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TECHNOLOGY, SOCIETY, AND EDUCATIONAL CHANGE

SUCH a subject as "Technology, Society, and Educational Change" seems a complicated and forbidding topic; but I hope it will not seem hard, except insofar as life itself is rather hard. It is not difficult in any academic sense, I hope. My basic suggestion is that the thing we call "the world we know" is not mevely a world that we do not know, but a world that is shaping us all the time, very remarkably, in ways we do not recognize. It very often drives us in directions we do not want to follow.

I would start out by stating a simple truth that we all recognize, that none of us is living in the world in which we are born. This is a very old saying indeed, but it is saying with special truth today. Hardly one of us is at home in *this* world in which our children are already being born or are soon to be born. This world will make them strangers to us; yet we ourselves are unintentionally making sure that it will do so.

All teachers are special example of education, both by

being educated and by educating others; but nearly everybody is in some sense an educator —at least in the sense that we can arrange our own and other people's lives in formative ways. A good starting point for understanding education might be to suggest that familiar words like "technology," "culture," "education," and "society" appearing in the title should be promptly dropped, because they are smoke-screen words which confuse us. We use them, thinking we know that they mean; yet we seldom do know. One of our first tasks as educators is to get aways from accepting words, cliches, and present institutions, and try to come down to examining what we are actually talking about. So many of the words we use and the ideas we use (such as "families," and "schools," and "public relationships" of one sort or another) are very often twisted out of our original intention as soon as we have set our mind to them, and still more when we use them to communicate to others. This process of changing the significance of words, relationships and institutions has been written about in considerable detail during recent years. In referring to it I am not suggesting anything new; but I do want to stress the reality of change in institutions, meanings, and educational intentions becaus I think that we ignore it. Very often we ought to put different constructions upon what we observe around us from those conclusions which are habitual with us.

Let us look first at some of the factual background. It is very hard for anybody to see what are the facts that he is involved in and to think in terms of present reality. It is specially advisable to do so in America, or when considering spheres of American influence. Americans have better opportunity than most on earth to see themselves, to form themselves, and indeed to form the rest of the world. Nevertheless they are perhaps more likely than many other people in the world to be a prey to the circumstances developing around them so very fast. One simple example will illustrate. No nation has had more far-reaching technological and social change. Yet here in 1959, it is very easy for Americans to think in terms of the world of 1939, which is a world away from this. Indeed, it is very easy

for them to think in terms of the Founding Fathers and Jefferson of Jackson or even of the colonial villages. This is the America of the morning oath of allegiance. The whole of today's educational system in its administrative respects is based upon the colonial villages. Yet the assumptions of the colonial village are nonsensical in the world of the automobile, which makes it possible for anyone to live where he can find a superior school system for himself. So we could multiply examples; but I give just this one paradoxical illustration.

The world is not changing only inside the United States. The Americans now have an imperial responsibility outside, which very few of them have recognized. Without having an empire, they have all the prestige and power that other people have previously had through possessing an empire. The rest of the world is looking for examples of technological and social development. Of these examples or models, quite the biggest and most important is the American people and its institutions. Yet, because Americans are so unquestioningly convinced of the virtues of that way of life to which they are so dedicated, they often overlook the process in which they are involved until an outsider or an uncomfortable American reminds them that in many respects they *are* actually being processed by the mechanized institutions which they use. They may become so processed by techniques that they become each day more and more like the Russians, just by using similar techniques. The outside world very often has to choose between the United States and the Soviet Union, with perhaps one or two other alternatives. Responsible observers have to ask where the difference lies. Above all, black Africans and Brown Asians have to ask this. The expanding populations and industries of Central and South America are at the crosroads. If North Americans can not stand back and see what it is they are allowing to happen to them, it is very difficult for them to give a convincing answer to all these other people.

