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EDITORIAL

What should be said on the editorial page of the first issue of *The Journal of Educational Thought?* Obviously the content must speak for itself. Beyond this, however, it seems appropriate for the editors to speak briefly of the purpose of the Journal, of the contributors, and of plans for immediately ensuing issues.

For a number of years the Faculty of Education, University of Calgary, has been considering the publication of a journal for the discussion of educational ideas. There is, of course, no doubt that the improvement of public education depends substantially on research. But there is equally no doubt of the need for a complementary kind of activity—for studies of a more speculative or philosophical kind, directed to a broader kind of readership than usually pertains to research publications. Hence *The Journal of Educational Thought*—for academicians, teachers, administrators, and for the general public as well.

While inevitably much of the emphasis will be Canadian, the total context will be international.

The editors consider themselves especially fortunate in the range and quality of articles for this first issue. In the field of comparative education Charles Dobinson, Head of the Education Department at the University of Reading, England, is widely known on both sides of the Atlantic. Individually, the challenges which he sees for "Education Tomorrow" have been recognized by educators around the globe: Dobinson has been able to give them a kind of rationale, and even to suggest some of their moral implications. James Paton of the University of Toronto has addressed himself in a most scholarly way to the perennial problem of "Teaching People to Think." He would be the last to claim that he has solved the problem; he has, however, provided a very useful perspective and a novel analysis and schema. Joseph Katz, of the University of British Columbia, is a long-time student of comparative education. The relationships which he sees between Britain and Japan, educationally and otherwise, will intrigue those who like to play the game of coincidence versus cause-and-effect. Donald Vandenberg, The University of Calgary, has contributed what might almost be called a case study of "Ideology and Educational Policy." His exhaustive pursuit of the kinds of thinking associated with ability grouping is especially relevant to the value of involvements of this question.

Everyone will be edified and entertained by Charles Phillips' reminiscences of "Schooling in an Earlier Era." Formerly Director of Graduate Studies at the Ontario College of Education, and now rightfully recog-

nized as the dean of Canadian educators, Phillips is actively at work on studies of educational aims. The editors are pleased indeed to have him represented in the inaugural issue of the Journal.

Some of the articles in this and in succeeding issues will, of course, be controversial. The editors plan where possible to recognize opposed or divergent points of view in a "letters" or *forum* section, and from time to time in full-length articles. They hope that the emerging content and emphases of the Journal can be determined rather directly from the reactions of our readers.

The size and frequency of the Journal, too, will depend on our readers. We are confident that it will grow bigger, or more frequent (or perhaps even both) in the coming year.

CHARLES H. DOBINSON

University of Reading

Education Tomorrow

What criteria can one use in order to judge the suitability of the content of education at any given period of time? Only, it would appear on reflection, those which have underlain all teaching of young people at all times in all places; namely judgments upon the effectiveness of their studies in preparing them socially, intellectually and economically for their lives as adults.

In most of the eras of the past, though not, of course in all, changes in the nature of society were sufficiently slow for the demands likely to be made upon the developing adult to be clearly envisaged. So education could be planned with these in view. First, there had to be the full appreciation of the past—the young person had to be steeped in the traditions and customs of the society into which he had been born. Secondly, he had to be helped to envisage the part which he would be expected to play when fully grown. Thirdly, he had to be given the necessary knowledge, and trained in the necesary skills, physical or intellectual, to be able to play that part.

Today, in a period of accelerating change, it is difficult to discern which of the wide range of human capacities will most be called upon in the adult of tomorrow. But, even without the gift of prophesy, we can see that tomorrow's adult, in whatsoever part of the world, will

(a) be subject more to the influences of mass persuasion and suggestion than at most other periods of human history in whatsoever society;

(b) have information thrust at him, almost from the cradle, by organizations which have no concern with his personal good or his fullest development as a sentient being;

(c) have longer hours free from subsistance toil than man, in general, has ever had before;

(d) be thrown into contact with more different races, colours and creeds than ever has been man's lot hitherto;

(e) be continually challenged to deal with the concepts of the infinitely large in space and the infinitely small of the particles constituting the nuclei of atoms.

Accordingly, we have to reshape the curriculum of the first ten or eleven years of schooling so that, at least to some extent, the adults of tomorrow will have been prepared for meeting the problems that they must face.

We may also consider that the time has come to rethink the aims and purposes of universities in relation to the effect of their courses upon the general outlook of their graduates. And, regarding European and British universities, we have to ask, "Is early and intense specialization of the best intellects going to prove a sound policy for the world of the future?" May it not be better to make part of every university course a disciplined examination of the forces shaping the destiny of man?

An attempt somewhat on these lines has been made since 1950 in the first year course at the University of Keele, Staffordshire, and several of the other new universities of England have set out to establish courses less irrelevant to the present and to the future than many of the traditional courses in the fields of letters and the humanities. But the straight-line thinking of the past has been hard to escape from, and it is probably true to say that the progress was more in the minds of the planners than in the realities which they have produced.

So far as the universities of the U.S.A. are concerned, the system of credits does not lend itself to synthesis and the famous early post-war Harvard Report on General Education, great though was its initial impact, has not led to a widespread change in the aims of under-graduate courses.

Thus there is little hope that the leadership for a change in the content of schooling, especially in secondary schooling, will come from the universities. And this reflexion is all the more disturbing since in many countries, and especially in Britain and Western Europe, it is the specialism of the various faculties and departments of the universities which, in the last analysis, perpetuate not only the fragmentation of secondary school studies but, very often, their irrelevance.

However, several channels of hope exist. In Britain the former Colleges of Advanced Technology, now wearing their ermine-edged robes as Technological Universities, and many of the Technical Colleges, now allowed to award degrees of the Council for National Academic Awards, are in the position to devise new courses and need not feel enslaved to the past. Indeed, they would be false to the members of the Robbins Committee that proposed this enfranchisement if they do not create courses which shall be truly relevant to the problems of the future.

Similarly, it is open to the new universities arising in the developing countries, often relieved of subservience to the patterns of the former colonial power by the economic and cultural assistance of other nations, to strike out on lines of their own. And because, very often, their economic and political impotency prevents them from taking sides in ideological conflicts, they should be able to organize courses which are nearer to the objective analysis of situations than can be built up where all-per-

vading affirmations arrange thoughts into definite patterns, like magnetic lines of force fixing the arrangement of scattered iron filings.

But the schools of today dare not wait for the downward seepage of ideas from universities whether overseas or at home. So bold innovations must be made among the schools themselves. And, fortunately, in most countries outside the communist ones, there are large numbers of independent or semi-independent schools where experiments can be initiated. (In some countries, too, there are official experimental schools run on public funds). Moreover, the independent schools have associations which might be led to see the valuable leadership they could give by grouped planning of new syllabuses rather than, as at present, all of them making their own varying, and often ephemeral, experiments.

Then there are in all countries, associations of teachers which have helped in the advance of ideas: outstanding among these must be the French group which, since 1945, has published the powerful reform magazine "Cahiers Pedagogiques."

Then, throughout North America, there are university schools of education which could link up in the establishment of high-level working parties on curriculum reform. Specially selected men and women would need to be released on salary from their respective universities for at least a year to work together (but bringing consultants from all over the world) in establishing principles which could be used as criteria for building curricula which, for the various ages, stages and types of education, would be truly relevant to the future.

And in other parts of the world there are educational organizations which, if the finances were available, might be grouped internationally in high-level working parties on the same quest, namely adapting our present ideas of schooling to meet the challenges of the future. These challenges will be numerous and great, but they will certainly include those listed (a)) to (e) at the beginning of this article. Let us, therefore, take these specific challenges one by one and consider how the content of schooling might be changed to meet them.

Clearly, the most fundamental and most important issue is the defence of the human mind against the ever-increasing concentric pressures of organized and unorganized mass opinion. These pressures are most vividly seen in the great nations where the socialist and capitalist economic theories are represented as for ever antithetical and irreconcilable, namely in the U.S.S.R. and China on the one hand and in the U.S.A. on the other. In the communist countries the control of opinion is by power from above; it is open, clear, constraining and irresistible. In the U.S.A. it is exerted by hidden or disguised forces, but it is none the less effective in achieving its object. In most other countries of the non-communist world the integrity of the human mind on this issue is rather less assailed by mass forces, but the hidden forces are still present and the almost general

suppression of news of constructive developments inside communist countries and the writing up of any item of information which can discredit them are but two examples of the way in which the anti-communist campaign works even in the most liberal countries of western Europe. Unfortunately, this absence of objective reporting on communism plays into the hands of extreme left wing groups and puts haloes around information which they obtain from communist sources. Indeed it causes the build up of illusion which only actual experience of life in communist countries could destroy.

All this makes more difficult the task of the educator. So, if one believes with that great educator of the inter-war years, the late Sir Percy Nunn, that "nothing good enters into the human world except in and through the free activities of individual men and women" then one is committed to defending the minds of children and of adolescents against "principalities, against powers, against the rulers of the darkness of this world," equivalent to those against which St. Paul wrestled nearly two millennia ago.

But *how* can schooling of tomorrow help to protect the individual mind from the ceaseless infringements of its neutrality in the face of fact? And protect it also from the forces which would determine, even from earliest childhood, its answer on matters which lie far beyond its powers of understanding? Firstly, at the early stages of childhood, by returning to the basic means of education which primitive man, where he still exists today, and at all times in the past, has used with success, namely the maximum development of his physical senses: "Get your pupil attentive to all the phenomena of nature," said J. J. Rousseau. "Let him never know anything because you have told it to him, but because he has grasped it himself. Don't teach him science: let him discover it. If ever, in his mind, you subsitute authority for reasoning, then he will cease to reason; he will be only the plaything of the opinion of others."

For nearly two centuries this remarkable expression of insight into the ways in which we have destroyed self-confidence and impeded the development of the independent mind in those we have set out to "educate" has been ignored. We have not realized how, in those whom we have educated most, we have created mental cowardice and lack of self-confidence by our praising them while young for mouthing the second-hand thoughts which they have absorbed from teachers and from books. We have honoured them for being the plaything of other people's minds. Worst of all, we have ourselves, we pedagogues, most of us, been the supreme examples of such playthings.

If the reader considers that this theme of the independent mind has been overplayed, let him turn to the opening chapters of J. K. Galbraith's *The Affluent Society* and read how, as playthings of other minds, the economists contributed to the sufferings of humanity during the depression

and the periods of tragic unemployment of the first forty years of this century.

The world of tomorrow will need independent minds and far more of them than ever before. The foundations of such independence—in those countries where school attendance is compulsory—will be laid—or destroyed—in the first few years of schooling.

Fortunately, Rousseau's approach to learning is now being used in the early stages of education in the best classrooms of many countries of the world and with children four or five years younger than Rousseau had envisaged. It should become universal, and the joy of discovery and of independent work should everywhere make the first years of a child's life at school a period of fascination and great happiness.

The independent work approach must, however, be maintained in the later years of childhood and throughout all stages of adolescence in the secondary school. Examinations of the formal written kind, requiring the regurgitation of information, must cease to exist. The out-of-dateness of the average textbook, and its inevitable restrictiveness, must be recognised, and learning must result not from cramming by a teacher, but from the pupil's own synthesis of information from the documentary films, the well-prepared television and sound radio lessons that he will see and hear, and from his consolidating and integrating this accumulation of knowledge and ideas by (a) discussion under the leadership of the teacher, (b) his own follow-up reading in the school library and (c) his activities in laboratory, workshop or at home.

There are several corollaries from all this. First, there must be proper development inside every school, including primary schools as the vitally important beginning, of guidance services to the pupils, whatever their age. The world knows now, as religious minds have long suspected, that the home environment into which a child is born, the influences which bear upon him in infancy and in the nursery years, and the manifold cultural factors of social environment are, for the majority of children, the real determinants of their intellectual development. Guidance services inside the school, working with welfare services outside the school, and bringing about the closest possible liaison between parents and school, are an essential part of any satisfactory educational system. Without this, a considerable proportion of the money spent by nations on education fails to achieve its object, as we can see today from the increasing proportion of juvenile delinquency among some Western nations that spend relatively heavily on their educational system.

Secondly, whilst schools will continue to give internal tests to evaluate teaching techniques and to stimulate the pupil in his self-evaluation, as Sir Griffith Williams, the Chairman of a great examining organization, wrote in 1956, "the function of examinations in the future will be to fit the right pegs into the right holes and for this purpose written examinations . . . are a poor instrument."

Thirdly, every secondary school must have a large library where up to about a third of the pupils, at any one time, may be found at work. They will need the help of trained teacher-librarians but the help should also be sought, on a voluntary travel-expense refund basis, of retired teachers, student alumni of the school, and of cultured persons generally. In the U.S.S.R., retired teachers and student alumni of the school give regular voluntary service to help pupils who need extra assistance. Unless the Western nations have lost the power of evaluation except in terms of money, it should not be difficult to recruit this type of assistance for the school libraries.

But even these will be different, in their content, from the normal library, for the standard tomes and the classics will be poorly represented, whilst up-to-date books of reference over the wide range of studies will be in plentiful supply. Moreover, because the speed of change in the world today is so great that many well-written books are out of date by the time that all the processes of printing and publication have been completed, there will be in the school library a vast array of pamphlet material, reports of committees and of pressure groups, the material which puts forward new ideas, or old ones dressed up in new clothes; material not generally to be found in book shops because the financial return on sale of such material is negligible. This material will be used by pupils in follow-up of discussions with their teachers, after living questions have first been presented by film, radio and television in a challenging fashion.

Yet this working school library of the future will be even more different from any normal school library by virtue of its multilingual collection of daily newspapers and weekly periodicals, ranging from popular scientific and artistic ones to others giving a cross-section of political opinion.

