proviso, however, is that labor productivity in these growing industries should not be too high. This is why *intermediate technology, with its intermediate level of productivity,* is ideally suited for this stage of development. Otherwise, if the new industries operate at, say, twice the labor productivity of agriculture, they can make only half of their required contribution to the absorption of the labor released. In other words, industrial productivity must rise more slowly than the demand for industrial products. Hence productivity in the new industries must be rigidly held down to prevent unemployment from becoming a major problem.

It is too easily forgotten that the men thrown out of work in developing countries by highly productive machines cannot, as in industrialized countries, be readily absorbed into other sectors of the economy. They, therefore, swell the mass of the unemployed, with a consequent loss in the national income of the country and an increase in human misery.

A slow but steady growth of productivity which spreads right through the economy is infinitely better than a spectacular rise in productivity in a few isolated areas which remain confined to these areas and creates unemployment all around.

Intermediate technology can therefore reconcile the twin needs of full employment and rapid economic growth in developing countries.

It should be noted, however, that capital-intensive technologies are still needed, either to build the infra-structure for development, such as roads or harbors, or to gain access to essential raw materials, like oil or minerals. But the limitations of their impact on the society as a whole should be recognized and they should be regarded as adjuncts to and not as substitutes for intermediate technologies.

The awareness of this growing need for more information on intermediate or appropriate techniques brought together a number of specialists in development problems in 1965 and they formed a non-profit making organization, The Intermediate Technology Development Group.

The main emphasis of the Group's work is centered on the systematic assembly and cataloguing of data on efficient, labor-intensive techniques, suitable for small-scale application, whether these techniques are in use today, adapted from past practices, or developed anew for a particular purpose.

The Group is also involved in a programme of publicity, both on the concept and approach of intermediate technology through publications, books, articles, broadcasts, etc. It intends further to promote specific projects in developing countries

which would enable poor communities to help themselves by providing them with the technologies and equipment appropriate to their actual level of development.

Prompted by many requests from developing countries for information on where small-scale tools and equipment can be obtained, the Group has undertaken to publish a Guide entitled *Tools for Progress,* listing appropriate equipment available, initially in the United Kingdom. The Group hopes, however, to widen this out in future editions on an international basis. Several purposes will be served by this Guide:

> Useful information will be obtained about manufacturers' attitudes to design and feasibility studies.
>
> It will identify firms willing to enter into joint agreements to license the manufacture of their machines in developing countries.
>
> It will enable the Group to channel particular needs to engineering firms with the design and research facilities to work on these problems.

Initially it is intended to distribute in developing countries 3,000 copies free of cost to Government officers, cooperatives, international agencies, voluntary workers, agriculturalists, commercial agents, *i.e.*, those who influence the purchasing of tools and equipment.

This Guide lists a great number of simple tools and equipment, ranging from agricultural equipment to equipment for handicraft and village industries, fishing equipment, water pumps, hand and powered tools. It is hoped that, as in Japan, it will create opportunities of developing local skills and resources. Publication is due in the Autumn of 1967.

Extensive information exists on intermediate technologies in both the developed and developing countries, but much of it is filed away in appendices to scientific reports, or hidden in the libraries of research departments of both Government and international agencies. What is urgently needed is a world-wide unlocking of this knowledge and a system of related information centers, in both developed and developing worlds, where such information can be made readily available to all who need it.

In the developing countries, regional centers could be established which would be serviced by specialized agencies, research and development departments of ministries concerned with development problems, private firms and voluntary agencies. These should be small but well equipped with communications experts capable of translating the information in simple fashion for local use, manuals showing simple construction methods and pre-investment feasibility surveys—such as AID's industry profiles.

In the industrialized countries, centers such as "Volunteers for International Technical Assistance" (VITA[*]) could be set up which would mobilize the expertise and goodwill widely available and apply it to the solution of technical problems for developing countries.