How has this come about? In one simple way: technological change has been proceeding so fast. During recent decades there has literally been more change in some years than there

was in many previous centuries. In one lifetime more strange things have happened than have happened in the whole history of mankind before. That sounds melodramatica but let us just consider the extent and speed of change. My parents were born before there were any automobiles. I was born before airplanes were really anything but an experiment. My children are alive in an age of earth satellites, unlimited atomic and hydrogen power, and possibly interplanetary travel. To give a few more graphic examples —I have talked to Americans who remember the time when a thirty-mile trip was an occasion for a three-day stopover. I have also talked to Americans who have grown up in the most primitive conditions; and today's living is a world of luxury, by contrast. Just before the First World War, many skilled workers in Detroit earned five dollars a week. Just imagine that! Such is the speed with which the United States has changed. To give you one more example of social change -my grandmother began to go to work at the age of seven and was carried to the factory on her father's back at six o'clock in the morning. This was true not only of Victorian England. It was also true of some of the cotton manufacturing districts of the United States. Conditions were also pretty grim in this century. Many people still alive in industrialized America and in most Western countries went to work at the age of eleven or twelve and ceased their schooling. Think of this older world that I have been talking about, and think of our present world in which you can get from Britain to the United States or vice versa in five and a half hours. That is the spend and the scope of change in one life-time. When we use supposedly unchanged words like "the forld," "the school," "the community," we are often out of date in our thoughts about people and institutions. I suggest that we stop allowing familiar words to confuse us, and try instead to find what is behind them. This is especially important when we are in a community where change is as fast and wide-spread as in Puerto Rico.

Let me mention one other reason why the times we live in are unprecedented and bewildering. The scope of human interest, as well as the amount of human knowledge, has passed

beyond the wildest dreams of even our own parents when they were young. Our world might seem "Wellsian" to them. Most of our educational or social aims and assumptions are appropriate to a relatively stable pre-Wellsian world, despite all our talk about "life adjustment". Yet our school system and our education planning scarcely take a realistic account of this. How is our world Wellsian? We might answer that with detailed illustrations; but it is enough to say generally that the logic of industrialization has gathered momentum and acceleration, taking us with it faster and further. We must live according to the logic of our machines-according to their requirements, their time-table, their productivity. At the same time the old cliché that "more and more people know more and more about less and less" has become more justified. The development of specialization on our modern scale is a very strange thing that mankind has not made ready for. Neither our institutions nor our thoughts are quite able to cope with it. That is why I am asking us all to think carefully about the oral meaning of "technology".

What do we mean when we use the word "technology"? We mean a systematic way of producing certain things, disposing of them, distributing them to people. That is clear enough; but so far we are just suggesting that it is a sort of conveyor belt with supermarkets at the end. This is a hopelessly inadequate conception, because every previous technology has also been a civilization. Although, when people talk about ancient civilizations, they do not use the terms "the technology of Egypt", "the technology of the Chaldeans", "the technology of the Romans and the Greeks", they could do so. Every one of these civilizations has been a social system based intimately upon the control of various kinds of production and distribution. I use the Marxist phrase here, though not a Marxist. Successful production and distribution have allowed some people to have surplus so that what is often called culture; in the narrow sense, could develop. That it not really the point. We should not think of culture as books, music, plays, sculpture, architecture and such refinements. It is the essence of culture in the anthropolo-

gist's sense (or the comparative educatior's sense) to believe that a technological system structures *people* in formative relationships with one another. It gives each one a particular view of the world in relation to his skill. Each particular view is of course a constituent part of the total enterprise. It is also part of the total "understanding" of life which the community enjoys. Those technologies have been called civilizations which have allowed as many people as possible to structure their lives into an abiding of evolving pattern of understanding. They have cultivated people, and built their perceptions into a culture. Personal ideologies are inseparable from, and enriched by other citizens' complementary and interpenetrating ideologies. Thus people have a picture of the world, which is an integral part of a total civilization's picture of the world.

Now a total picture of the world which we can properly call a civilization may have a good deal of nonsense in it, like magic; but if you believe that the gods have called up the thunderstorn for a particular purpose, and you are satisfied with that, still builds sense into your world, and not nonsense. Yet plenty of people have gone as agronomists to West Africa, for example, and have developed beautiful techniques for teaching Africans to improve their crops and herds; but sometimes they have overlooked the fact that the Africans may not feel too happy about the crops because they have not said the right prayers, or had the right rituals, or done them in the right order. Consequently, the crops fail; the crops spoil after they are garnered; or their owners do not keep them properly. The point is that material as well as social projects do not suceed unless people's world-picture is built up and co-ordinated in a comprehensible compas.