For the secondary school pupils of the future will all be capable of reading, or at least of perusing to advantage magazines in at least one language other than their own. That is because we know now, as we did not know a few years ago, that the proper time for a child to begin to learn a second language lies between the ages of six and nine, and that he should learn it by the "direct" method. Experiments with these age groups, and on these lines, begun in the U.S.A. by Harvard University more than a decade ago, and followed rapidly by others in many countries of the world, sometimes with extensive development of radio lessons, have met with great success. They have shown that such studies, far from holding back the development of linguistic ability in the mother tongue, tend to accelerate it. As a consequence, a powerful wave of enthusiasm for this development in the early years of schooling is sweeping the globe. So, within a few decades almost every ten-year-old child in the world will be able to speak at least one language other than his mother tongue, and others, including many West Africans, will speak two such languages. And almost every child in secondary school will be able to gain scientific and other knowledge through the medium of a language other than his own, with all the expansion of his outlook that this implies.

The implications of all this for the teachers are far-reaching, especially for the teacher in the secondary school. Since he will no longer be condemned to cram his reluctant pupils for their regurgitative examinations, he will not have to pour out, day by day and year by year, the same old information in the same old way. Instead, in his field of special study, whatever it may be, he will need to be not very far behind the advancing frontiers and to be learning continually from his University confreres. Of course, it will not be possible for him to teach more than perhaps 12 or 15 lessons per week when he is responsible for planning films and selecting the right radio and television programmes, and preparing himself widely at the same time for all the penetrating questions which will come from his pupils in the follow-up discussions. This will *not* mean an increase in the number of teachers: indeed, a decrease is desirable so that the profession shall be restricted to those who really are gifted for this work. During many of the school hours during which, on the existing system, teachers would be subjecting their captive audiences to the usual round of chalk and talk, the pupils of the future, often in groups of one hundred or two hundred at a time, with only one or two teachers present, will be learning from films or televised lessons. At other times they will be working on their own with teaching machines, or in language laboratories, or with videotape recordings of lectures and science demonstrations in carrels, such as have been developed in a number of places and pioneered at Grand Valley State College, Grand Rapids, Michigan. At present such aids do not bring about much economy of staffing, but technical advances are so rapid that we must expect this to take place.

Because of all this provision of books, periodicals and modern teaching aids, the school day, for the older pupils, will be longer and tomorrow there will be a higher proportion of older pupils in the schools. But there will be corresponding reduction in the hours of private study at home. This will be a great advantage to those many gifted pupils whose home conditions have not been conducive to study or thought. This longer school day might seem to imply longer hours per week for teachers, but this will not be the case, because all the control of the instruments for projection, for radio, for television, language laboratories, teaching machines and the like will be in the hands of skilled technicians. And, in addition, trained technicians will be available for all science laboratories, so that the teacher can devote himself fully to those effects upon the minds, outlook and characters of his pupils for which he is employed.

His relationship with the pupils will have changed, too. No longer will he be the main source of information: he will be the leader of a team of eager minds, trying to probe into the many problems of the world of their future adult life, a world so complicated, so bustling, so noisy, so crowded that the life of today may seem almost medieval in its stability.

Somehow, too, the teacher of tomorrow has to help his pupils, especially those without a religious background, to establish and maintain values "as touchstones by which questions of taste and morals are to be tested."

But he has also to meet challenge (b) and to assist his pupils to select, from all the information thrown at them by the mass media, that which is significant; he must show them how to penetrate the disguises of salesmanship and, in the Western World, where vast international financial tie-ups underlie the most innocent-looking enterprises, he must keep them aware of the deep currents circulating beneath the economic surface on which they live.

The challenge (c) regarding the proper use of leisure must also have a revolutionary effect upon school life, because no mere "stepping-up" of what is going on at present will suffice. The abolition of the written examination, which we have already postulated, will release, in a large proportion of pupils, creative abilities which have been smothered, atrophied or consciously suppressed by the doctrine that schooling and the acquisition of information are synonymous and have the same boundaries.

As the leading workers in the study of creativity have shown, the conditioning of teachers by examinations is such that they usually fail to recognize creativity when they meet it. Here is a relevant query from Guilford, of the University of Southern California, a pioneer in this field:

> And which children should be regarded as gifted? The current answer, at least in many places, is the student with a high I.Q. and with high grades (the two indicators usually strongly correlated). Such children may be those who please their teachers most because they learn rapidly under conditions that call for uniformity of thinking and acting within a group. The more creative child, who may be higher in divergent-thinking abilities and not so high in cognitive abilities emphasized in present tests and examinations, may be a source of annoyance and not recognized as gifted. And how many children who are potential composers or artists, who are very high in concrete intelligence but not so high in academic intelligence, are missed when the "gifted child" is selected.[1]

Studies regarding creativity in children have been proceeding fast and widely in the last few years. As a consequence we may expect that within a decade such passages as that quoted above will have had effect upon many of the teachers of some of the more advanced countries. So we shall expect more opportunities to be provided, on the school premises, for creative drives to find expression.

Indeed, school life of the future must include, on the timetable, at least four or five hours per week devoted to freely chosen activities in which help and leadership is available, but no restriction or compulsion. In the U.S.S.R., the attempt is made to provide adequate outlets through the "Circles" for hobbies in schools and in the Pioneer Palaces. But the much more attractive design and equipment of Western schools make these buildings the natural and proper place for activities which are an essential part of education. Western schools have, perhaps, for the leisure of the future, something to learn from the U.S.S.R. in the very widespread

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[1]J. P. Guilford, "Parameters and Categories of Talent," *The Yearbook of Education* (The Gifted Child) 1962, pp. 123-124.

development of scientific hobby groups of all kinds, not least those in astronomy, geology, every aspect of nature study, and archaeology as well. The ideal for the future, which will put the working man, thanks to automation, very much in the position of the "free man" of ancient Greece, must be similar to the Greek ideal. As Marrou has shown us, for the Greeks of Hellenistic time, personal culture was:

> The most precious of all good things given to mortal man. That is why, moreover, we find upon so many funeral monuments, on epitaphs, on bas-reliefs, on statues, a recall of the intellectual culture of the dead. Whether that was at the express wish of the dead person, or as a result of the initiative of the next-of-kin, these persons are shown to us as men of letters, as orators, as philosophers, as artists, as women musicians and so on.
>
> These monuments do not necessarily belong, as had hitherto been supposed, to people who were intellectuals by profession, writers, artists, or lecturers: we know today that they were, in most cases, dedicated to people whose livelihood was gained in quite different fields; they were merchants, soldiers, doctors. But, whatever they were, all had wished to have recorded on their tombs one sole thing; that they had been initiated into the science of the Muses, that they had had access to that incomparable treasure—the culture of the mind. . . . So to them the cultured life appeared as a reflection upon earth, as an advance taste of, the happy life of those souls favoured with immortality.[2]

If not too high, this may seem an appropriate ideal for the secondary schools of tomorrow—some two thousand years later—to hold before the eyes of their pupils.

But in practice they have, in addition, to achieve something far more difficult—to give to the majority of their pupils such a delight in study, such a burning desire to understand what is happening around them, in human society, in particular, that life-long study, vocational, scientific, political and cultural, will be taken for granted. Indeed, the intricately complicated life of tomorrow can be controlled for the good of mankind only if a sufficiently large proportion of men and women are prepared to devote, without material reward, a great deal of their free time to understanding what is happening around the world and to helping to create, in their various fields of interest, a worthy and balanced public opinion. The creation of such an attitude to the responsibilities, not merely of national citizenship, but of World citizenship, must be an important part of the work of the secondary schools of tomorrow. Without it, there will be no future for which to educate.

It is not merely in "general" secondary education that this interest in the life of the community must be engendered, for all aspects of *technical* education will also play their part. Indeed, in some countries, the civic studies which form a compulsory part of all technical courses, are in both method and content, far in advance of those in the traditional secondary schools. Such technical colleges are already fulfilling the prophesies of Condorcet, who wrote:

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[2]H. I. Marrou, *Histoire de l'Education dans l'Antiquité* (Paris: Editions du Seuil, 1955).

> We shall prove that, by a suitable choice of syllabus and of methods of education we can teach the citizen everything that he needs to know . . .; to know his rights and be able to exercise them; to be acquainted with his duties and fulfil them satisfactorily; to judge his own and other men's actions according to his own lights and to be a stranger to none of the high and delicate feelings that honour human nature; not to be in a state of blind dependence upon those to whom he must entrust his affairs of the exercise of his rights; to be in a proper condition to choose and supervise them.[3]

But this happy state of affairs is far from universal in technical education, and, in some Western countries, the International aspect of citizenship training in technical education is particularly neglected.

This leads us to challenge (d), that of the pupil's frequent, and perhaps close, contact with other races, colours and creeds in his adult life in the day after tomorrow. If the primary schools teach their little children along the lines suggested by Rousseau, and common now, one is pleased to say, in many countries of the world, then no seeds of racial or religious prejudice will have been sown. We know, today, that there is no *natural "colour bar"* among small children: such a malevolent attitude has to be taught by adults. But, in the secondary school, the *intellectual* basis of tolerance has to be taught, and for this there can be no better approach than the anthropological and the evolutionary. To form the mental picture of this strange biped struggling through long aeons of time in his battle with the other animals and the vicissitudes of his environment, semi-arctic or tropical as it might be, reaching at last a stage when moral principles begin to emerge and at long length a stage when religion evolves from the animistic to the spiritual, is to lay the foundations for tolerance and understanding. The pupil can then grasp how each race is, to a large extent, the product of its geographical environment and its climate and, in its outlook, the prisoner of its history. We cannot see things through French eyes if we are born in England and grow up there; and an Arab girl brought up in a strict Moslem home, especially if she has been subjected to the cruel circumsection operation about the age of ten years, cannot really understand the outlook of an American Methodist girl student of the same age. So secondary school pupils need to learn how greatly we are all conditioned, and how little our minds are truly free. And anthropology, the study of man, is the ideal vehicle for this learning. We have not yet found a way of presenting this science to adolescents—but we must, and that will be one of the achievements of the schools of tomorrow. And Unesco, with its departments of both Education and Science, will no doubt play its part in universalizing this approach.

Moreover, out of this common background of man's struggle against harsh nature, against himself with his inherited instinctive drives, making him selfish, aggressive and fearful, there emerges the picture of man co-operating with man: the International Labour Office, the Common Market,

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[3]Marquis de Condorcet, *Sketch of an Historical Picture of the Progress of the Human Mind* (London: Weidenfeld and Nicolson, 1955), p. 182.

the World Health Organization, the Food and Agriculture Organization, and so on. But beyond these, when the primary school pupils of today are approaching middle age, there must lie a much more integrated world, in which the racial and political balance will be vastly different from anything most of us can now conceive. For, in 30 years time, for every 5 human beings from Europe, the U.S.S.R., North, Central and South America and from Africa, there will be 8 people in, or from, Asia, and at least 3 of these will be Chinese—and educated! So, if the western secondary schools of tomorrow do not prepare their pupils to understand something of the history and culture of the Far East, they will scarcely be able, as adults, to play their part in creating the harmonious co-operating world which is the only alternative to a global holocaust.

There remains challenge (e): the understanding of, or at least the grappling with, the concepts of the infinitely large and the infinitely small. The effect of nuclear bombs is something which most of us cannot really envisage, because multiplying anything that we can handle by the factor of one million is an operation which we cannot truly conceive, however glibly we may use the words. Yet this is the minimum factor which can be used to compare a nuclear bomb explosion with that of the biggest known chemical bomb. At the other end of the nuclear bomb operation we are unable to conceive, in any meaningful way, radiation particles a million times smaller than the smallest object we have ever seen under the microscope, but which can go on being emitted from nuclear fall-out for decades, and all that time destroy human life. President Johnson, in a broadcast to the American people by television and radio on January 21st 1964, tried to make the atomic stock piles of the U.S. and the U.S.S.R. meaningful by saying that the existing nuclear explosive power of the two countries was equivalent to that of 10 tons of T.N.T. for every man, woman and child on the face of the earth. Today, it is doubtless even more.

Problems like this, dealing with vast numbers outside human experience, are going to be commonplace for the adults of the day after tomorrow. When the adults of today were children, the moon, at a quarter of a million miles away, was considered to be rather inaccessible: the children of tomorrow may be planning a trip around it. Clearly, the science teachers of tomorrow will have a difficult problem, for humanity will require them to give to the majority of the adults of the day after tomorrow some capacity much greater than that possessed by most adults of today, of forming meaningful concepts concerning such things as distances which are measured in thousands of light years and of sub--atomic particles of great variety setting up a complicated pattern within the infinitesimally small nuclei of atoms. If the science teachers of tomorrow cannot achieve something of this kind then there is the danger that the physicists of the future will become the international witch doctors of the 1990's, speaking their own mumbo jumbo, performing their own miracles and bringing order by fear into an otherwise disorderly world.

On the other hand, with the development of the New Mathematics, the science teachers of tomorrow, in co-operation with the teacher of mathematics, may be able to give an aesthetic quality to the mysteries of time and space and energy. The great astronomer of an earlier generation, Sir James Jeans, wrote:

> To my mind, the laws which nature obeys are less suggestive of those which a machine obeys in its motion than those which a musician obeys in writing a fugue. . . . And if the "true essence of substance" is for ever unknowable. . . . then the universe can be best pictured, although still very imperfectly and inadequately, as consisting of pure thought, the thought of what, for want of a wider word, we must describe as a mathematical thinker.[4]

If the scientific and mathematical struggles of the minds of the teachers and the pupils in the secondary schools of tomorrow bring them to this sort of reverent approach to the Universe, it will make easier the solution of their daily problems in the relations of human beings to one another.

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[4]Sir James Jeans, *The Mysterious Universe* (Cambridge University Press, 1930), p.. 136.

JAMES M. PATON

University of Toronto

Teaching People to Think:

Unresolved Dilemma and Instructional Challenge

I. The Problem

This paper is addressed principally to staff members of faculties or colleges of education, and its theme is that, whether lecturing in foundations subjects or in academic course content and methodology, they should attempt to bridge the widening gap between educational theory and research on the one hand and, on the other, the classroom teachers and various other people who help to run school systems.