The international agencies of the UN have been quick to recognize the contribution which intermediate technologies could make to development. UNESCO has set up a number of school-building research centers from which extremely valuable information can be obtained on low-cost techniques for educational programmes.

ILO has published a number of papers, including one on appropriate technologies for small industries in developing countries, presented at the Manila Conference in 1966, giving a number of case studies of small rural industries such as leather processing and ceramics; and ILO's Management Development Division has been concerned with the utilization of labour in infra-structure projects.

FAO has studied methods of simple food preservation and its report on smoking Bonga, a fish found in the Delta Province of Western Nigeria, is an excellent example of an intermediate technology project.

FAO has also financed research which led to the development of a simple underground water-

[*] VITA, founded in the U.S.A. in 1959, is an international association of scientists businessmen and engineers who have volunteered their free time and skills to assist in the spread of technology in developing countries.

catchment tank of various sizes suitable for individual families, farms, and villages. These tanks embody all the principles of Intermediate Technology:

> They are labour intensive.
>
> The materials are cheap and can be assembled in do-it-your self kits.
>
> The necessary skills can be acquired by any able-bodied human being without specialist training.
>
> Simple booklets can describe diagrammatically every step in their construction.

Comparisons between the operating cost of capital-intensive and labor-intensive equipment in developing countries have established that the latter are often cheaper. The reason for this is simple. When the capital cost of sophisticated equipment is high and its rate of utilization low (as is usually the case in developing countries where machines are rarely worked round the clock and a single shift per working day is the rule), and when wage rates are low, the gap between the costs of capital-intensive and labor-intensive methods of production narrows considerably. Sometimes the gap closes completely and in some cases the labor-intensive methods are cheaper.

Engineers in India have found, as a result of their experiments over the last fifteen years, that manual methods even with traditional ways of working have often proved cheaper than mechanization. The Small Industries Extension Training Institute (S.I.E.T.) of Hyderabad recently conducted a case study comparing the manufacture of cycle gear cases under two conditions: (1) Manufactured to a great extent by hand-operated machines (2) manufactured under more capital-intensive conditions, *i.e.*, with machines run by power. The study demonstrated that the products of the two technologies were equivalent and could be sold at the same price, but—

> The capital cost of the equipment in one instance was less than half that in the other.
>
> The number of men employed in the low-capital, cost-production unit was one third more than in the other.
>
> The wage distribution was twice as great in the low capital cost unit.
>
> The return on investment in the low capital cost unit was 50 per cent higher.

In other words, the labor-intensive manufacture was not only more profitable but far more suitable to the conditions of a country where labor is plentiful and where the cost of capital is high.

There are no superior or inferior technologies in the abstract; *they must be judged by one criterion alone: their relevance and suitability to the environment in which they will operate—i.e.,* the technical skills available, the social organization, the level of management and, most important of all, the size of the market. Mass production which cannot be absorbed by the local market or sold abroad in competition with similar products, except through heavy Government subsidies, is the wrong kind of production; production by the masses, as Gandhi would have said, would be more appropriate.

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REVIEW
WHAT IS REALLY GOING ON?

THIS is the question the writer of contemporary history sets out to answer. In a paper in the Autumn *Virginia Quarterly Review,* Louis J. Halle describes what he must do. For an example of a successful historian of his own times, Mr. Halle chooses Thucydides:

> The highest mission of the historian is to detect and reveal the underlying movement of history, and to explain it. This is what Thucydides, with his Shakespearean insight, did superbly well for the contemporary history of his own day. He showed how Athens, without ever taking a deliberate decision to do so was impelled step-by-step to build itself an empire. He showed how Athens then suffered the unforeseen consequences of its empire in the fear and hostility of those Hellenes who remained outside it. He showed how the limitations of human nature, as they manifest themselves in a democracy, then prevented the Athenians from rising to the heights of statesmanship and strategy toward which Pericles had pointed the way. And he showed, then, the doom of Athens, like the doom of Macbeth, made inevitable by the pitiful human nature of the Athenians—a human nature that we all share, and that has now involved us Americans in Vietnam as the Athenians were once involved in Sicily.