In the older technologies, based upon human skill before the extensive and systematic use of machines, nearly every human relationship was established upon a personal and recognizable relationship of function. Because of our present enormous scatter of interests, and our intensive specialization, it has become impossible for any one man to know more than a little bit. So if we encourage the frontier of knowledge and

experience as expanding like a horizon, it is obviously very hard for me in England to know about any one thing in the same way as it affects a Mexican-American in Southern California, even if it is only a case of growing and eating lettuces or prunes. The total structure of the modern world which makes me to a certain extent his neighbor, also makes it possible for most of us to comprise or piece together the total world view of today's personal services within a manageable compass. This is a very strange and new thing. It never really happened before the development of mechanization as we nod understand it. Most people are well aware of this, and I don ot propse to develop the theme further except to stress the responsibility of educators for re-imparting a world perspective and global understanding to education. Even in a case or class system, or a social system that keeps some people blinkered, as long as individuals feel that they can "understand" within their blinkered state, they may be very contented. So they may be described as well adjusted or perhaps as well educated. They may actually be able to cultivate themselves humanely within their particular position. One of the important contributions which the Hammonds made in their studies of early industrialization in Britain was to point out that many of the people in a less emancipated world, which to us seems full of the most terrible injustices, are quite often content. At least, they are content if it seems to them to add up to "sense," though to us it may seem utter misery. We should not make the mistakes of supposing that such people are less healthy in mind than ourselves. One of the troubles with which anthropologists have been faced with in recent years is this: that when developers introduce innovations into an older society (I will not say a more primitive society, though that is the term usually used) they very often disorganize the human relationships which locally have added up to "sense". This is a terrible problem if it means the destruction of "understanding". We have also to note that diseases are often introduced too; but the most terrible consequence is that psychological and cultural bewilderment of one sort or another creepsin.

Let me illustrate the problem in another context. Psychologists have found out that if they experiment with perfectly healthy dogs, for example, after having taught them to run through holes or mazes in such a way as to have satisfaction or dissatisfaction to indicate sucess or error, they can quickly induce a state of hysteria by causing the dogs to be confused. If a dog has too wide a choice of potentialy satisfactory holes, none of which really gets him anywhere, he will quickly become hysterical. We human beings are also in a position in which there are thousands of choices or opportunities to which we can run. These are our different kinds of activity or knowledge, each one apparently satisfactory in itself, but not as a rule pieced into a pattern with many more. We hear much nowadays about inhability to communicate, inability to understand, class consciousness, class warfare, all kinds of sectionalism and "vested interests." This pandemonium of today is largely the consequence of unwittingly buildings up in our midst a machine for producing hysteria. This is our industrialized society with its bewildering array of jobs or roles. A normally healthy person in a heatlhy society has several complementary roles, each with a world view and a series of contacts or structure of conduct which are satisfying. He may see himself as a father, for instance. That is one role. He has another one which is perhaps as a grocer, giving an "understanding" of himself as a grocer, and contacts with and through the world of provisions. He may also be a religious person and have based on his church. He has contacts with his home or school or friends, and so on. The picture of life seen by a healthy personality is presumably one in which his roles, though different, allow variety to become a sort of symphony or harmony, as different world views are reconciled in a complementary system. Nowadays however our roles are often separated. We hear "business is business," "worship on Sunday," or "father will fix it" (when he comes home), or some other cliché of that sort. Our roles bear little or no relation to one another. So what have we? A personality potentially broken up, atomized or confused like those dogs in a maze.

Under the pre-industrial system a man could see his own roles fairly well in context. He could see other people's roles. He knew that Mary was not only the milkmaid, but that she was a pretty girl and she was also kind to her mother, and went to church, and a good deal else. Everyone knew most other people who shared his life like this. Yet in a modern city (or a modern school) I now depend upon the services of more people than our forefathers ever depended on before; yet I do not know them. They are not really persons to me; they are only functions indeed parts of functions upon which I almost accidentally obtrude.