The political, as well as the educational, climate today is favourable to the spending of vast sums on what American educators, with direct encouragement from Washington, are calling educational research and development on a nation-wide scale. Even the people responsible for the ambitious planning are concerned about the extent to which the results of this research will actually change teaching-learning procedures. The researchers are being urged to involve in their studies as many school people as possible, and to follow up initial studies with evaluation surveys at various later stages—something which has not been a conspicuous feature of doctoral and post-doctoral research in education. The fact remains, however, that until the university people who are responsible for the professional preparation of teachers themselves become identified with this research activity, at least to the extent of interpreting its most significant elements to teachers-in-training and to practising teachers, implementation of research findings will continue to be a tiny fraction of the total activity.

One example of the general situation I have described may be found in the printed proceedings of two conferences on "Productive Thinking in Education" held in 1961 and 1963 under the joint sponsorship of the National Education Association and the Carnegie Corporation of New York. At the second of these meetings, C. W. Taylor called for a large "educational engineering" effort to "build a bridge between research and practice," an effort, he said, "that is largely non-existent in education today."[1] I shall not be arguing here for yet another hierarchy in the

[1]M. J. Aschner and C. E. Bish (eds.), *Productive Thinking in Education* (New York: National Education Association, 1965), p. 246.

school system like Taylor's "educational engineers," but rather for a clarification of our thinking on the main issues in the teaching-learning field, so that teachers and teacher educators will at least know what the problems are, and how far from reliable solutions everyone, including the researchers, remains.

The need for this clarification is illustrated by the ambiguous title of the two NEA conferences. The term "productive" thinking was used to denote ideas associated with both "creative thinking" and "problem solving."[2] Participants at the conference soon disagreed about the precise meanings of *productive* and *creative.* Some preferred *divergent* for people who apparently are thinking for themselves but not turning out something concrete, as an artist or craftsman does, or who are not producing a new idea as a creative thinker presumably does.[3] What the NEA inquiry was actually concerned about, of course, is what educators have always asked themselves: How can we teach people to use what they learn in school (or from books, people, etc.) in everyday living, working, behaving, deciding? That is, *how can we teach them to think for themselves, to acquire the power of independent thought?* The question could be put in another way by a school examiner: *By what evidence shall I be able to select the independent thinkers, the people who have acquired some measure of intellectual excellence?*

Sharing the view of Charles Morgan — "Only a fool thinks of himself as a Modern with a capital M. No one is ever at the head of Time's procession."[4] I propose to initiate a discussion of these and related matters with a backward glance at some of the seminal thinkers in the history of education, in the hope that their insights, interpreted in current terms, will serve to stimulate our own.

II. From Plato to Dewey

Plato and Aristotle both thought it was important to master an extensive body of information about man and his world, but at the same time to acquire intellectual skill in the use or application of this knowledge. *Use* did not mean vocational aptitude in the sense of earning one's living, but rather an ability to make the wise judgments required of a political leader, a senior civil servant, or a member of a respected profession. Plato thought higher mathematics and dialectical reasoning particularly valuable in developing this intellectual skill; indeed, he had a rather mystical view of the process by which a philosopher King would achieve wisdom in practical affairs; namely,

> . . . through discourse of reason and apart from all perceptions of sense to find his way to the very essence of each thing; [so that he] does not desist

[2] *Ibid.,* p. 9.

[3] *Ibid.,* pp. 159f., 274, 295, *et passim.*

[4] Charles Morgan, *The Judge's Story* (London: Macmillan, 1958), p. 37.

> till he apprehends by thought itself the nature of the good in itself [and] arrives at the limit of the intelligible.[5]

Aristotle and his scholastic followers placed more reliance on a thorough grasp of well-organized knowledge in textbook form, and on special training in logical methods of argument. Throughout the middle ages the appropriate examination for determining success or failure was the oral defence of a scholarly thesis, using the approved logical steps and drawing upon the acknowledged authorities. Few questioned the process of education or the system of evaluation, because elitism went generally unchallenged, and there were always enough trained intellectuals around to fill top posts in government, in teaching, and in the church.

It remained for Comenius, over three hundred years ago, to make the first serious attempt to extend schooling to the many rather than to the few, and at the same time to equip them to cope with the additional challenge of his day, posed by what we would call an explosion of scientific knowledge. This Protestant churchman and teacher, member of a persecuted and dispersed sect, clarified the problem in his *Great Didactic* in words that have a contemporary ring:

> . . . do not imagine that we demand an exact or thorough knowledge of all the arts and sciences from all men . . . It is the principles, the causes, and the uses of all the most important things in existence that we wish all men to learn . . . For we must take strong and vigorous measures that no man, in his journey through life, may encounter anything so unknown to him that he cannot pass a sound judgment upon it and turn it to its proper use without serious error.[6]

His practical solution for the problem also strikes a familiar note. He decided he must simplify the reading matter used in schools, try to write textbooks graded in difficulty, and, most important of all, train teachers to relate unfamiliar words and concepts to actual experiences of the pupils conjured up by pictures. Nearly two hundred years later, relieved of the necessity of teaching Latin to children, Pestalozzi revolutionized the teaching of subjects like arithmetic, geography, and nature study by using direct, concrete experiences, wherever possible, to give meaning to a definition or to a system of categorizing ideas. He also developed the technique of the object lesson. However, as happens so often in the history of education, teachers after Pestallozzi practised and extended the technique, but did very little thinking about and experimentation with the theories behind the technique.

Herbart's contribution to a science of teaching was an important advance on Pestalozzi's work, in that he regarded cognition as the basic psychological activity which must be understood if instructional techniques are to be effective. He defined the act of thinking as apperception —

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[5]Robert Ulich (ed.), *Three Thousand Years of Educational Wisdom* (Harvard University Press, 1965), p. 57.

[6]W. M. Keatinge, *Comenius, Johann Amos: The Great Didactic* (London: A. and C. Black, 1907), p. 70.

grasping with the mind — and tried to show how teachers can facilitate the activity by deliberately increasing and enriching idea clusters — connected facts, impressions, ideas — in the learner's consciousness. These idea clusters later seem to be forgotten; they have merely gone into the subconscious until they are recalled for further use. It is the teacher (and eventually the learner for himself) who increases the possibilities for useful recall by constantly establishing links between old and new experiences, vicarious as well as direct. Herbart's analysis, introspective and speculative as it may be, continues to be seminal in current studies of cognition.[7] Jerome Bruner, for example, who emphasizes the value of intuition or educated guessing in teaching, has come no closer than Herbart did to explaining why a scientist's shrewd hunch, or some medical man's brilliant diagnosis, so often emerges from a well-stocked mind, provided the assimilated knowledge has been organized around basic understandings, and is therefore what Bruner would call structured.

Every student of educational history knows how an exclusive interest in Herbart's techniques for lesson-presentation (the four or five formal steps), and an over-emphasis on the teacher's role as a subject scholar and a purveyor of information, have for many people in education killed the living germ of his thought. Much of John Dewey's early work, for instance, was motivated by his reaction to the excesses of the Herbartians between 1880 and 1920. He adapted Froebel's principle of creative self-expression—never successfully demonstrated by him above kindergarten level—to the work of elementary and junior high schools; and with his laboratory school at Chicago and his voluminous writings led a possibly too successful attack on the subject-centred and teacher-dominated classroom. Whatever may be said about the excesses of progressive education, Dewey established at least one truth about pupil learning: *thinking, as distinct from fact assimilation and verbalization, is most likely to occur when the learner makes over, or otherwise uses, knowledge and/or skill in the course of his further learning.*[8]

III. Study and Research in the Past Forty-five Years

Between 1920 and 1966, inquiries into our problem have been roughly of two kinds: first, curriculum analysis and reorganization in the Herbartian tradition; and second, experimental research on learning theory with the object of identifying the intellectual skill which Dewey called reconstruction of experience. An example of the first is the book *Realms of Meaning* by P. H. Phenix; and of the second, the research already re-

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[7]See H. S. Broudy's article "Historic Exemplars of Teaching Method," in N. L. Gage (ed.), *Handbook of Research on Teaching* (Chicago: Rand, McNally, 1963), pp. 36-38.

[8]John Dewey, *Democracy and Education* (New York: MacMillan, paperback edition, 1961), p. 776.

ferred to in reports of the NEA conferences of 1961 and 1963, with the numerous studies they have since spawned.

Phenix postulates the search for meaning as the human motive for learning; he recommends teaching methods which accent inquiry, arouse imagination, and promote growth in meaning as the mind of the learner "actively assimilates and recreates the materials of instruction;" and points to "representative ideas"—that is, seminal and key ideas—as the subject content worthy of emphasis by the school.[9] But nowhere in his book does he help the classroom teacher with the main problem of distinguishing the parroting of knowledge from the ability to use it, or think with it, by supplying an illustration of specific content, taught in a certain way, with the test or examination used to measure the effectiveness of the teaching. And, of course, Phenix is far from being alone in that omission.

The omission is one of the reasons why current curriculum reform in Canada, especially in the humanities, remains in the constructive straitjacket imposed by traditional concepts of a liberal education. The tradition is as old as Plato, but the accents in which it is expressed are still those of Cardinal Newman when he said a century ago that a liberal education is "simply cultivation of the intellect as such, and its object is nothing more than intellectual excellence. . . . [which has the power] to open the mind, to correct it, to refine it, to enable it to know, and to digest, master, rule, and use its knowledge."[10] The difficulty is this: the knowledge referred to is that of the scholar in each academic discipline; his ability to use his knowledge in any vocational sense is taken for granted, and there is the big assumption that the intellectual capacity he has presumably displayed in school and university examinations will transfer to thinking effectively in other areas of life.

Such academic optimism does not take us very far toward a satisfactory description of *thinking* as an aim of teaching and learning in the second half of this century. Fifty years ago, Dewey pointed up the issue clearly when he observed that the error made by Aristotle and many scholastics —I would add Newman—was not in their depreciation of mere technical skill and an accumulation of facts, but in their insistence upon a separation of "significant knowledge" from "practical achievement," and in their conclusion that "the education which is fit for the masses must be a useful or practical education in a sense which opposes useful and practical to nurture of appreciation and liberation of thought."[11]

Many of the cognitive studies which followed the conferences on "productive thinking" seem to me to present, in the main, a striking contrast

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[9]P. H. Phenix, *Realms of Meaning* (McGraw-Hill, 1964), pp. 344, 332f., 322f., 10, 12, *et passim.*

[10]John Henry (Cardinal) Newman, *The Idea of a University* (London: Longmans, Green, 1912), pp. 121, 122.

[11]Dewey, *op. cit.*, pp. 256-7.

between the relative precision of the research instruments employed and the ambiguity of the language used to describe what the instruments presume to measure. Educators had been impressed for too long by scores on IQ tests, because they correlated well with measures of scholastic achievement. What everyone was failing to measure is described in recent studies as "ideational fluency," "divergent thinking," "adaptive flexibility," "originality," "creativity," to name only a few of the expressions used.[12] But the tests devised to isolate and measure this mystery element were usually the same as those which claimed to measure whatever *diverged* from standard features of IQ tests. From that point it was only a step to the conclusion that *divergence* is the hallmark of creativity and originality, and the very essence of what we have been looking for—that is, the antithesis of rote learning and inert ideas. This may explain the tautologies which have crept into the descriptive terms used in many cognition studies, particularly in North America. In a paper which will be cited again, Getzels refers to the superfluous adjective in such expressions as "creative thinking," "innovative problem-solving," "productive thinking," which attempt to describe any thinking procedure involving novelty "in however modest a degree."[13]

More hopeful and useful is the research supporting the conclusion that Guilford has reached: that creativity is not a single ability, that it is not confined to the gifted few, and that a high IQ is unessential for creative performance in non-verbal areas;[14] likewise for Hallman's thesis, that creative potentialities exist in all normal children and that creativity can be taught.[15] This, however, is not to say that test questions on children's opinions which elicit evidence of disagreement with parental or community norms, or of a critical or sceptical attitude, or of a superficial nonconformity, are clear indications of their creative capacity and their ability to think. To maintain this would be to mistake the shadow for the substance in somewhat the same way as Dewey's more literal-minded followers identified the physical externals of pupil-planned projects with activity learning.

A salutary corrective to these pseudo-scientific studies of creativity can be found in the writings of certain English educators who employ a common-sense approach that may dispel some of our confusion. For this purpose I have chosen two men, one an experimental psychologist,[16] and

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[12]W. F. White and R. E. Williams, "Identification of Creativity and the Criterion Problem," *Journal of Secondary Education* 40:6, Oct. 1965, pp. 275-281.

[13]J. W. Getzels, "Creative Thinking, Problem-solving, and Instruction," NSSE *63rd Yearbook, Theories of Learning and Instruction* (University of Chicago Press, 1964), p. 242.

[14]J. P. Guilford, "Creativity in the Secondary School," *Education Digest,* Oct. 1965, or *The High School Journal,* May 1965, pp. 451-8.

[15]R. J. Hallman, "Principles of Creative Teaching," *Educational Theory* 15:4, Oct. 1965, pp. 305-16.

[16]Suggested by J. G. Woodsworth's paper, "Some Theoretical Bases for a Psychology of Instruction," *Canadian Education and Research Digest* 5:1, March 1965, pp. 14-26..

the other an analytical philosopher, both of whom look on thinking as a skill to be learned, particularly in school.

In 1948 Sir Frederick Bartlett of the University of Cambridge gave a series of popular lecture demonstrations on the workings of the mind which were published three years later.[17] The theories expounded then were more fully stated and illustrated in a book published in 1958.[18] Both books start from the position that the way men think now is the result of a very long biological development; that thinking is "a complex and high-level kind of skill" with its acknowledged experts (as in other forms of human skill); and that "much of the expertness, though never, perhaps, all of it, has to be acquired by well-informed practice."[19] After performing (with his lecture audience, not with animals) a number of ingenious experiments, Bartlett arrived at this theoretical description of thinking which he also used in his later book:

> For no doubt it will have been noticed that in all our discussions and experiments, whenever the mind comes into operation, most unmistakably it is by filling up gaps that are left in the evidence that has been gained by direct observation.[20]

This view of thinking as gap-filling seems obvious when Bartlett is considering what he calls closed-system thinking, and using experimental designs which require one to find, by interpolation or extrapolation, the unknown term in a series of items that form a recognizable pattern. However, he is at pains to show that the steps by which one attains skill in gap-filling grow out of many prior experiences and contributory skills, such as observing, noting connecting relationships, remembering (which itself involves an organization of experience); but also insight (or intuition) and a kind of wisdom which he thinks complement one another and are the result, not of a lucky guess or hunch, but rather of hard work and an ability to detect clues and to see integrating rules or principles.[21]

Bartlett's experiments and rationalizations lead him to postulate two categories of thinking: the closed-system kind already mentioned; and "adventurous thinking," which is made up of three varieties: (a) the *experimental thinking* of the scientist where gap-filling is subject to empirical controls;[22] (b) the *everyday thinking* of people who, without trying to be logical or scientific, make decisions or form opinions, usually by trying to fill up gaps in the information previously available to them;[23] and (c) the *artist's thinking,* which Bartlett regards as a process distinct

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[17]F. C. Barlett, *The Mind at Work and Play* (Allen and Unwin, 1951).