Mr. Halle illuminates the task of writing contemporary history by revealing its pitfalls and temptations. Good journalism, for example, is not good history. Journalism—or, at least, journalism as now practiced—gives attention to current happenings by the criterion of what is "interesting." Many of the things to which the journalist devotes attention the historian need mention only to get them out of the way. The historian must discern the events which will have *historical consequences*—which will shape or narrow the course of future human decision. Journalists often fail to recognize events of this sort, since other happenings seem more "newsy" or colorful. Mr. Halle illustrates journalistic blindness by recalling a "miss" by the London *Times* back in 1948 when President Truman inaugurated what was later known as the "Truman Doctrine." The announcement came in a speech in which the President declared that "it must be the policy of the United States to support free peoples who are resisting attempted subjugation by armed minorities or by outside pressures." In this speech Mr. Truman also asked Congress to appropriate $400 million for assistance to Greece and Turkey. Mr. Halle comments:

> We can now see that assistance to Greece and Turkey was of relatively local and transient importance. What the Truman Doctrine represented was of general and permanent historic importance. At the time, however, public attention was focused on aid to Greece and Turkey, which was more important as news if not as history, and the Doctrine tended to be overlooked. The London Times missed its significance completely. "Mr. Truman's speech," it said, "does no more than extend the prospect of American support to a new area, the Eastern Mediterranean and the Middle East."

A historian would have recognized in the Truman Doctrine an assertion extending American *identity*—it made the United States increasingly or ostensibly the armed policeman of the entire "Free World."

A different sort of illustration is taken from General De Gaulle's "separatist" policy, established in January of 1963. Since then, journalists have recognized a movement "away from European and Atlantic unification." There is superficial support for this view, but only, Mr. Halle thinks, at the journalistic level. Various more or less hidden developments toward European unification—broad cultural realities and socio-economic trends—may be seen by the contemporary historian as evidence "that, beneath the zigs and zags of contemporary politics, the world of mankind is being carried forward by a secular movement that the President of France can influence, in the long run, no more than a Danish king in ancient Britain could influence the incoming tides of the sea."

Well, what qualifies the historian of contemporary events? How does he get the capacity to recognize and identify happenings that

will have "consequences"—that will actually shape history? Mr. Halle doesn't really tell us how to create good contemporary historians, but he illustrates the kind of awareness they must cultivate. Besides Thucydides, he has one other example of a man who could see what was really happening in his own time—Marcus Aurelius. Most Romans were not very sensitive to the "decline" of the empire in its later stage, but, he says, "it was not impossible for individuals of historical vision and insight, living at the time, to see the secular trend." Marcus Aurelius saw it.

On the obstacles to this sort of seeing:

> There is more than one good reason why it is hard to see the secular trends in the times in which one is living. One reason is the difficulty of achieving the necessary personal detachment from daily events, suppressing partisanship one is inclined to feel, overcoming one's emotional involvement. I need not dwell on this difficulty, since all historians are fully aware of it, even though they can none of them escape it altogether.

In short, a historian must above all *want* to see clearly. What Angus Sinclair said about knowledge in general applies here as well:

> In knowledge we are "selecting" and "grouping" some small scraps of the vast mass of influences that surround us being driven on to do so by our emotions, feelings, impulses, and interests. . . . on the whole we tend to "select" and "group" in ways which fall between two extremes, on the one hand the most simple and coherent, and on the other the most comfortable. Just how far they fall towards one extreme or towards the other depends upon what sort of person we are and what sort of person we wish to be.