This is very different from what Lewis Mumford, for example, in his picture of medieval life, called the medieval synthesis. It is very different also from the village life and family connections of rural Puerto Rico. Is our urban thining-out of human contacts and comprehension dangerous? I would say that this is not merely dangerous, but is the way to a sort of madness. My life as a father, or as a professor, or any such thing, depends upon the decisions of people far away, who have nothing to do with me any more. Just think of my day in Britain. Every piece of bread that I eat has probably been grown in Canada or Australia. If there is trouble in Saskatchewan it affects my bread, my living standards. My butter probably came from Denmark or from New Zealand. My eggs probably came from Ireland, my sugar from the West Indies. This, of course, is not a unique picture. In one way or another it is true materially or intellectually for every civilised person; but things that happen far away with nothing in them that is personal to us may be making our lives seem non-sense or a thing beyond our grasp. Many people give up the struggle; they cease to look for coherence. They try then to fill in the gaps with noise, or unquestioned activity, or opia'es of one sort or another. These could be the television, the worship of the Party, the worship of some particular authoritarian church, perhaps, or something of the sort. The wish to change jobs or to emigrate is often caused by such bewildement. All these phenomena have been studied a long time by distinguished

scholars. We might particularly mention the work of Erich Fromm, David Riesman, William H. Whyte, and lately Sargant's *Battle for the Mind.* Out of many excellent contributors those are perhaps the most conspicuous.

Despite all these symptoms we assume (especially, I believe, Americans) that life goes on the same as before we tell ourselves that we have simply added comforts and opportunities to the old civilization. We imagine that this machine age and its engagement of ourselves can be stopped as the IBM machines can be left in the office, or as a car can be left parked outside the home. I do not believe that at all. No previous civilization has ever cherished such illusions. Each item of day-to-day organization in my cultural contest has been built into my environment, my experience, and my education by my ancestors or by the people from whom our present organization has been borrowed. Their legacy has shaped the language I speak and the idiom of my perceptions. The world which they have built around me is still the basis on my formative relationships with other people. It has added up to a culture that penetrates all fields of interest, making meaning and significance for my native "way of life" and for me. That has been the only education of man for thousands of years.

To come to the world of today, where every advertisement or example voges us to "live modern," do all these things—cars, beer cans, television evenings, dates, jobs, and do-it yourself—add up to American culture? The answer is either "yes" or "no". If they do not add up to American culture, then what does? What is the alternative "activity method" that teaches the American way of life? In order to see the situation a little more clearly, let us remind ourselves of the dilemma of our times. There is a body of people —the Marxists— who have said that personality and roles *must* depend essentially upon industrial and technological relationships and their social projections. Therefore is Russia they plan not just the industries themselves but also the school system, the extracurricular activities, all the allegiances, all the job preparations, all the roles precisely in accordance with the logic of industrialization. They

must all *serve* industrialization. That is of course the basis of their culture, as we read in Marx and the latter-day Marxists. We see all this clearly not just in theory but in the public and private actions of the Russians. Their comprehensive but single-purpose plans are in some ways efficient than ours; yet efficiency is said outside the United States to be an American god. That is not a claim I would make; but plenty of Americans and non-Americans believe that efficiency is the chief American god. However, if the industrial and social efficiency is to be praised the Russians are more efficient. There is no waste: all the school programs, all the varied recruitment of different people, all the cultivation of different interests —all those things are planned and processed towards the fulfilling of certain roles which the technological state requires, and in harmony with that state. Industrialization, society, and the whole educational process are smoothly in gear. They are all said to be, and organized to be, different aspects of the same things.

That sounds like a prison. I would feel that it was a prison, and so would you. The question is, do the Russians? Some, doubtless, do; but not the majority, I am convinced. They know nothing better; they are told that their world is closer to "reality," and that it makes inevitable progress. They can learn from their fathers and mothers that it has meant material progress. Grim though their life seems to us it *is* better than it was; and it also seems to add up to a coherent and convincing pattern of "understanding". It is no use talking about liberty to people who do not know the meaning of the word. Strangers still untouched by what we call Western civilization may even believe that our "hysteria" offers no liberty. All observers agree that most Russians strongly feel that they are being *cultivated* by helping to construct a technological culture —a world in which jobs and leisure and home, school and society are different aspect of the same thing. The worst taunt that you can offer to a Russian is to tell him that he is not cultured. In other words you are telling him he does not perceive or

sympathise with his functional relationship as civilized and civilizing role in relation to others.