[18]F. C. Bartlett, *Thinking—An Experimental and Social Study* (Allen and Unwin, 1958).

[19]Bartlett, 1958, *op. cit.*, p. 11.

[20]Bartlett, 1951, *op. cit.*, p. 121.

[21]*Ibid.*, pp. 114-5, 123-4, 128, 136-41, *et passim.*

[22]Bartlett, 1958, *op. cit.*, pp. 160-63.

[23]*Ibid.*, p. 164f.

from the others. He says that the artist adds to successive stages in the mastery of his craft, involving both intellect and technique, a drive towards achieving a standard of work which he conceptualizes but has not yet reached.[24]

What I find reassuring about Bartlett's work is his success in finding, and his persistence in looking for, empirical support of the common sense view that thinking has both creative and non-creative aspects; and that *creative* normally implies making something that bears marks of individuality, of uniqueness. D. E. Berlyne, now of the Univerity of Toronto, supports Bartlett's position. "To be creative," he says, "a product of a thought process must be initially improbable and hence unpredictable." He stresses the importance of examining more thoroughly than has yet been done the cognition behaviour of ordinary men, those who do "reproductive thinking," as well as the thinking of the rare genius.[25] A good place to begin, it would seem, is with those who make a profession of clarifying difficult concepts in teaching and learning. Here the Oxford philosopher, Gilbert Ryle, is an acknowledged leader.

Ryle refuses to postulate any metaphysical theory of mind, any "ghost in the machine." He regards as a muddying of the waters of understanding the employment of descriptive terms like inferring, judging, concluding, rational faculty, flash of insight. His concern is with "intellectual operations." "What distinguishes sensible from silly operations," he remarks, "is not their parentage but their procedure . . . in intellectual as in practical performance." It is not important if we fail to give "a hard-edged definition of 'intellect' and 'thought'," since such analytical descriptions are as likely to be wrong today as were the terms used by the old faculty psychology. Instead, he suggests the simple term *schooling* for all intellectual powers when viewed in the context of performance, commenting that they are "developed by set lessons and tested by set examinations." In short, Ryle defines the intellectual as the well-schooled man.[26]

Unlike many educational theorists, Ryle takes some account of the work that school teachers actually do. He accepts, for instance, the need for drill-type lessons, a kind of conditioning (as in learning how to pronounce words in a foreign tongue); but he distinguishes these from what he calls training lessons, which build up intelligent capacities and involve "the stimulation by criticism and example of the pupil's own judgment."[27] He does not despise the traditional assign-learn-recite type of lesson, because he sees the result as more than meaningless repetition. Note this passage, excerpted from several pages of close reasoning and illustration:

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[24]*Ibid.*, pp. 187-195.

[25]D. E. Berlyne, *Structure and Direction in Thinking* (Wiley, 1965), pp. 317-320.

[26]Gilbert Ryle, *The Concept of Mind* (Hutchinson, 1949, Barnes and Noble, 1963), pp. 27, 32, 49, 283-4, 299-300.

[27]*Ibid.*, pp. 42-3.

> Didactic discourse is the vehicle for the transmission of knowledge . . . Didactic talk . . . is meant to better the mind of the recipient. . . . that is, to improve its equipment or strengthen its powers. . . . Teaching is teaching someone to do, which includes to say, things. . . . Now, didactic discourse, like other sorts of lessons, but unlike most of the other sorts of talk, is intended to be remembered, imitated, and rehearsed by the recipient. . . . Learning the imparted lesson is becoming competent, not merely or principally to parrot it, but to do a systematic variety of other things. . . . We learn from these lessons how to say and do things, most of which are not echoes of the words of the lessons.[28]

Ryle also gives examples of intellectual performance which is nonverbal; for instance, playing chess, completing a jigsaw puzzle, untangling wool.[29] His illustrative list of famous intellectuals would include geometricians, physicists, and explorers, as well as historians and theologians. But, whether engaged in the contemplative kind of thinking employed in learning geometry, or in the executive or contructive kind required to do arithmetic and algebra,[30] or in the investigative kind, as when a housewife tries to decide whether a carpet will fit a floor area,[31] the thinker, Ryle seems to insist, must be able to *state* the results of his theorizing. *Saying something*—aloud or in one's head, in words or in other symbols —is "thinking the thought;" moreover, there are levels of difficulty in both the theory-making and the exposition of it, the highest level being found by him in institutions of higher learning:

> Intellectual work has a cultural primacy, since it is the work of those who have received and can give a higher education, education, namely, by didactic discourse. It is what constitutes, or is a *sine qua non* of, culture.[32]

Thus the logic of his argument brings Ryle to the very comforting conclusion, for school people, that we learn to think by the didactic discourse of school work; that the intellectuals are the best products of the schools and universities; and that school and university examinations separate the non-thinkers from the mediocre thinkers, and the latter from the good and the superior.

But surely this is a question-begging conclusion. It makes the assumption that teachers' tests are measures of "intellectual work," and that the assessing process in schools and universities is reliable. Useful as Ryle's book is in clarifying the issues, we cannot stop where he stops. The weakness of his argument is that of nearly all analytical philosophers. They reason inside a web of their own verbal definitions. This criticism has been well put by Wilfred Cantwell Smith, in the context of theology and religion rather than education:

> . . . they have erred, we feel, in working on a foundation principle that words and sentences mean something. In fact, it is only persons who mean some-

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[28] *Ibid.*, pp. 209, 310, 312.
[29] *Ibid.*, pp. 282-3.
[30] *Ibid.*, pp. 305-6.
[31] *Ibid.*, p. 288.
[32] *Ibid.*, pp. 296, 314.

> thing; language is their instrument. Though convenient enough for certain everyday purposes, it is ultimately wrong to suppose that a statement can in itself be true or false. It is what the statement means that is true or false. This apparently innocent point becomes enormously important when the same statement means different things to different persons.[33]

In brief, what Ryle takes for granted is the whole reason for our present discontents. We are no more satisfied than Whitehead was fifty years ago with the large-scale examination for school graduation, college entrance, or the winning of a university degree.[34] School teachers know —as do university professors, also, if they take the problem seriously— that we have not succeeded in our testing, and only occasionally in our teaching, in distinguishing reliably between (a) a mindless regurgitation of facts, (b) a thoughtful interpretation of the same facts, and (c) an ability to use and apply learned material, or, again in Whitehead's words, the mastery of the art of the utilization of knowledge. And so we turn, still with hope, to another group of cognition studies which appear to be more conscious of the teaching task—of what the teacher should be doing—than any of those examined so far.

I am referring here to the work of Jerome Bruner of Harvard University which in its beginning was directly influenced by the inquiries of Max Wertheimer, who focussed attention on ways of developing what he called structural insight, structural mastery, and meaningful learning as opposed to the "structurally blind" methods of learning by drill, by external conditioning, by memorizing, or by trial and error.[35] For over ten years now, Bruner and his associates have been developing this hypothesis. An early study of thinking directed special attention to the process of categorizing, and reached this tentative conclusion:

> Any cognitive operation involving grouping and re-grouping of materials into equivalence classes is rendered more comprehensive once one has a better grasp of the nature of categorizing. Judgment, memory, problem-solving, inventive thinking, and aesthetics—plus conventional areas of perception and concept formation—all involve such operations.[36]

Thus, as one commentator has observed, the teaching-learning activity becomes one of selecting, presenting, and learning facts in a context of connections which will enable the pupil to find, predict, or regenerate other details.[37] The language here has obvious Herbartian overtones.

At the present time Bruner seems to see the school's working solution for the knowledge explosion of today in the cultivation of "the art of

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[33]W. C. Smith, *The Meaning and End of Religion* (Macmillan 1962, Mentor Books 1964), pp. 164-5.

[34]A. N. Whitehead, *The Aims of Education and Other Essays* (Macmillan, 1929, Mentor Books, 1958), pp. 16, 17.

[35]Max Wertheimer, *Productive Thinking* (Harper and Row, 1959), pp. 2-3.

[36]J. S. Bruner, J. J. Goodnow, G. A. Austin, *A Study of Thinking* (Wiley 1956/61), pp. 2-3.

[37]M. J. Adler, "Some Educational Implications of the Theories of Jean Piaget and J. S. Bruner," *Canadian Education and Research Digest* 5:1, March 1965, pp. 5-13.

connecting things that are akin, connecting them into the structures that give them significance."[38] He thinks it possible to identify the structure of the various school subjects in sufficient detail and clarity to enable teachers to teach basic principles and understandings successfully, if a beginning is made early (for instance, Euclidian geometry and physics in the primary grades) with a *spiral* development of the curriculum instead of a logical. Basic notions in such fields as geometry and physics "are perfectly accessible to children of seven to ten years of age, provided that they are divorced from their mathematical expression and studied through materials that the child can handle himself." The teaching and learning of these basic notions, or structures, in important subject areas, and not the mastery of facts and techniques, insists Bruner, "is at the centre of the classic problem of transfer." He sees the jump from learning to thinking as a consequence of intuition, the educated guess, even more than of any analytic procedure; but points out that "there are some experiments on learning that indicate the importance of a high degree of mastery of materials in order to operate effectively with them intuitively."[39]

In a recently published book, Bruner comes close to recommending a specific procedure for the improvement of instruction. After noting that we have plenty of maxims about teaching and learning but not the necessary theory of instruction to guide pedagogy, he insists that the development of such a theory must become the principal task of educational psychology, and concern itself with "how to arrange environments to optimize learning according to various criteria—to optimize transfer or retrievability of information, for example." He then suggests that curriculum building should be done (and be constantly evaluated and revised) by teams composed of the scholar, the curriculum maker, the teacher, and the evaluator, who would design assignments and exercises "in conjecture, in ways of inquiry, in problem finding" in such a way as to overcome tendencies to passive rather than active learning by pupils.[40]

There is an interesting unanimity among research psychologists in education at the present time on the need for more study of the teaching task, and presumably less on abstract learning theory. Getzels, for example, reached the conclusion in 1964 that (a) "no single set of principles of instruction for creative thinking and problem-solving can be drawn from present theory and research;" and (b) that it might be advisable for both theorists and researchers to concentrate attention on the practice of the teacher and on the teaching-learning-thinking process as

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[38]J. S. Bruner, "Liberal Education for All Youth," *Education Digest* 31:6, pp. 5-8, or *The Science Teacher*, November 1965, pp. 19-21.

[39]J. S. Bruner, *The Process of Education* (Vintage Books, 1960, pp. 3, 43, 12, 57, *et passim.*

[40]J. S. Bruner, *Toward a Theory of Instruction* (Harvard University Press, 1966), pp. 31, 37-8, 159, 164..

it develops in classrooms.[41] Gage similarly argues that "theories of learning will become more useful in education when they are transferred into theories of teaching."[42] So it is not surprising that the most promising (to the teacher) kind of research on teaching and learning today is taking the form of analyses of what actually takes place when teachers teach.[43]

IV. An Instructional Strategy

Meanwhile, school must be kept and pupils must be taught. The theme of this paper, expressed in the opening paragraph, has been that teacher-educators have the responsibility of bridging *the gap* between research theory and school practice. This can only be done if they are constantly involved in revising curricula, teaching methods, and measuring instruments now employed in the schools and therefore about to be used, and (hopefully) improved, by new teachers. If the findings of theoretical speculation and of educational research are to be applied to the improvement of teaching more quickly and more widely than in the past, an essential operating factor will be an attitude favourable to innovation in our faculties and colleges of education which takes the form, among others, of a continuing dialogue and a working partnership between the so-called foundations lecturers and the subject-methods lecturers.

This paper has tried to show that there is a substantial body of knowledge and insight on which the teacher can draw, supported by experience and logic and, at times, by empirical study; and that there is a surprising amount of agreement on the main objectives of teaching, if not always on the definition of these objectives for purposes of measurement and evaluation. While we wait for guidance from the research on the teaching task that is now under way, it should be possible to formulate tentative conclusions from our survey that may be helpful to those actually engaged in curriculum making and in the improvement of day-to-day instruction.

The following statements are an attempt to summarize the conclusions of philosophers in the past and of research studies in recent years as I have presumed to select them for the light they shed upon the school's main task: *teaching people to think.*

1. The instructional goal of the school is the development of mature persons capable of thinking for themselves and of continued self-teaching. The goal is real but always out of reach, being simply, but profoundly, *wisdom:* the ability to make the right decision in personal and social affairs.

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[41]Getzels, *op. cit.*, pp. 265, 266-7.

[42]N. L. Gage, "Theories of Teaching," *NSSE 63rd Yearbook, Theories of Learning and Instruction* (University of Chicago Press, 1964), p. 284.

[43]See B. J. Biddle and W. J. Ellena (eds.), *Contemporary Research on Teacher Effectiveness* (Holt, Rinehart, Winston, 1964).

2. To acquire a measure of wisdom in this sense, one needs both knowledge and intellectual skill in the utilization of knowledge. The acquisition of knowledge and intellectual power is one process, the process of thinking.