This is the case for the idea that in the writing of history, virtue is also knowledge. But when Mr. Halle supports this case it is no tired cliché but lucid, articulate demonstration. He points out other problems—you might call them "professional" problems—which the historian must learn to deal with:

> There is a more fundamental difficulty that concerns me here. To explain it, let me resort to an analogy from other fields of academic study than that of history. In the physical sciences, and also in communications theory, a distinction is made between chance effects, on the one hand, and, on the other, effects that are not chance effects but that represent, rather, something meaningful—such as, say, a systematic trend. The chance effects are called "noise"; the effects that mean something are called "signals." The problem in all fields where this applies is to distinguish the signals from the noise—in the parlance of radio-telegraphy, to distinguish what is being purposefully broadcast from the static that, at times, threatens to drown it out.
>
> The closer the historian is to the period with which he is dealing, the harder it is for him to hear the signals for the noise. If he tries to abstract what has historic significance from the reams of stuff he reads in the newspapers every day he will be unable to do so, because, at such close range, the noise drowns out the signals. The noise does not, however carry far, so that if he can only back away from his material he will find it fading out rather rapidly, until at last he gets himself to such a distance that only the signals reach him.
>
> The ability to distinguish the signals from the noise, at close range, is what is required of those who write contemporary history. It is an aptitude that some historians have in greater degree than others. We may as well call this aptitude by its common name, "insight." It is essentially the same insight as we find in the great poets and dramatists. To be a truly great historian, a man must have something of Shakespeare in him.

And that is why, in the passage we first quoted from Mr. Halle, he speaks of Thucydides' "Shakespearean insight."

From here on the subject branches out in many directions. There is one line to follow in wondering how "insight" is acquired. This is no ordinary "virtue," though virtue is plainly involved. And there is the obvious consideration that a historian—or any man—possessed of insight needs an audience of people with at least a little insight of their own. How else will they come to value what he says? It follows that nothing is more important than the attainment of insight as an educational ideal. The prerequisites for human excellence, not to mention survival, are exactly those listed by Mr. Halle for identifying

the meaning of contemporary events. Involved is a certain personal detachment, the conscious suppression of partisanship, and being able to abstract oneself from emotional involvement—in short the entire Socratic enterprise.

One more thought occurs. Dull in mind would be the historian to whom thoughts of what *might be* did not flood in along with sagacious perception of what is. For if there is no choice among things "going on" today, there may be choices open for shaping tomorrow. To what extent are the good things which occasionally happen in history the fruit of self-fulfilling prophecies? Answers to such questions tempt the historian to think also as a man, and to press his insight to the limit of its capacity. He must try, but he must also not betray the best hopes of the men of his time with facile promises.

Is it among the duties of the historian to select "becoming" possibilities? This would involve him in historical study of the ways of the will, in hope of extending the art of the possible. In any historical present, how can—or should—the element of the heroic have play?

Ortega writes well on this question:

> The hero anticipates the future and appeals to it. His gestures have a utopian significance. He does not say that he is but that he wants to be. . . . As something made to live in the future world, the ideal, when it is drawn back and frozen in the present, does not succeed in satisfying the most trivial functions of existence; and so people laugh. It is a useful laughter: for each hero it hits, it crushes a hundred frauds.

The historian has an obligation at least to flirt with this problem. One thinks of the ideal historian as a man who knows how to vary his role and to point his insight at various levels of causation—from the reality of the man who lives in the visionary world of what he wills to be, or intends to make happen, down to the last, entropic, sluggish bottomlands of human passivity. What shall he say about these levels? He cannot offer hot-gospel tracts, but neither can he say only objective things about objective happenings. *Insight* is precisely the ability to see within and beyond the plainly objective. For all these happenings—the willed ones, at any rate—were once subjective in origin. One might think this insight consists in a subtle sense of measure, helping the historian to feel his way down the scale of things which are coming into being—through will and by other causes—and to render an intuitive vector analysis that often approximates true probability. *How* does he know these things? Well, as Mr. Halle says, by the Shakespeare in him.

Those who would like to read more of Mr. Halle should refer to his *Men and Nations* (Princeton University Press, 1962, $4.75) for musings and reflections on history in a Platonic mood. It is a most distinguished book.