The Russians directly rule one-sixth of the world —mainly undeveloped. Outside the Soviet Union, not too far away, one-half of the total population of this earth lives. China, India, Ceylon, Pakistan and Southeast Asia make up about half of mankind. They are developing far faster in terms of population and indeed, in terms of the *pace* of industrial development than we are. They have not got as far yet; but the acceleration has begun. The fastest increase of population now is in South America. The fastest industrialization is in China. The rule of these human beings in their carefully planned relationships do not have to worry about old-fashioned obstacles of social theory or historical backlog as we do. These people have no co lonial villages behind them to perpetuate non-industrial norms of personality in the classroom or weekly meeting. They have no old congregational-style churches with elders and self government. They have not got the village pump, they have not got the village pub. They have none of these strongly formative institutions and emotions that reheased the west in social democracy before industry developed to insist upon a different order of proceeding. In fact, they are very often glad to repudiate their past, and go forward with a new logic. Such a complete revolution is a sometimes achieved that no other institutions are left for many of these people except the institutions of industrialization.

Half the people in the world are hungry. They want machines to rescue them, as they would say, from servitude, bondage, and less than human status. They want productivity —first to give them a better standard of living, secondly to make' "the good life" seem a project rather than a mirage. But they often see it in terms of efficiency in a well-knit society, as in the Soviet Union. For many of them the choice seems to lie between the Soviet and, shall we say, the American way. The system that we live in seems to them to be somewhat contradictory, inefficient, wasteful, and hypocritical. They see contradictions between the norms of our state and those of our

society, between those of society and those of industry. They also see that the rooms of our schools (whether we speak of principles or practice) are not those of adult life. All to often they remember that we are white people and we have exploited them.

In any case, there is no sense in our preaching about liberty to people who have never had it. There is no Liberty so great as that that will rescue a man from sweating from dawn to dusk and longer, with nothing but near-starvation as a reward. Thas is he only kind of liberty that many underprivileged people are able to think about. We invite them, however, to learn from us —as to take our industrial knowhow, our culture, our democracy. They are often told that this is a liberalizing and cultural instrument which we press upon them; but what happens? Americans, British people, Germans, and others go to underdeveloped countries and establish some industrial plant; but we forget that we ourselves, in going to school and thinking about our ideals, try to live out of consistency with our machines. Our philosophical, social, political and ethical ideals are really part and parcel of a culture that is at odds with industrialization; for industrialization has tried to be a law unto itself ("business is business"). It does not see itself as the heart of a new reformation or as a school for a new era. It assumes that other influences can secure civilization.

New nations coming to industrialization do not think they are taking on a bit of our apparatus, however, in industrializing like us they think they are taking on the totality. If there are no contradicting institutions strong enough to suggest our non-technological norms to them, then a totally new restructuring of human beings in an unprecedented relationship may be developed. This is evereplified by Mao's programs in China. A new culture, a new interpretation can be proposed for people so separated from one another over the scattered span of specialization that they can see no other comprehensive "world view." Furthermore they are scientifically controllable by radio, books, broadcasting, advertising, rationing, and all the other influences.

Mechanization, even in leisure-time "freedom", makes it very much easier to control people. This is not yet 1984; but in their histerical busy-ness (whether at work or in "free" time), our people are already amable to unsuspected direction —sometimes by apparently self-suggested norms. In the absence of a flobal understanding of the processes of our mechanized society, they serve the logic of the machines rather than the ancient rules of learning "humanity" by being significantly engaged with the rest of humanity —that is to say, by "making sense" empirically of work, society, and play together. Mannerisms of behaving like automata can already be detected in our western society. They can perhaps be particularly noticed in the United States where social and economic geographical mobility are so great that people become more uprooted and alone. In these circumstances people look for some other "meaning" or at least something to quiet on their doubts or give them "leadership". I have on three occasions worked with American professors or philosophy on a kind of little project in which we listed what seemed to us to be the basic tenets of Western liberal democracy. We listed liberal principles, but we mixed among them certain authoritarian (communists) doctrines or statements. We asked for true-false responses from graduate American students in various contexts —in good universities, in different universities and other places. It was astonishing to discover how many American students would sign up for the Soviet-type statements rather than for those of their own Founding Fathers. This is really quite shocking. Why does it happen? Because in our present state of uncertainty people want something that will fill the dark holes or hold the scattered bits together. In the absense of a system, which basically implies structure or growth and comprehension, they cling to the collective, the mass, the "people". Minorities, eccentrics, and the "Puritan conscience" have a hard time of it. Even eccentricities are a group affair. The gangs, the Beatriks, and peculiar fashions in songs and dances prove my point. When we say "people" nowadays, we do not think of the individualities of old New England but rather of a mass of identities.