Figure A

A Paradigm of Thinking—A process of schooling which involves the acquisition of knowledge and skill in one or more of three areas

Levels	I *Saying* Communicating in words—the humanities curriculum	II *Doing* Executing, planning, or problem-solving as in mathematics and science	III *Making* Producing something, as in arts and crafts, creative writing, musical composition, applied science and technology
Level 1: Grades 3-4	Basic skills of speaking, reading, writing —memory training— reproduction of simple stories	Basic skills of counting, noting differences in size and quantity—learning basic concepts with concrete materials	Manipulative skills —free expression with clay, paint, and other materials; also in speech, dance, etc.
Level 2: Grades 6-7	Reading for main ideas and details— vocabulary building —recall of facts by categorization—class recitation with individual interpretation and questions	Solving problems by known or taught procedures, but with encouragement of intelligent guessing	Making or doing things to specifications—recognizing degrees of excellence in workmanship or design—more free expression, but controlled by plan or purpose
Level 3: Grades 9-10	Further development of reading and communicating skills— practice in defining, explaining, arguing —distinguishing facts from opinions—more work on categorizing—simple paraphrasing	Extension of knowledge and skills— improvisation in the solution of problems —individual research encouraged	Further development of knowledge and skill in the appreciation and production of good work— practice in expressing such ideas verbally or symbolically
Level 4: Grades 12-13	Critical reading and formal reasoning— drawing inferences and forming judgments—applying or using facts or principles recalled from reading— paraphrasing, condensing, expanding complex selections of prose and poetry —panel discussions and debates	Practice in forming and testing hypotheses—solving problems by methods not taught	Translating an idea, a theme, a unified scheme into a finished piece of work
Level 5: Grades 15-16	Previous activities at higher levels of complexity and abstraction—evolving "original" ideas or theories—forming and defending principles	Ability (a) to express oneself in symbolic language, and (b) to innovate in planning or problem-solving	Ability to compose an original work at a high level of abstraction and/or to explain its meaning or use

3. The thinking process is creative in the sense of producing something new—that is, new to the thinker if not always to others; but it is also non-creative or reproductive. It has several manifestations rather than just one; every normal person can be taught, or teach himself, to think in one or more of these ways, and in greater or lesser degree.

4. The school, society's formal agency for training people to think, provides opportunities for practising intellectual operations by deciding what essential knowledge and skills must be acquired at various stages from primary to higher (or further) education.

5. What the classroom teacher needs most from theory and research is concrete help in the task (a) of distinguishing intellectual performance from conditioned responses, (b) of selecting materials and assignments which will develop intellectual power or the art of utilizing knowledge, and (c) of devising valid and reliable measurements of this intellectual power in action.

Figure A on page 27 is an attempt to illustrate these five statements. The reader will notice that three kinds of thinking are isolated for examination: saying, doing, and making; but of these the first is of course basic to the others, since, as Ryle has insisted, commmunication of thought is essential to human and social progress, and every act of thought should be capable of clear statement even if, as in higher mathematics, symbols other than words may be needed for complete accuracy. (Bruner has an interesting observation in support of Ryle's position.)[44] However, the inference of the tabulation in Figure A is that all three kinds of thinking should have parity of esteem in school work, and the scholastic success, including eligibility for free access to further education, should be judged by competency tests in one of the three areas only, not in all three or in the first two only. The reference here is not to basic literacy, which might be defined as competence at the second of the five levels shown in the first two areas of thinking. The five levels of development are intended to suggest the need for competency tests at the end of each period, with emphasis on the knowledge and associated intellectual skills mentioned. These tests or measurements would be (a) objective, or semi-objective when not standardized; and (b) subjective, in the sense that they would represent an informed teacher's appraisal, or estimate. The reader who has come this far needs no reminder that I regard the construction of satisfactory measures of intellectual power—the capacity to use knowledge and to learn by oneself—as the central problem confronting the school and teacher education today.

The curriculum details given in Figure A will seem wholly inadequate to teachers of individual subjects. While my choice of illustrations is tentative and lacking in authority, especially in the "doing" and "making" divisions, it will, I hope, serve to show (a) that there are important tasks

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[44]J. S. Bruner, 1966, *op. cit.*, p. 109.

to be done in teaching the humanities that are common to instruction in several subjects—that is, to teachers of history, geography, and any subject using reading matter and oral or written communication, as well as to teachers of reading, literature, and composition; and (b) that practical and technical subjects are of equal importance with the so-called cultural subjects in accomplishing the school's main task. Bloom, in reporting and commenting on research findings which support this view, points out that most measurements of school achievement are heavily weighted with the verbal ability component, presumably because so much of the learning process is mediated by words. He suggests that "other media of communication must be understood and utilized if the other talents and abilities students develop or possess are to be utilized," and cites two bits of research which indicate the possibility of developing instruments for selecting students gifted in art, music, creative writing, creative dramatics, creative dance, social leadership, and mechanical ability, as distinct from the abilities measured by general tests of intelligence. He then poses a shrewd question: "Can the learning process be different for the verbally able, the numerically able, and the spatially able?[45]

Certainly we would seem to be on secure ground in assuming that intellectual activity is everywhere the same. Whether working with words, clay, or pigments, with mathematical symbols, musical symbols, or construction materials, a student is thinking when he has to make a personal decision; to extract, or to apply, or to construct his own interpretation of a bit of life. He cannot do this, or is unlikely to do so with growing confidence and increasing success, unless he is schooled in the knowledge and skills basic to his particular discipline. The problem for the teacher is how, in Whitehead's words, "to make the pupil see the wood by means of the trees;"[46] that is, to decide how much detailed knowledge must be absorbed, how much skill and technique acquired, before structure can be grasped, insight sparked, invention stimulated, and innovating ideas initiated.

Just as crucial is the problem of devising tests and measurements of both achievement and potential which will reliably measure the former without stifling the latter. For example, how does the teacher of history measure the ability to distinguish fact from opinion, to make intelligent interpretations of historical events as distinct from literal reproductions of teacher and textbook statements, or simply to get the meaning from historical materials and to apply ideas from the past to an intelligent commentary upon current events? The answer is not likely to be found in detailed survey courses which "cover" the ancient world, the middle ages, or modern times, with their inevitable accompaniment of tests that are

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[45]B. S. Bloom, "Testing Cognitive Ability and Achievement" in N. L. Gage (ed.) *Handbook of Research on Teaching* (Chicago: Rand, McNally, 1963), pp. 384-5.

[46]A. N. Whitehead, *op. cit.*, p. 18..

heavily weighted on the side of accurate reproduction of facts. But, what is the alternative?

Helping teachers to answer such questions in their own subject areas and in a practical manner, but by methods which take some cognizance of educational philosophy, teaching-learning theory, and the insights offered by the history of education, is, it seems to me, the over-riding responsibility of staff members of faculties and colleges of education. In the past two hundred years such a task was brilliantly performed by Herbart and Dewey, with one unfortunate result in each case that their illustrative techniques continued to be used, and misused, while their theories were neglected, or rather, not re-interpreted in the current idiom. If more and more people are educated, as well as trained, to be teachers, and if the teacher educators are more successful than ever before in connecting theory with practice, history need not repeat itself.

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Britain and Japan:

Twins of Time and Tradition

Among the more remarkable social phenomena of the present day are two islands on either side of the world, Japan in the Pacific and Britain in the Atlantic. What is remarkable about these two islands is the way in which they resemble each other in their development, in their situation, in their historical and social movements. Each island lies adjacent to a large land mass, Japan next to Asia, and Britain off the coast of Europe. Japan's 143,000 square miles as against Britain's 96,000 square miles may appear to be unequal, but when one considers the habitable portions of these two lands this inequality disappears. Again, Japan's approximately 100,000,000 people are almost twice those in Britain, but the population density of the two islands is of the order of 630 for Japan as against 550 for Britain, two figures which underline the proximity of their population problems. Apart from the coal in Britain, each of these islands is devoid of any other large body of natural resources and is dependent not only upon the import of raw materials with which to undertake manufacture of any kind but upon the cultivation of its human resources to an almost unprecedented degree.. Although each island devotes a large portion of its land to agriculture, nevertheless they are both dependent upon other lands for food. Again, around Osaka, Japan has the Black Country counterpart of England, and has outlying islands which are not unlike those off the coast of Britain.

Historically the two lands have much in common. Whereas Britain drew the backbone of her culture from Europe beginning with Roman times, Japan drew hers from China. In each instance the peoples of the adjacent land mass exerted an influence upon the island cultures with the result that today there are identifiable strains reaching back into the past, and present in the habits and patterns of thought in the current populations. Each country has moved through periods of feudalism to industrialism, and each reveals today the results of similar forms and forces which time has imposed upon their respective societies. Thus one finds in Britain the landed classes with their hierarchy of status, and in Japan a comparable group with similar attitudes and interests. It is not without reason that Japan, when looking for a form of government, should draw upon the British constitution for the pattern to be followed

in its Diet. Although Britain was the home of the Industrial Revolution in the 17th and 18th centuries, Japan was not far behind in assuming Western technology following Perry's visit in 1853. Following this awakening, Japan moved rapidly enough to be able to reach the status of a world power in 1914 and again reveal her strength in 1939. Both World Wars found Japan and Britain in strong positions in their respective oceans. Today, though the United States has assumed the position of spokesman for the democracies, taking this position over from Britain, the United States nevertheless must look to Britain in her negotiations with Europe, and to Japan—if only indirectly—for her negotiations with Asia. Thus the two islands by virtue of their historic and geographic positions provide the necessary east-west balance for world diplomacy.

It is not without reason, too, that both Britain and Japan have in their days been imperialistic powers. Since each was forced to move out from confined shores to other lands for the resources they needed and the markets they required, they were perforce engaged in economic aggression to provide for their needs. With the passing of time, and the assumption of economic over military measures of acquisition, the two lands have developed along similar lines. The industrial character of the two peoples is similar in that both have engaged in ship-building, and in the production of cars, machinery, textiles. In each there is attention given to precision in work. "Made in Britain" has generally been associated with goods of the highest quality and workmanship. "Made in Japan" has only recently begun to take on this association, although today there is no question that Japanese standards of excellence are as good as any and better than most. The character of business within each country runs a similar pattern so far as general organization is concerned, for in both one finds on the one hand many small entrepreneurs and on the other large industrial combines.

Where two such societies are characterized by so many similarities in history, in geography, in development, in situation, and in population, it is interesting to perceive similarities in their educational systems. Perhaps the most outstanding similarity is to be found in the emphasis on selection. In Japan the examination plays a most important role in the selection of students from the kindergarten through the university. Although in Britain the examination does not play the same role until "eleven plus"—a measure which is being dropped in many parts of England—there is nonetheless the additional role played by the public school in selecting students for further education. This is not without its parallel in Japan in the practice of the private schools leading on to the private universities. More important than the examination itself, however, is the fact that this instrument is used to select the best students on an academic basis, and to move them through to the best positions of leadership in society. The public schools of Britain often selected and still do select students on the basis of the "old school tie." This process has, under modern pressures, been modified, although it will be some time before it entirely

disappears. Despite such differences as obtain in the two societies,, it is obvious that pressure of population, and the desire to provide a competent leadership are two factors operating to give each society a driving wedge into the future of the modern world. This has been obvious for some two centuries: both societies appear to have maintained their industrial position, if not entirely, at least partly because of this selectivity.

On the other hand, in both countries there is the desire to modify what may be called the traditional selective process by extending educational facilities to a larger section of the population. Britain's exploration of the usefulness of the Comprehensive School and Japan's consideration of a more broadly based school system attest this observation. Furthermore, popular pressure in both countries is aiming to remove at least some of the more restrictive aspects of the examination so long accepted as part of the selective process.

In still another respect one finds similarity. Whereas in Britain the prestige universities are Oxford and Cambridge, in Japan the same prestige attaches to the old Imperial Universities of the order of Tokyo and Kyoto. Too, the Red Brick Universities of England are matched in Japan by the private universities which serve somewhat similar roles in their respective societies, taking those students who in the normal course of application and of examination do not make it to the prestige institutions. By the same token, business and industry seek their candidates from the old line institutions first, and only go to the second when they can not fill out their employee lists with first line people. There is a tradition, too, in both countries, that positions in Government and in the military should so far as possible be recruited from the traditional strongholds of education—the old-line universities.

As is to be expected in these two highly industrialized societies the problem of general and technical education is important. In both, general education is considered to be important enough to provide for a rounding out of the vocational and technical education which plays so important a part in serving the needs of business and of industry. Britain, of course, has been able to benefit from the experience in technical education which she found in practices on the continent, whereas Japan, though needing this kind of education somewhat later in her history, has nevertheless had to depend a good deal more upon her own resources than what she could find on the outside. Since that early period, Japan has embarked upon a program of development of her facilities for technical education: to this end she has appointed missions for overseas study, and convened conferences to which the knowledge and skills of the world could be brought for her examination. It is not by chance alone that Japan's technical and industrial capacity has mounted rapidly in the period since 1945; for instance, the phenomenal growth of the electrical and optical industries and of the growth of ship building, motor cars, and heavy machinery generally.

Interestingly enough, both Japan and Britain have been concerned with the behaviour patterns of people, as witness in Britain the emphasis upon character education, and in Japan a similar emphasis upon moral education. Although in Britain formal religion has contributed to the definition of moral education, in Japan Buddhism and Shintoism have not done so to the same extent—with the result that the educational process has had to give attention to this respect of the education of individuals. In part this concern may be attributed to the presence in both societies of an awareness of the stabilizing force of a universal ethic made all the more evident by the cross-current of world opinion to which seafaring nations are prone.

Britain and Japan posses two institutions which are fascinating counterparts of each other. The Japanese teahouse provides an atmosphere conducive to conversation amid surroundings which give each person present a feeling of being a member of the human family of minds interested in ideas. The British pub, though dispensing beer instead of tea, nevertheless serves a similar purpose in providing occasion for the exchange of ideas as well as darts. Along somewhat similar lines, though in another situation, the Japanese tea ceremony is not without its British counterpart in the tea hour, institutions which in both societies have become somewhat sancrosanct. These two institutions suggest a similarity of disposition to the consideration of ideas, and a somewhat more interesting suggestion as to the similarity obtaining in the area of formality. What may be considered to be "reserve" on the one hand, is seen to be "inscrutable" on the other.