COMMENTARY
SOCIAL SCIENCE AT WORK

THE editors and contributors to *Trans-action*, a monthly magazine published "to further the understanding and use of the social sciences," are writers of contemporary history (see Review). Events and movements to which a large portion of the population reacts only emotionally are examined in the light of social science, but with the warmth of sustained humanistic concern. In the November issue, Miss Joyce Ladner, a young Negro research worker in a social science project at Washington University, brings both her scientific training and her personal involvement in the civil rights movement to a discussion of "What 'Black Power' Means to Negroes in Mississippi." There is a portfolio of photographs of Negroes taking part in demonstrations, followed by David Riesman's musing "Reservations about Black Power."

Several important books are reviewed in this issue. One is Neill Macauley's *The Sandino Affair*, a study of America's intervention in Nicaragua (1927-32), of which Robert G. Colodny says: "The reader who remembers the Bay of Pigs, the recent intervention in Santo Domingo, and the unending agony in Vietnam will find the model for these exercises in the imperialism in the history of the rise and fall of General Sandino." At the end of a thorough and admiring evaluation of *Deadly Logic: The Theory of Nuclear Deterrence* by Philip Green, the reviewer, John R. Raser, sums up by saying that this book "brings together in a coherent framework, and substantiates, the deep and often inarticulate reservations many have felt about deterrence theory." This is accomplished by criticism in an ethical perspective. The reviewer concludes: "What emerges is not merely a critique of one aspect of American foreign policy and of social-science techniques as applied to it, but a searching examination of the intellectual and moral condition of our whole society." The appalling growth of the power of the military institution in the United States is revealed in the review of Clark R. Mollenhoff's *The Pentagon*, and "The American Way of Starving" is the title given to notice of Gilbert Y. Steiner's *Social Insecurity: The Politics of Welfare.*

It would be difficult to over-estimate the value of making these social science studies of the contemporary scene accessible to the general reader through intelligent review in *Trans-action.* Subscription to this magazine (ten issues a year) is $6.00; subscriptions should go to Box 1043A Washington University, St. Louis, Missouri 63130.

CHILDREN
. . . and Ourselves
ESSENCE OF BASIC EDUCATION

[There is much in Gandhi's conception of education from which the West can learn, given recognition of its value and the ingenuity to apply its principles in an industrial society. We are grateful to Mr. K. S. Acharlu, of Bangalore, India, for permission to reprint, in three parts, his translation and compilation of "the cream of Vinoba's educational thought" embodying the Gandhian view. The Indian publisher of this material, taken from Vinoba Bhave's talks and writings, is Sarvodaya Prachuralaya, Thanjavur, Madras State.]

II

5. *The Teacher*

Indian tradition gives the highest place to the teacher.

The State provided him all facilities and left him free to conduct education.

The teacher was a pathfinder, a man of vision.

Today the teacher is not a teacher, but a servant, His advice is hardly asked for.

The teacher should be the torch-bearer of freedom and independent thinking.

He should not be a slave of the State.

The teacher is the architect of the new social order, of a social and moral revolution for the establishment of new values in society.

The teacher should be a model of simplicity and clean life.

He should be free from all evil ways.

He should be devoted to study.

He should be an expert in the craft he teaches.

He should be self-sufficient, have faith in craftsmanship.

The teacher and the pupil should work together.

In working with children the teacher should grow young like them.

The teacher should not attach himself to party-politics though he should acquire a full knowledge of politics and political problems.

The teacher in the village should not only be an educator of children but should assume leadership of the village.

He can wield tremendous influence in the village and can shape the government of the country, provided he is free from party-politics and exercises his freedom.

He should be the guide, philosopher and friend of the village.

Let a teacher see to it that not a single dispute goes to the law courts from the village.

A teacher should be given a piece of land for his cultivation, and all the members of his family should be a part of the school.

The teacher's wife should share his work.

All teachers should receive the same salary.

The teacher may work for two hours with students two hours for the village, and two hours in the field.

The vanaprastha* is the best teacher.