How can the underdeveloped an uncomitted nations choose between totalitarianism and us? I would say —only by taking careful note of the fact that we are willing (as I hope we are willing) to acknowledge that it is not *school* that makes our culture, that it is not family that makes our culture. What makes culture now, as it always has done for the whole of mankind, is the whole leaven or structure of functional relationships in society and its industry. That is to say, culture is developed outside school. School, where it exists, is only one of the many formative institutions of our society —and it is all too often the mouth piece of the others.

To say so much is likely to shock a gathering of education, though of course it should not do so. It would not shock us at all if we were not continually confounded by the "smokescreen" words I referred to at the beginning of this talk. Part of our automatism in an industrialized society consists of behaving and thinking conventionally inside our little old-fashioned pockets of awareness. Inside these we may fail to notice how much we are being "processed" —or we may withdraw and become isolated from the great meanings of life outside. One of these little sheltered pockets is that booming activity called "school", perhaps more so in this generous and child-protecting society than in many others. Americans like their children to stay "in school" until they are 22 or 25. They try to make schools do everything for their students. Despite the manifest contradictions between the American way of life outside and the ethos and aspirations inside, school continues to be a sort of happy oasis from which all the countervailing suggestions and needs of industrialized actuality are exclused to an stonishing degree. True life adjustment is postponed. Many parents and teachers hope that realistic life adjustment will never happen to their children, for the good of their souls and personal integrity. But how can this boy-scout world of protracted "general education" make men and women fully appraised of today's actualities, or ready to grapple with them constructively as their maturity develops? May not such a preparation merely tourn out adolescents with an intellectual and ethical bag of theories,

packed for the contingencies of a world that has already passed away?

We all know well enough, at least notionally, that human beings mature. As they grow up from phase to phase of their lives, they can make what they have "learned" their own only by actually embodying it in formative experiences. Not just by "experience", but by formative and systematized experiences in every recurring circumstance of life. So many of the most important experiences in life can be understood only after a period of working over them, sometimes with stress and anxiety. This is especially true of the great issues of life, where real understanding requires not only cognitive knowledge but also emotional appreciation and moral decisions. It is all very well to be told about lowe when you are seven years old; but you know much more about it when you are seventeen. You know still more when you are married; even more when you have a family; and still more when your own children are seventeen. In this central concern of family living, understanding grows by being worked over; but this effective working over also requires personal maturity. In this as in all the great concerns of life, a mature understanding can certainly be helped by suitable guidance, provided that that guidance is given only as and when required, and in the right kind of doses. You can not really learn these big things in advance. Real education is this continuous process of re-appraising and re-understanding in the great issues after we have left school. It is specially difficult and specially necessary in our changing world. In far more ways than teachers usually acknowledge, almost all kinds of knowledge —but especially the most radically formative kinds which add up to "humanity" and culture— need to be worked over continually and re-perceived continually. They can never be static, because development is the concomitant of growth. Where growth stops, decay sets in. That is a universal law for organic creation; and it is of special validity in the learning process. When all is said and done, if a teacher stops being a mere purveyor and technician and becomes and educator, his prime concern is to make the children valiable in the world.

He wants them to be able to make their own way, and to do so with purpose. So he should be glad that they escape from him. He should hope that they will become so thoroughly and significantly involved in society that they can not only understand but actually help to shape it.

No one can, however, start to shape the world unless he sees where to begin. Unless the outside world truly seems to have familiar items which a child can grapple with, how can he start in? In pre-industrial times a long process of induction into some apprenticeship or other was the lot of most people. It might have been no more than following father's plough, or helping mother in the kitchen; but at least it was familiar enough, and was progressively evocative of skills. Such a humble career quite often induced a responsible participation in a recognizable pattern of relationships with recognizable people. Thus it could encourage a widening horizon of understanding; and at the same time it could actually deepen understanding.