It is usual to draw attention to the sharp contrasts found in Japan as between Eastern and Western modes of thought: to wit, eastern contemplation versus western consideration, eastern work versus western leisure, eastern art versus western action, and eastern global thinking versus western linear thought. It is not, however, without significance that one finds in Britain a difference between European and British modes of thought: witness what is found in the cast of thought as between Wales and England, or between Ireland and England. On the other hand, in both Japan and in Britain, there is a set of contrasts between the old and the new. In several respects these are similar. In both countries ancient pomp and ceremony play their distinctive roles, even to providing sharp contrasts with modern requirements. Though Kabuki Theatre may not belong to the same class as Shakespeare Theatre, the role each plays in its society is similar. In both, precedent governs tradition, and in both, too, performance is the measure of the man in the same context. These contrasts may be found in any society, but in Japan and in Britain they take on the significance of being sharpened by virtue of the 'insular' character of both nations. This insularity is not to be understood as implying 'provincialism' but is used rather in its more limited geographical sense. The fact that in these societies so many outside influences are constantly being brought to bear suggests that each

society sets up a countervailing force which tends to insure the continuity of its own special ethos. This appears to be the shape of the traditional movement in Japan today, and is reflected, too, in a similar movement in Britain. This holding to tradition represents in both societies a laudable desire to ensure the preservation of the individual against the onslaught of the weight of the masses, and more important, to ensure the proper balance of the individual's development as between the 'dehumanizing' force of science and the 'enhumanizing' influence of his past.

A curious similarity exists between Japanese and British pragmatism. Both peoples are given to working things out in practice, and to arriving at a theory only after a good body of evidence is in. This in part explains why the Japanese have been said to imitate so widely, when in actual fact what they have been doing is trying things out to see how they work—the creative Japanese idea follows. Thus, the introduction of the Junior High School to the Japanese school system waits upon its satisfactory working before assembling evidence pointing to formal adoption. In Britain, experimentation with various kinds of school organization continues. This disposition to try things out, then bring in legislation to cover practice, is to all intents and purposes, similar in both countries.

In so far as languages are concerned, it is a rather interesting phenomenon to find Kanji, Kana, and Katakana in Japan, whereas in Britain, English, Scotch, Irish, and Welsh play their part in communication. That both countries should possess several distinct tongues is not without significance if only to point to the character of the people and the history which lies back of this character. Without doubt the insistence on recognition of the individual and of his group and his culture plays a most important part in the life of each nation. There appears to be something in the character of both peoples which eschews the singular mode of communication and reflects the multiple streams to be found in the rivers of their emerging philosophies.

That two such island empires as Britain and Japan should be possessed of so much similarity in respect of their histories—quite apart from their geographies—their institutions, and social characteristics, raises some very interesting questions as regards the apparent differences between East and West. For one thing, it seems a reasonable inference, that given equivalent geographical positions and equivalent natural resources, peoples of both eastern and western hemispheres will tend to develop along somewhat similar lines. There may be some differences in particulars but the general lines of development will be similar. Furthermore, given two societies with somewhat comparable historical development, the institutions which emerge will reflect one another in one or more respects. Despite the fact that Britain's overseas trade and cultural activities undoubtedly influenced Japanese development, there are nevertheless too many indigenous institutions resembling one another too closely to explain away easily in this manner. Perhaps the most significant inference is that the shib-

boleth of 'never the twain shall meet' can find no ready acceptance in the light of these British and Japanese similarities. For education the import is great. Human beings, wherever they live, are the creators of both heredity and environment, and the institutions they devise to foster their continuance are affected by the same factors. It would appear in the context of British and Japanese experience that tradition is to society what heredity is to the individual, and that environment affects societies as it does individuals.

Canada has a very special interest in Britain and Japan, a special interest which derives from the social, economic and political influences which both countries have exerted upon Canada and which they continue to exercise in one form or another. And while it is true that Britain's social, economic and political influences have been by far the greater over a longer period of time, Japan's emergence as an industrial nation in the Pacific—in contrast with Britain's considerably earlier emergence in the Atlantic—in need of vast amounts of natural resources for her industrial machine is bringing about a change in the relative position of Britain and Japan vis-a-vis Canada.

This change is indicated by the very significant increase in trade between Canada and Japan, and by the equally significant phenomenon of Canadian import of Japanese skills and technical knowledge in manufacturing, mining and finance. Canada's traditional reliance upon Britain and Europe for people with training and skills has now been extended in a measure to Japan, and recent changes in Canadian immigration laws will facilitate such immigration. All this is, of course, to the benefit of Canada.

Though many reasons may be educed for Canada's lesser educational productivity relevant to Britain and Japan—even taking into account population differences—two reasons appear to be particularly tenable. First, both the public and private educational systems of Britain and Japan have a national focus which, though balanced by provisions for local controls, excludes the development of a too limiting provincialism, and provides for dynamic directives to students and studies alike. Second, in both Britain and Japan the commercial and industrial communities cooperate with schools, colleges and universities to an extent unknown in Canada. A third reason applies to Japan in particular, and that is the early recognition that educational planning and research were absolutely essential to a proper educational development. If Canada is to be educationally productive, then certainly there must be a better provision for a national focus, such as the provinces giving up some of their precious educational sovereignities, and there must be much better cooperation between the educational and industrial communities, not only in the matter of programs and products, but also in the realms of research.

From the educational point of view, Canada's motto "From Sea to Sea" means not only from the Atlantic to the Pacific, but from Britain

to Japan as well. In the first instance, the distance is measured in miles; in the second in centuries. So far as these twins of time are concerned, Canada may continue to depend upon others for assistance with its professional and technical skills, and swing like a pendulum between East and West. On the other hand, Canada can attempt to achieve educational maturity by devoting as much attention to its human resources as it has in the past to its natural resources. Britain and Japan on either side of Canada have provided Canadians with challenging examples.

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Ideology and Educational Policy

The increasing distrust of vaguely expressed political and social ideals that is perhaps best symbolized by the title of Daniel Bell's *The End of Ideology* has made it increasingly difficult to relate educational problems to societal problems with any degree of logical or scientific warrant. But is this distrust of political and social philosophy, this distrust of ideology, merely another ideological proclamation? What accounts for our hesitancy to venture into thinking about the educational development of persons who are capable of alleviating or resolving contemporary societal difficulties? Is this hesitancy due to the indirect support of education resting upon suppressed premises, i.e., upon an ideology?

From certain *facts* such as another nation's technological accomplishments or an increased proportion of people attending or wanting to attend college there follow *no* schooling recommendations at all without additional premises because it is not clear that or why nations should compete technologically nor is it at all clear as to what is the best preparation for college. Although there is a widespread opinion that there was nothing philosophical about Sputnik I and subsequent policy making in education, it is characteristic of ideologies, by definition, to fail to recognize their own value commitments as such. On the contrary, it makes as much sense to say that the fundamental philosophical event of the century was Sputnik I, for never before had the problems of men, of how to live together, been thrown into such sharp focus. That a chunk of metal floating overhead could cause the widespread consternation, flurried activity, and apparent loss of perspective that have dominated the "innovations" in schooling practices in the last decade is no little cause for surprise, for what Sputnik I demonstrated beyond the power of words is the necessary and inescapable unity of the world and human life thereon.

It also established that the fundamental problem, educational and otherwise, is the alienation of people from each other. If one wishes to reflect upon the problem of the educational development of the kinds of persons that can resolve or alleviate present difficulties, he is confronted with formulating an educational program than can contribute to the reduction of alienation between men. The implications of Sputnik I would then fall into the non-cognitive dimensions of the schooling process, within the

moral aspects of educating. If this is so, there has been very little response thus far to an alleged crisis in education stemming from events on the international scene. If the problems are indeed non-cognitive, one does not quite know how to understand what has happened. No matter what foreign policy the nations may adopt to suit the exigencies of the more or less cold war, from that policy nothing is entailed for school policy. This is true in any case. It is particularly valid if the educational development of people should be directed to balance or ameliorate the existing state of affairs. If the general problem is how to live together, in other words, this problem can be approached in different sectors of experience in ways that may even be logically incompatible: foreign policy decisions concerning how to live together possess neither logical nor ideological entailment for school policy decisions respecting the modes of coexistence that might be promoted in schools. A raising of the phenomenon of public schooling into view will precede the discussion of one item illustrative of how policy might be considered if schooling were to respond to the moral problems raised into orbit with Sputnik I.

The phenomenon of public schooling consists of elementary, junior and senior high schools, community junior colleges, and tax-supported universities in Alabama and Alberta, Harlem and Highland Park, Toronto and Tanganyika, Peking and Buenos Aires, Moscow and Minnesota, and so on and so on, by definition of what free, public, universal, compulsory schooling is, regardless of certain factual considerations to the contrary. Schooling can exist as public only if it is free, compulsory, and universal. The basic criterion that any consideration of policy has to meet in order to be relevant to schools that are public is that it has to be equally applicable to all public schools, wherever, even where they have not yet been brought into being. Otherwise it lacks scope, comprehensiveness, and adequacy. It lacks applicability to public schools because its application changes them into something else. It lacks adequate consideration of the moral dimension of schooling because it overlooks respect for the possibilities of the children in the various places not taken into account, especially if the places are under- or over-privileged. This criterion (of applicability to all public schools) is not proclamation of a vague, humanitarian sentiment because it is precisely opposed to the humanitarianism that can degenerate to the "white man's burden" or "Yankee imperialism." It is not ideological because it is the *only* means available to assist in the derivation from the phenomenon of public schooling of that which may assist in preventing parochialism or provincialism, ideological bias or prejudice, ethnocentricism or cultural relativism. It is desirable to avoid these by transcending them because they constitute alienation and contribute to further alienation from other people. Public is public, arbitrary boundaries to the tax-bases of school financing notwithstanding.

From the view of what public schooling is, it appears that the preliminary step in the reduction of the alienation of men from each other is the establishment of a common schooling system: a common curricu-

lum on a world-wide basis. Any policy that could not be instituted universally contributes to alienation because it arrogates to some children that which is thereby denied to other children. This is almost but not quite a version of the Kantian categorical imperative to act such that all one's actions are capable of being legislated universally because it is not an imperative, an ought, at all. It merely indicates how one would recognize policy that showed partiality and privateness, that failed to recognize the responsibility involved in the publicness of schooling and in what schooling signifies. It is not an ought because it has not been said that schooling should "function" to alleviate contemporary problems. It is merely descriptive of what public schooling is and perhaps indicative of what the outlines of a response to Sputnik I might resemble were anyone to decide to take it seriously.

Prior to the existence of common schooling, mere attendance forces the child to live immorally in an unjust world. It lets and encourages him to arrogate to himself possibilities that are not accorded to other children. He must and ought to attend, yet for him his actions are not universalizable. He grows up immorally, alienated from others, and guilty.

Public schooling, moreover, exists perforce as mass schooling. Although this feature has been raised into prominence by the growth of population and the development of mass communication and mass transportation, that public schooling is compulsory and universal makes it inherently mass schooling. It occurs in the realm of anonymity. Teachers and pupils are anonymous. Anyone who is prepared can teach. Anyone can go to school. Schooling is average, everyday human existence, especially when it pretends explicitly to oppose the anonymity of everydayness through encouraging "individuality" through various well-known devices. Self-conscious attempts to achieve "individuality," in school as elsewhere, are express recognition that one is not individualized. In the assumption that people are different the basic alienation is to be found, for before they can be said to differ they have to be compared on some impersonal dimension or isolated "property." That people are either different or the same is not understandable. Each person is simply himself, nameable only by his proper name, e.g., "Bernice."

In individuation is a modification of the temporal structure of human being, if it is basically a matter of how one projects forward into his own possibilities, in his achieving a "self-constancy" through concrete tasks, then whatever is done in schooling cannot contribute to individuation directly because of what childhood and adolescence are in any society that has compulsory schooling. The existence of public schooling constitutes a *de facto* assertion that the child or youth cannot project into his concrete possibilities, that he cannot be himself, that he is not ready to choose his own possibilities, that he can choose his own future for himself only on condition that it includes schooling along the way: public schooling

is mass schooling perforce. It not only constitutes itself in the realm of anonymity but is the "instrument" of "society," i.e., of anonymous everydayness, for it is the deliberate attempt to perpetuate "society" in its averageness (so-called cultural transmission). Concern with general policy, finally, is concern with the mass aspects of schooling, with precisely the average dimensions of the everyday enterprise that is schooling by definition of what the phenomenon of *policy* is: that which stretches across all teachers and within which concrete, pedagogical decisions occur. There is no possibility of pulling up one's skirts, so to speak, through attempting to avoid the "mass" aspects of schooling at the level of general policy, for they are wedded to each other. The average everydayness of schooling is its facticity, its that-it-is, such that to try to avoid it is to avoid the existence of the public school itself. All departures from the mass aspects are departures from how public schooling constitutes itself and all have to fail when instituted because they have to become the "new" form of everydayness by being instituted.

An examination of one such "departure" will serve to illustrate how policy might be decided if one were to accept the facticity of the publicness of schooling as universal and compulsory education. One item will suffice to indicate a way to grapple with the relation of educational problems to societal problems, to indicate the kinds of policy decisions that could be made if one wished to promote the educational development of the kinds of persons who might be able to solve or alleviate the problems of the post-Sputnik world. "Ability grouping" will be discussed as paradigmatic of the "innovations" that have been widely advertised to "cure" whatever it was that ailed public schooling. The treatment will focus on the moral dimension of the problem.