Vanaprasthas with ripe experience in the fields of industry, commerce, politics, etc. should be appointed as teachers and professors in the schools and colleges. Young and inexperienced persons should not be professors and teachers.

The vanaprasthas with their wives should be teachers.

The teacher in the new education should be pupil-oriented, the student should be education-oriented and both be devoted to the acquisition of knowledge and service.

A teacher is not simply an instructor. He can at best educate about ten pupils. Classes of 50 or 100 students are a mob.

Experienced teachers should handle lower standards.

6. *Medium of Instruction and Language*

Mother tongue can be the only medium of instruction and not a foreign language.

* A *vanaprastha* is one who has entered the third stage of human life, having passed through youth and also completed the responsibilities of child-bearing and family-rearing, so that he is free to serve the entire community without distraction.

Training through the medium of English has developed certain undesirable attitudes.

A few scholars may learn English language at the higher stages of education and keep the country in contact with the outside world.

A foreign language can be learnt effectively only after one has mastered the mother tongue.

7. *The Curriculum*

The school curriculum should be centered round (1) the needs of the body, (2) voice training—pronunciation, recitation and understanding, (3) learning of crafts, (4) Atma jnan: how to conduct oneself with others, how to make oneself useful to all, how to control the senses, knowledge of the social and natural environment, knowledge of the distinction between the body and the soul.

8. *Correlation*

Correlation is the method to which knowledge and action are so intimately integrated that one cannot say at any moment whether what is going on in the school is knowledge or work.

9. *School Subjects*

Social studies should be taught in relation to the social and economic problems of the community.

History should be re-written and taught so as to promote unity in the country and to enable pupils to understand the continuity of tradition and its greatness.

In teaching history let not our children be taught hatred and narrow patriotism and one-sided truth.

Science should be taught in relation to the life and needs of the people.

Everyone should have a knowledge of the science of health, cleanliness, of the four elements, dietetics, etc.

Tools and implements should be improved through the use of science.

Science is necessary, but it should be wedded to nonviolence.

Science and self-knowledge should proceed hand in hand.

Children should be trained in art expression by making them live in the midst of nature.

Painting and drawing should be taught without elaborate equipment. Much of the equipment should be improvised by children.

10. *Methodology*

Sense-training is an important first step for the acquisition of knowledge.

The students should be trained well in methods of acquiring knowledge independently.

They should be helped to think for themselves, to aspire to follow truth wherever it may lead them and not to go along a beaten track.

The Socratic method should be employed while children are being trained to acquire knowledge.

Children should learn the finest lines of poetry by rote. The learning of great passages of literature is an aid to the maturing of the soul.

(*To be concluded*)

FRONTIERS

The American (Indian) Dream

TWO questions set the keynote of the section, "The American Indian Today," in the Fall issue of the *Humanist.* Asked in a brief introduction by Roy P. Fairfield, one of the editors, they are:

> Can Indians develop an indigenous leadership with influence?
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> How can Indians develop their own self-concepts, dignity and pride in order to "make a difference" in American life?

Other inquiries are concerned with what governments and their representatives ought to do, but these two questions are really the heart of the matter. A natural comment might be, "But these questions place the burden of change on the Indians, while responsibility for the injustices and oppressions they suffer obviously lies with the white man!" The reply must be that the policies of the whites and their governments—in the United States and Canada, the countries with which the four contributions to the *Humanist* deal—have long displaced "indigenous leadership" among the Indians and imposed alien "self-concepts" upon them. Analysis which neglects these primary psychological realities can only confuse.