Few except the crazy romantics long for a return to such a world. But there is no reason why our own release from drudgery should rob us of the simple truths about education and culture that mankind's progress through the millenia have made manifest —above all, the manifest truth that everything that matters must be learned and re-learned continuously, in relation to purposeful activity, in relation to a meaninful social system. All this indicates that the best that juvenile schooling can do for a child is to anticipate his significant engagement as a responsible constituent in an evolving life. School must therefore pass on suitable knowledge about the most influential influences outside; it must encourage suitable skills, including the ability to disengage oneself no less than to engage oneself. It is bound to communicate certain norms and values; but it should also encourage an evolutionary questioning of those values. Above all, school must see itself only as a humble and necessarily incomplete preliminary to the greatest kind of educational activity —the growing up of men and women in families, in worth-while and evocative work, in the shaping of society and its percept-

ions. Without such a follow-up, our "education" is as abortive the too-hasty sucess of the new-literate in an underdeveloped country, who may forget how to read within a few months, all because he has so little opportunity to use his skill or to see the sense of it. We cannot become educated as men and women, and we certainly cannot stay educated, unless our education is an expanding and increasingly satisfying process.

This all means that such opportunities for continuing self-recognition and self-development *must* be daily provided —and provided along the whole spectrum of human activity, including the most comprehensively demanding activity of our times, which is the business of living industrial, urban lives. Our education can only be achieved in a society and industry organized to be educative. It is no use pretending that somehow we can ignore the daily routine, and count that of no significance provided we can get "culture" and "humanity" in some part-time compensation. Life does not work that way. A person who speaks very well, but stops hearing others because of advancing deafness, quickly ceases to speak normally. His voice leses its timbre and modulations. A blind person who cannot correct himself against the walking patterns of others soon stops walking normally. There is nobody so crazy as the person who has lived alone for a long time. Yet we, by means of our specialization and our destructuring of the multiplicity of modern roles, are making it impossible for people to be normal because we break down contact.

There is only one solution, as I see it. We must help people to see (if possible) the totality of life, or at least to feel it in some dim way. We need to give everyone a daily opportunity to learn and re-learn, to test and re-appraise all that they have ever perceived as the pattern of their existence. This perception must be implicit, as well as explicit in mere words or theories. None of these opportunities will be of the slightest value unless they are somehow co-ordinated with those of others, and consistently prepared for from schooldays onwards. The most important learning time for anyone is always the moment of crisis or strain —the here-and-now of the daily decision on

the job and in the home. It is here that we find both the criterion and the medium of the best education.

Such a conclusion seems justifiable in a society like our own, even though we have a large number of schools and other educative institutions.

How much more true, however, is it likely to be in those areas of the world where formal schooling is truncated or non-existent? We have to face the fact that nearly all the children in the world must be content with an education lacking most of whatever benefits our school offer to our children. Even in Europe and other highly industrialized parts of the world, an expensive and protracted schooling of the American type is just unthinkable for economic reasons alone. Sometimes, let us add, observers are not satisfied that a pre-adult tutelage in a school on American lines ought really to be described as education at all—at least, without some further qualification. In countries like Germany, Austria, Italy, and to some extent in Britain, it is increasingly felt that some vocational linkage or pre-adult orientation towards the practicalities of life is far from being illiberal, but may rather be an opportunity for young people to take part (while being schooled) in activities that seem to them to be "real." As long as there is no final stratification of society and opportunity, there need be no injustice. Though injustices have happened often enough in the past through some such device, that is no reason for supposing that they must invitably happen. We might just as well expect the schools of today to perpetuate all the cruelties of old-time schools. It should be borne in mind that I am concerned not with dragooning people into industry, but on the contrary with helping people to find themselves, and to discover the meaning of modern life more fully by taking on a more significant role. Jobs teach roles whether we like it or not. Nowadays, most adult situations teach *against* what the schools seem to stand for; or else; in the absence of positive contradiction, they fail to fulfil the formative progress which the schools should have initiated. So we find ourselves and our young people in the hysteria-making situation referred to earlier. What seems inescapable is that

we reconsider and safeguard the total relationship of school, families, jobs, and society as culture-making and culture-perpetuating institutions —none of which can succeed without all the others. We must look for a continuum of complementary perceptions add suggestions.

Educational opportunity therefore really requires that industrial and social structure should make sense to people. People must feel that *they* belong to the daily business of our civilization, and that *it* belongs to them to the extent that it requires a responsible reaction, if not a responsible engagement. I do not suggest socialization in an economic sense, though for educational reasons I am very much interested personally in the kind of participation in management and in constructive communication that is often technically described as "industrial democracy". Whatever we think about proper industrial relationships in the U. S. A. or Britain, we cannot blind ourselves to the fact that for many other peoples something faintly resembling socialistic participation in management may be as important and immediate a step towards social emancipation as political partnership is in our kind of democracy. Certainly it may be true that the establishment in other places of our kind of political democracy will be indefinitely postponed unless we can somehow embody in the natives' daily working relationships a kind of school for democratic activities and perceptions.