Very often the decision to group or not to group is made on political or empirical grounds: to suit the majority or most powerful interest groups within a community or to increase the acquisition of knowledge as allegedly indicated by empirical studies. The latter can be discounted because the necessary information is not forthcoming. It is beyond the range of empirical research. An adequate study of the effects of various instructional groupings would require:

(1) Perfectly matched instructional groups, individual for individual and classroom interaction for classroom interaction. Two people who are perfectly matched on all the objectively attainable data including Rorschach and T.A.T. findings may not be matched at all on the subjective data. They would still have differing projects of being, differing having beens, differing temporal structures, or, in empirical language, differing motivations and experiential backgrounds, and face their own future in differing ways. They have differing home lives during experimentation and different people sit across the aisle from them during experimentation. They cannot be matched. To rest content with statistically matched groups or random sampling does two philosophically arbitrary things, the first of

which is to remain within very gross, abstract preconceptions of what it is that is examined in inquiry. The second is the postulation of a metaphysical thesis as soon as the findings are used for something other than the direction and redirection of further inquiry. When "empirical findings" are taken to represent the real, a very non-empirical system of natural law is postulated in the best rationalistic, realistic, metaphysical manner. The findings have to be presumed as embodying generalizable laws of human conduct that exist in the world as soon as existential, experiential decisions of policy are based on them. The scientific inquirer himself does not have to make this assumption that his findings are of general value or that they correspond to anything apart from his context and method of inquiry. He will not make it if he is cognizant of the limitations of his inquiry. He cannot make it without leaving the area of his specialization and entering the area of philosophy.

(2) Perfectly matched teachers. An adequate study would necessitate teaching all groups in an experiment the same way: same teaching style, same personality, same method, same classroom atmosphere and mood, same competence of the teacher in the subject matter, etc., so that all pupils in all classes within both heterogeneous and homogeneous groupings and within both experimental and control groups, including both "fast" and "slow" groups within "homogeneous" groups, are taught in the same way. They would have to be taught in the same way in the most minute of detail in order to insure the stability of the variable under inquiry and to make a common achievement test possible. If they were taught differently, or if any other of a multitude of variables were not held constant, the achievement test would not be a common test and there would be no way of making it common. There is absolutely no way of knowing whether one has all the variables under control or not, except by assertion. All this means is that there could be no way of knowing what happened within the experiment because there is no way of insuring that exactly the same thing happened except for the variable being examined, the grouping itself.

(3) Continuous study "habits." It would have to assume that all students in all groupings worked equally efficiently from day to day, always at the "same" rate according to their "capacities." This would seem to involve a very atypical teaching situation, if not a teaching utopia. To assume that day-to-day differences were statistically negligible or perfectly correlated but unresponsive to the groupings tested is rather bold, convenient, and question-begging. To ignore the issue is to retreat to a very gross level of experience.

(4) Equivalence of fact and values. Assuming the "empirical" information were at hand, it would still require a value judgment to go from the proposition, "Students, by and large, learn most when X-grouped," to the proposition, "Schools ought to have X-grouping." It would require a great many other considerations as well. That schools are a place for learning

is still an open question despite the declaration of some ideologies to the contrary. What "learning" means is still an open question because it presupposes an idea of what knowledge is. What "knowledge" is is still an open question despite the declarations of ideologies to the contrary, because current arguments for "revelation" and "intuition" make as much sense and have as much appeal and exert as strong an influence among philosophers, among first-rate philosophers, as various forms of, say, positivism. Besides suggesting that experimentation of instructional groupings could not be carried out unless a *decision* were made concerning the nature of knowledge, which might mean that any findings were limited to groupings within the conception of knowledge that was accepted by commitment, the crucial issue here is that even if it were accepted that the implication of Sputnik I (and similar events) for schooling is the maximal diffusion of knowledge, the second proposition does not follow from the first. One has to know which groupings promote which kinds of learnings, which students learn more, how much more of which kinds of learnings are learned by whom over the entire span of schooling, and if sufficiently more of some kinds of learnings is enough to warrant priority over other kinds of learnings and other considerations. Because "maximal diffusion" is two words, the maximal acquisition of knowledge is not necessarily the maximal diffusion of knowledge. This would be so even if it were clear as to what knowledge is. From neither the world situation nor the college preparation situation, then, neither the maximal acquisition nor the maximal diffusion of knowledge follows directly. It is neither clear as to which should follow nor if either should follow, except to some ideologies.

The value, or moral, dimension of this item of policy, in other words, is the *decisive* issue. It is that which makes a decision possible. It is the decisive issue particularly when it may sound as though one is referring to facts, for it is *precisely* then that the value issues dominate because they are mostly submerged, like an iceberg. From the moral point of view, "ability" grouping contributes to the alienation of men from each other and from themselves because it institutionalizes differences and qualities that are unrealizable in personal experience. One cannot "feel" or "see" or experience in any way various "levels of intelligence" in oneself or in others. That is why they made tests. People who think they can experience "levels of intelligence" in themselves or others are living their decision to approach living situations in a stereotyped and preconceived manner, their perception obstructed and the flux of human experience objectified in such a way that a living encounter with other people is prohibited. The *being* of levels of intelligence and intellectual achievement lies out there in the world in a more (or less) finely articulated, more (or less) coherently interrelated contexture of meanings that become possibilities of action through projecting into them: differences between apparently slow and bright pupils are differences in the structures, fluidities, depths, and possibilities of their worlds, out there in front of them. The

institutionalization of "ability" grouping suggests to them that the differences are over here, inside the skin, as properties one already has. This promotes alienation because it (1) considers human being with categories appropriate to non-human entities, (2) places "societal expectations" on pupils not with respect to who they are but with respect to what they are, (3) structures the worlds of pupils in such a way that it makes subsequent authentic coexistence impossible, and (4) is the institutionalization of the desires of dominant social groups, who collectively constitute an oppressing class. These will be discussed in some detail in turn.

(1) Because "ability" groupings define the predominant structure of the school, they suggest that the decisive aspect of human being in respect to schooling is "intelligence" or "intellectual capacity" or "academic achievement." Because the child's horizons are opened up in their way, they suggest to the child that the most important aspect of human existence in general, in social life and in the cosmos, is the same as that by which he is grouped in school. This is necessarily so because he is "learning" all these at once regardless of attempts to isolate the school from its social and cosmological context because these attempts do not isolate but define a different relation to the "outside" world. The point, furthermore, is not that "intelligence," etc., are unimportant to schooling but lies in their reification and in the concomitant reification of the pupils. "Intelligence," "intellectual capacity," "academic achievement," or whatever, do not exist except in action, yet the atmosphere of the school under "ability" grouping not only reifies them but reifies them as the most *significant* "attribute" that the school is concerned with.. More important than the value hierarchy (hence ideology) that is thereby implied is the fact that the major criterion for making room for the pupil within the school is an unrealizable. He cannot make room for himself in the same space that room is made for him without undergoing alienation from his own world, which includes the other children that he finds within it. He cannot be conscious of this "thing" by which he is grouped, nor can he go to the world, making room for himself, by what he can be conscious of.

Although no one else can be conscious of the reified "thing" by which "ability" grouping is instituted either, the practice nevertheless implies that "ability" is something one already has; it becomes a metaphysical, unknowable *Ding an sich.* Whereas the traditional conception of the superiority of "character" to "intellect" may have underestimated "intelligence," particularly in respect to its place in the attainment of "character," it does seem correct to say that if the honors student does not contribute significantly five or ten or twenty years after schooling is completed and if the "B" student does, then the significance of the latter's *schooling* achievement is greater than the former's. Although it may be correct to predict greater achievement from the former, schooling achievements are in some respects irrelevant to who one is, especially when human being as a totality is considered. They may be irrelevant to future achievement (i.e., low correlation). Predicting future achievement, moreover, may be

irrelevant to the tasks of schooling. Then advocating schooling policy on the basis of a future promise may overestimate the importance of schooling to authentic achievement, committing what Aiken has called the "educator's fallacy," and it may overlook the possibilities of the present for the sake of a non-existent future. What are needed, if one wants "empirical" information, are tremendously comprehensive and extensive longitudinal studies, more precise and controlled than Terman's or the Eight Year Study. It might be interesting to find out, for example, what becomes of National Merit Scholarship winners in the United States in order to see if the expense, annual disruption of school life in almost every school in the country, and distortion of curriculum entailed is actually worth while. Perhaps the money involved merely to administer the tests might be as well spent if it were donated to any college selected at random. How would one know? What kind of social contribution might one expect from "winners" to make the examinations worth the time? What percentage of "winners" might make wholesale administration of the tests worthwhile?

In general, that is, there has been little awareness of long range effects of recent "innovations," including "ability" grouping, and little attempt to examine thoroughly those things that sound good. The absence of longitudinal examination of the "innovations" such as "ability" grouping, that is, the absence of significant estimates of their value, accompanied by wide acceptance, can only make one wonder why they are considered desirable. At least part of the phenomena of being a good student has been a "capacity" to "learn" more from any schooling experience than "average" pupils, and at least part of the phenomena of "giftedness" has been doing whatever is assigned and finding more on one's own, i.e., until recently part of what was meant by "academic talent" was *less* need for teachers and schools. *Less.* Conceptions of good students or academic talent that do not focus on "self-motivation" as revealed in action are based on a belief in "magic": "talent" or "giftedness" is an entity that resides within the person that he already has and that is separable from what he does. To think that someone can do something because he has a "talent" or "gift" or "ability" for doing it rests upon a mode of reasoning from effect to cause whose paradigm is magic: to explain something is to name its "cause" even though there is no assurance that what is named actually exists. Then invocation of the name is supposed to produce the effect. It is also reminiscent of faculty psychology: "talent" or "ability" or "giftedness" can be improved through special exercises of the faculties that "ability" groupings are supposed to enable. They are either supposed to accelerate the acquisition of information or develop "abilities" (i.e., faculties). Because there is nothing holding any "talented" or "gifted" pupil back in any heterogeneously grouped class, and because faculty psychology is at least indefensible if not completely outmoded, one can only wonder why homogeneous groupings are deemed desirable in the absence of clues as to their worth.

If there are any students who need *no* innovations on their behalf, it would be good students, the "academically talented." All that the words *academically talented* could possibly mean is doing well in school. Then "innovations" in schooling to help those who do well in school are rather redundant. One can only wonder how redundant items of policy become taken to be a response to societal problems. One can only wonder at the motivations of people who advocate redundant items. It is not appropriate to question the sincerity of persons advocating, teaching, or enrolled in "fast" classes: (a) such questioning would be *ad hominem* to which only an *ad hominem* reply would be appropriate, which would end all chances for dialogue; (b) consideration of policy has to suppose a context wherein the decision is open to decision, i.e., a specific school system that is contemplating institutionalizing "ability" grouping. This supposing can be purely imaginative, for imagining what might be is sufficient to free thinking from the bonds of previous decisions. Then, in imagination, one can question motivations, for in concrete situations motivations are as relevant to the outcome of deliberative proceedings as evidence and logical argument are. From the viewpoint of any depth psychology they may be more decisive. If so, then one can legitimately question why "talented" or "gifted" pupils would want "ability" grouping: to relieve the anguish of not being able to be conscious of one's own "talent"? To avoid later trial by concrete action? To achieve one's being at a stroke? To achieve merit once and for all as if it were not the kind of thing that had to be earned anew in each situation? To avoid the risk of schooling with the "average"? Why would parents want it for their children? To insure a "head start" in later life "competition," i.e., to put their child's being out of question? Why would teachers want it?

The item takes on new dimensions if one asks *why* rather than *whether*. If the pupil's way of existing in school is related to his later way of existing in social life, then the most relevant question concerns his desire to enroll in "fast" classes and the sanction given his reason through permitting him to do so. Some of the reasons might be related to (a) unwillingness to accept the responsibility of relying on merit alone, that is, on action alone, without the aid of special privilege, which is failure to live up to the human condition of having to be responsible for one's actions; (b) anxiety, when it is motivated by accepting societal "values," i.e., later vocational success, before having the experience that could make "accepting" them a responsible choice of concrete alternatives; (c) alienation from others, for it arrogates to oneself an assurance of later societal success that is concomitantly and in inverse proportion actively denied to other students, the "average" ones, who can only return the hate later when they sense the fraud perpetrated at their expense; and (d) alienation from oneself, when it is prestige or success or power that is desired, for these depend upon the admiration and compliance of the unsuccessful in order to constitute themselves as "prestige" or "success" or "power," which is to place one's being into the hands of others. This inexhaustive analysis

suffices to suggest possible concomitant effects of groupings based on unrealizable, non-human categories: alienation from one's self and from others is promoted.

(2) When "ability" grouping is advocated as part of an attempt to develop human resources, particularly when it is part of an attempt to discover, motivate, and develop "talent" for ends that are *a priori* as far as the "talented" pupils themselves are concerned, the overt suggestion is that the "talented" child or youth has no right to solve the problem of existing for himself as best as he can, that he has no right to dirt farm, paint, write poetry or novels, wash dishes, or any number of things to which schooling is not necessarily a help. It might not be tragic if a "gifted" youth, say, drops out of school: it could only seem to be when viewed through someone else's "values" when those "values" are projected on to him trying to dominate him, as if someone else knew what the youth's future should be, or what his best future could be. Advocating the discovering and motivating of "talented" children, in other words, is arrogant, deficient solicitude. It presupposes that "gifted" children can and should be "helped" by schooling. A great variety of questions concerning the "motivation" of "giftedness," of which very little is known, thrust themselves forward. What if the greatest possible motivation for the greatest possible contribution to society stemmed from and only from total neglect and indifference on the part of the school? What if it came from imaginative wanderings during dull classes? Or from rebellion and impatience with unimaginative teaching or with the "duly constituted" social order? Or from compassion developed through insight into the problems of quite ordinary classmates? What if premature recognition ruins "talent" or its "motivation"? What if long periods of solitary, undisturbed, and unrecognized periods of gestation are the *sine qua non* of solid creative accomplishment? How would one recognize a "talented" person such that "investment" would be properly directed? What if societal recognition or "success" ruins "talent" at least sometimes? Or what if Sartre was at least partly right when, after his existential psychoanalysis of Genet, he said, "Genius is not a gift but the way out that one invents in desperate cases"? Might it not make as much sense to institutionalize the conditions conducive to the happening of desperate cases as to institutionalize the conditions that might tend to prevent them? Who would try *that* experiment?