These questions, then, make the *Humanist* supplement far more valuable than a catalogue of wrongs. From the days of Helen Hunt Jackson's *Century of Dishonor* until the present, we have had an abundance of such lists of the white man's crimes. The lists must be made, of course; feelings of guilt and repentance must be aroused; but these efforts represent only the preliminary skirmishes in the struggle for remedial action. And the grand phrase, "remedial action," is actually a pretentious and egotistical expression. The problem is not to "take action," but to learn how to *get out of the way* of the self-development and self-reconstruction of people who have not only been "oppressed," but tragically *weakened* by careless and contemptuously selfish disregard of how the Indians perceive themselves. Even by reformers with the best of intentions, efforts to "help" the Indians have been turned into forces against them because of stereotypes approximating the do-gooders' notions of how the Indians *ought* to perceive themselves. The delusions of our own self-perception have compounded the wrong against the Indians in ways that we cannot possibly understand without gaining better understanding of ourselves. It is for this reason that "justice to the Indians" seems almost an unattainable goal, when advocated with a fine and righteous reformist emotion. We *can't* do justice to the Indians without first understanding ourselves; this puts all justice-doing on a very distant agenda.

Yet we must try. *Some* people see *some* things that ought to be done, right now. A major difficulty is that what is "right" is made known by individual insight, while what is to be done usually gets defined at the institutional level. We know that changing institutional ways of doing things is almost always a long war of attrition. It is a slow process of altering individual attitudes which, after necessary growth-intervals, may be reflected in institutional policies.

So it is that a former VISTA (Volunteers in Service to America) worker on a Crow reservation in Montana discovered that he was useful to the Indians only on a "people-to-people" basis. The Volunteer's greatest asset, William Bachrach writes, is that "he is close to the people and can work on an individual basis with a person's needs and aspirations." He adds:

> Most Volunteers, especially the younger ones, develop strong loyalties to Indian young people on the Reservation. Motivated by this loyalty and guilt for not making the most of that time on the Reservation, the ex-volunteer often spares nothing to open up a larger world for one or more Indian friends.

The Canadian contribution to the *Humanist*, by Jerry Gambill, illustrates clearly the institutional lag that must be overcome. Assigned to work as a "community development specialist" in a Mohawk reservation bisected by the International

Boundary, near Cornwall, Ontario, he decided to mingle with the People of the Long House, a small group of Mohawks who "have maintained their religious practices and way of life despite strong opposition, if not persecution, from Church and State." At once he was threatened with being fired, but his request for *written* prohibition of contact with the Long House people prevented this. Then:

> Complaints from Catholic officials soon reached headquarters alleging moral misconduct and demanding my removal from the community. Later, the Church was to encourage community members to get rid of me. Interestingly enough, however, no Church official ever approached me directly.
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> A second conflict arose from my residence on the Reserve. Residing with the people seemed the only sensible course; yet, to the Establishment, I was foolish and misguided. "They'll be bothering you after hours," officials said. So when Indians visited my home, shared my table, bathtub, television and talked long into the night, the privacy of "White Hill" where the official housing was located was broken beyond repair. The more association I had with Indian people, the less rapport did I maintain with the priest, the Mounties, the administrators, the nurses, and the teachers, who continued to keep a very professional distance from the Mohawk people.

Explaining himself, Jerry Gambill wrote:

> Indians cannot be expected to feel that they can determine their own future if they continually face problems of employment, welfare, poor living conditions, inferior schools, legal tangles, red-tape, and so on. Community development does not aim to make the Indian adjust to a social system that is unfair, lop-sided, ill-informed and prejudiced; rather it helps the Indian to change that system into something decent.
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> For many generations, huge efforts have been made to "change" the Indians. For a time, it was thought that Indians would disappear and die off. Then it was thought that they would mix in, integrate, assimilate, or become "civilized." Most white people have some strange ideas about Indians, and they certainly have strong ideas about what they want Indians to do. Community development is the opposite: it helps the Indians determine their own goals, and to decide what they will or will not do.

Most Indians cherish a dream of their traditional communal life. Most whites don't understand this at all, nor the web-of-life feeling the Indians have as their social ideal. The Indians, perhaps somewhat vaguely, long to recreate circumstances in which this feeling may have a natural expression. The project is to recognize the common longing, understand it, and help the Indians to evolve the situation they seek—being especially careful not to try to create it "for" them.