But before anyone else can do this, we here must reconsider and perhaps reconstruct our own economy and social system to this very end —this cultural end. We must re-orientate our thinking about school until we come to see it realistically as a more or less infantile preparation for true education, which must be a necessarily adult initiation into the fuller meanings of life. We export to underdeveloped countries the elaborate structures of our industrial organizations; but in those places there are no alternative schools for personal responsibility and independence. So as we export our industries and what William H. Whyte calls "The Organization," why cannot we make sure that we are also teaching democratic civilization —instead of

either authoritarianism in the service of the "boss" or a pre-communist sense of personal insignificance and bewilderment.

It is no use pretending that the forthcoming expansion of automation will make vocationally-linked education outmoded. It does the opposite. Automation calls for more skilled workers rather than less skilled; that is, for more education in relation to work rather that less. In any case, daily leisure (even if it were to amount to the rest of the time spared after a thirty —or forty-hour working week) is itself processed for us by industrial controls. There is no section of living that escapes the ramifications of cloczing-in and the conveyor belt. We shoul also remember that any forward-looking educator must be thinking all the time about *our* impact (i. e. the impact of our western techology) on people who know no such leisure. We can see under our very noses at home what happens to the leisure of young people for whom school is simply something to leave as soon as a good job is obtained. For all too many of them, a "good job" is simply one that gives them plenty of time and plenty of money with the help of which they can be processed by the instruments of mass entertainment. These are not always bad, of course —not by any means; but they are a good example of how the instruments of industrialization shape the lives and norms of people unwittingly whether at work or at play. For a person whose sense of personal integrity and meaningfulness has not become well established in a continuous and meaningful contact with other people's lives and work, the means of mass communication may be the only effective channel of "understanding" what life adds up to. The young people growing up in the world that we and our forefathers have made are all too often puzzled and filled with a sense of bewildered loneliness. In such a state they are ready to welcome all the suggestions of "getting together" with all the other bewildered young people in the organization that is so well prepared for them —if they are receptive enough. What we do in our own society, in provinding alternatives to the suggestions or organized industry and industrialized outlook-building, will decide whether we go down to history as civilizers or as the disin-

tegrators of culture. We shall deserve the latter description if we allow the education of mankind to be so minutely fragmented and so widely scattered that the only remedy seems to be some system of mass control. We need to return to the type of education which will help people to acquire a rounded or "global" view of their own situation, to develop it in a world perspective, and to foster and re-appraise their "world view" with lifelong opportunities of every kind.

It would be foolish to end on a note of pessimism. We have seen the risk of Russifying ourselves —if the term can be excused. We have seen the still greater risk of unintentionally exporting the "masssociety" with our mass machines. That is our moment of truth —the shock we need. We can now reconstructed our whole thinking about schools, society, and civilization in an increasingly mechanized world. Our very machines and mechanical controls do at least give us an abundance of educational opportunity, and the economic means wherewith to make opportunity for re-education available to all. Man is constantly engaged in conquering the outer environment; he can just as well turn his skill to the conquest of the inner environment —the cultural matrix of his personal evolution. In doing so, he does not need to destroy or impair his machines; he bestows on them their true fulfilment as the instruments of humanity and civilization.

Nevertheless, the strugle will be difficult. It will be necessary for all educators, parents, and politicians to see their roles in this new perspective. It is never easy for anyne to see himself with an unprejudiced eye, of course; and for this reason those communities who stand, so to speak, on the fringe of a great industrial civilization (while still retaining a rich appreciation of pre-industrial values) have a very special responsibility in the world today. I refer particularly to such communities as Puerto Rico, to the awakening nations of Africa and South America and Asia. Perhaps some of the smaller democracies in Europe are still uninvolved enough to help in this re-appraisal of the human process of developing civilization. Wherever help can be found, it is sorely needed. We

must welcome all suggestions; for the truth is usually discovered after many complementary but disparate viewpoints have indicated the central truth which they all have shared imperfectly. For these reasons, in their different ways, the new nations and new partners in the Caribbean may have much to teach their powerful friends and neighbours.