The foregoing questions are not the kinds of questions that can be investigated "empirically": if something is once tried, it is not possible to tell what might have happened had it not been tried or had something else been tried, except with different people. The teaching profession, moreover, unlike the medical or legal professions, never sees its own failures. Teaching and schooling failures are all mixed up with pupils' failures during school years. Apparent school "successes" may manifest themselves as "failures" ten or twenty years hence in another town, or they may be "failures" that never manifest themselves as such at all. That is,

if "potential talent" is ruined by schooling either through being channeled through accelerated classes, through failure to be channeled through accelerated classes with other students of more discernible "talent" or through a myriad of other possible ways, it does not and cannot show. What might have been never shows. The "positive" results of ability grouping can be ascertained, but only to some degree because results in any case might have been better for all anyone can know. Negative results simply do not show.

The questions are not empirical in another sense. Even if they were amenable to research the application of the results is not an "empirical" question. Because any application involves children's lives, application falls *ipso facto* within the area of normative anthropology guided by existential concern for better or for worse. How life should be lived is a question of normative anthropology no matter who does it under whatever label. How other people's lives should be lived is guided by existential concern no matter how lucidly.

(3) Under "ability" grouping the structure of the life of the school structures the world of the pupil, both in school and afterwards. Because human temporality is not a continuous progression, a remembrance of school days years later brings the social structure of the "past" right into the present world. If vividly enough, the "past" remembered can be closer and more relevant to the present situation than incidents of the same day. Later remembrance of "ability" grouping prohibits authentically human relations because of the "earlier" inauthentic relations. "Ability" grouping is being there in school inauthentically with others because the grouping is based on ontic grounds: it has no foundation in human being and cannot be based on ontological differences between people. The "inequalities" it is based on are "real," within the assumption of certain methodological procedures that make them real, but they have no being apart from the bracketing of a particular method of inquiry. Groupings on ontical properties prevent the formation or development of an underlying "we are in it together" that is necessary for corporate action, i.e., authentic human relations. If Sputnik I demonstrated that there is only one world, and if the educational development of pupils is assumed to promote the kinds of persons who are capable of overcoming societal difficulties, then "ability" grouping runs counter to the main pedagogical intent. That children can come to "accept" or "adjust to" "ability" grouping when it is introduced early enough, then, is not a mitigating but a damning factor, precisely where tragedy may lie. Explication of this will lead to the final point.

In his criticism of "American culturalism," Sartre suggested that its mechanistic approach treated societal roles as essentially things *past,* removed from the temporality of a living perspective, but that

> everything changes if one considers that society is presented to each man as *a perspective of the future* and that this future penetrates to the heart of each one as a real motivation for his behavior . . .

because the societal possibilities are his possibles.[1] To understand a society, therefore, it is necessary to study the structures of the future that are presented to children. How are the structures available in the future presented in schools that have "ability" grouping? How are they presented to pupils within *their* temporal structures? As each person is "defined" by his societal possibilities, each is "defined" negatively by the societal possibles that are impossible for him; for the underprivileged each societal enrichment is one more impoverishment, one more societal possible that is impossible for them. Each schooling possibility that is added for only some children becomes another impossible for other children, another impoverishment, because it increases the number of routes forward that are closed to them. It increases the number of doors marked "No admittance." Whether "average" groups are college-bound or "college material" or not, "ability" grouping cuts off their future by institutionally (i.e., legally) negatively defining it. This is necessarily premature because it murders hope. Separate facilities are once again inherently unequal.

"Homogeneous" groupings provide segregated schooling that is necesarily unequal in the humane dimensions. The ontic property on which "ability" grouping is based is as irrelevant to schooling as the ontic properties of skin color or hair texture if schooling has anything to do with opening up future possibilities of being to children and youth. It is very difficult to see it doing anything else. Then the institutional elevation of some people on ontic differences is inherently immoral because it alienates pupils from future possibilities, i.e., from themselves, as well as alienating them from each other in their major institutional deliverance to the broader society.

(4) In light of the preceding, there is no "explanation" for the existence of "ability" grouping in any system other than the reinforcement of the dominant group by filtering off "talent" for its preservation (except for unawareness of the ramifications). This constitutes oppression of those who are not "acceptable." To define other people negatively by defining their impossibles for them is oppression. Any other term would be descriptively inadequate. A few facts help. The trend since Sputnik I has been a return to traditionalism: renewed emphasis on college preparation, acceleration, "ability" grouping, and the return to "standards" and "hard subjects" in the "new" suburban curriculums, as well as team teaching and educational television, not to mention "machines," have all been part of the Thermidorean reaction to progressive education. The recipients of these "advances," of these "conservative innovations," have not yet reached the labor market, but there still seem to be major difficulties abroad in the world that are *not* caused by shortages of trained scientists and technologists, and there is less assurance today that solutions can be found simply through having greater supplies of trained personnel available.

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[1]Jean-Paul Sartre, *Search for a Method* (New York: Knopf, 1963), translated by Hazel E. Barnes, p. 96. Italics his.

The schooling response, in other words, has been out of proportion because it has been a response to the demands of some and only some organized interest groups who collectively constitute a dominant or oppressing class in respect to schooling because their impact has in fact dominated and has in fact tended to negatively define children and youth by negatively defining their futures for them. It also constitutes exploitation of the rest of the public insofar as it is the utilization of public facilities for private interests, so that wherever there is "ability" grouping, there is oppression in the strictest Marxian sense. That this may have been accomplished without awareness of the consequences does not change the consequences.

Concerning the item selected for analysis to indicate how educational policy might be reflected on within a normative concern: if one begins with the phenomenon of world-wide, compulsory, free schooling and attempts to reflect on the arrangement that admits of the educational development of the kinds of persons capable of resolving or alleviating contemporary societal problems, one finds that it is so-called heterogeneous grouping. Other items of policy could be examined in a similar manner if it were decided that the basic educational issue raised by Sputnik I were in fact that of how to live together and that this issue were to guide policy decisions. All that would need to be done to escape ideological justifications would be to keep the phenomenon of the publicness of schooling in view.

CHARLES E. PHILLIPS

Schooling in an Earlier Era:

Some Reminiscences and Convictions

This article should be childishly simple because it is a record of my own experience as a boy and as a pupil during the early part of the present century, with occasional indications of how that experience fitted in with educational thought and conditions at the time.

From age three to seven I was taught at home to tell the time and to play dominoes, checkers, and a variety of card games—including euchre, cassino, thirty on the king, poker, and whist. These were obviously useful accomplishments because we lived with grandparents, an aunt, and two uncles—all maternal. My aunt seemed to rely on me to get her off to work on time, and I was constantly in demand to make a fourth at cards, except on Sundays, when only dominoes and checkers were allowed. Another advantage was that I was well prepared for learning to read at school without having interest killed by pre-knowledge of what the school would teach. Although the school had a kindergarten, I was not sent to it. My Anglican parents were probably aware of concern expressed in the Toronto synod in 1900 about heretical religious views of Froebel, but that would not have deterred them. Certainly it was not because kindergartens were "progressive:" my father and mother were extremely "permissive" even if unaware of any such labels. My only recollection is that they saw no reason for rushing things by sending a child to be cooped up in school earlier than need be. Of course, no one in our house had received more than an elementary education except my relatively young aunt, who had a year or two in fifth book, but my parents set no upper limits on the length of formal education—quite the contrary.

My chief recollection of beginning school is being made aware of the need for protection. Mother commissioned the elder brother of one of my two chums to ward off bullies at school. My chums and I kept together on the two blocks' walk to and from school for fear of ambush by the Sheridan (next street) gang who, among other things, were reputed to put coal or stones in snowballs. Such practices, we gleaned from our elders, were to be expected of "Micks," or R.C.'s, and we shunned them so successfully that we never learned for sure who they were, what they did, or whether the danger was imaginary. But fear of the strap in school was solidly based, and the strap was an awesome topic of conversation among the kids. My mother and some other parents sent

letters to the principal (a woman) forbidding use of the strap and demanding that their offspring be sent home if they got into trouble. Apart from the prejudices engendered, the chief effect of all this on me was to foster physical cowardice—a valuable characteristic for survival in twentieth century civilization. Although grateful for the result, I cannot recommend the prescription, but have nothing but praise for a paternal uncle's instruction in pacifism, as a result of which I fought down and overcame at the age of eight the tingling sensation ordinarily aroused by martial music. This was my first step towards a modicum of moral and intellectual courage, which society and its schools do their best to repress. Although now an agnostic, I must acknowledge that the second major step was accomplished by prayer—putting an end for good to persistent nightmares by just one prayer on just one night, also at the age of eight. It was possible for a child in Ontario to have a simple faith of his own in those days because there was no debilitating religious education in school, and the Church of England which we attended went through its ritual with a remote and dignified confidence which never upset the emotional security of the parishoners.

My first school, attended for four years, left no other clear impression. The reasons for this good fortune intrigue me now. To escape the unpleasantness of any undue attention from teachers and the principal it was necessary then only to learn what the school demanded. This was easy for me—not chiefly because I was academically bright but because I was docile. Docility is a word rarely encountered in educational writing nowadays, but it is a quality worth considering. The explanation of my own docility is as follows. Primarily it must have been because (a) like my parents I thought of the school as having only a limited, specific, albeit important function and (b) parents, relatives, and friends gave me such solid security and keen interests that paying attention in class for twenty-five hours a week seemed only a moderate allotment of the work that everyone had to do. It probably never occurred to me that one could possibly like school, and two of my chums and I were delighted to endure whooping cough to escape for a month and watch construction of a subway under the railroad. But we could accept the necessity of work, congenial or not, for limited periods of time. I know that all this reads like heresy from the pen of a progressive educator. Note, however, that in my opinion the chief desideratum for docility during five hours is a complete release from any such requirement for ten.

During the first three years of elementary school my parents rented a house of their own near the city limits and I used to walk about a mile to the nearest school. My chief recollection concerns the visit of an inspector who took over a third book class in mental arithmetic from the teacher. He showed us how to multiply by 25 by adding two noughts to the multiplicand and dividing by four. Soon most pupils were giving quick answers to such problems as 60 x 25, 84 x 25, and even 144 x 25. He then asked us to consider how we might "do in our heads" multiplica-

tion by 125 and put on the board as an example, 888 x 125. This lazy pupil apparently surprised him by giving immediately the obvious answer, 111,000. When the inspector asked how it was done, he seemingly expected the pupil to say, "Add two noughts, divide by four, and multiply by five." But the pupil caused him to blink and earned his praise by answering "Add three naughts and divide by eight." You will understand why I thought that a good school and why I am annoyed by popular articles on allegedly unprecedented ways of teaching. Progress in education is achieved not so much by new discoveries as by making exceptional practice more common.

The word "exceptional" leads me to recall a good old way of making special provision for the bright without objectional segregation. In my own case enrichment was provided by a friend of my aunt's who took me to Shea's vaudeville theatre every Wednesday afternoon. This extracurricular study was supplemented when I encountered manual training in the junior fourth and gave up when the board I had planed for seven weeks was noticeably thinner but more noticeably undulating in appearance. Thereafter I skipped manual training every Tuesday afternoon in favor of attendance at Crystal Palace, then the only motion picture theatre in Toronto. Possibly the school was a bit surprised at the regularity of the "Please excuse Charlie's absence" notes my Mother readily provided, but even a twenty per cent planned absence of the academically gifted reduces the need for the school to make other arrangements to relieve their boredom. When I moved to the senior fourth in another school, my parents tried a plan of having me stay away for two weeks out of every other month, with the result that I stood alternately first or last in class. Although the experiment was not scientifically controlled, and the data not processed by computer, I can cheerfully recommend the go-and-stay-away alternative to piling on more of the same in special classes.

To continue the special education theme let me say that in high school I objected to staying away from classes and that my permissive parents allowed me to attend regularly. The advocates of tight control may see this as a lamentable outcome of excessive freedom, but I may modestly claim to have devised alternative techniques of my own to cope with the problem. In the first form those of us who could handle Latin, Algebra and the like acceptably lent our homework to the less confident. Since this had to be done in class, the hazards of transmission and return were a challenge to ingenuity and occasionally helped develop an appreciation of high comedy. For example, we had a Latin teacher, Mr. Dunkley, who remained suspicious after examining the impeccable homework of a boy named Mac in front of me and sent him to the board without his exercise book to repeat his performance in translating one of the homework sentences. Mr. Dunkley, who had a reputation for unerring aim in throwing a Latin textbook, stood at the back of the room while the embarrassed and perspiring Mac made hesitating marks with the

chalk as he faced the board at the front. Imagine our suspense! When would Dunkley throw? Could he hit the culprit at thirty feet? It was almost an anti-climax to the tension of those ninety seconds when he did, and did—square on the back of the neck. But to continue the theme, by the time we were in IIA (grade X), several of us gifted regularly did our French homework in the algebra period, geometry in the Latin period, and so on. This is special education for the gifted *par excellence,* requiring, as it does close if bifocal attention and an alertness of mind equal to that of a sleeping dog who leaps at the first word of an invitation to go for a walk. It also provides leisure for the pursuit of congenial intellectual activities in the late afternoon and evening. I also learned to write examination papers with speed, except in English and history, and to make two copies for circulation among friends during the second hour of the test. This also is an exercise which sharpens the wits.

Nevertheless, in spite of such opportunities unwittingly encouraged by this very good school, there were stultifying practices impossible to circumvent. In the Ontario third form (grade XI) in 1913 there was virtually nothing of a strictly curricular nature for a pupil to do. One day the principal came to our class and invited those who intended to go into engineering to transfer immediately to the fourth form. Naturally I volunteered, but was told to report to the office after school. There the principal, a classical man and an autocrat known as the Iron Duke, said this: "Phillips, you will not waste your talents on engineering. You will do what I say. Spend six years in high school, win the highest scholarships, and take the honours course in classics at university. That is all. You may go." This was the guidance of half a century ago. I obeyed. Whether that was a loss or gain to science or education, I still think it proof that the old schools pushed people around more than modern airlines when they kept some of us for one or two extra years to ensure success (whose?) in scholarship examinations. In that third form a group of us managed to keep busy, but not out of trouble, by organizing an Anti-Dog Collar Society to discourage girls from wearing narrow velvet ribbons on their necks. Whenever the constant stream of communications in the algebra class was interrupted, the president had to write another five hundred or a thousand lines. Even now I advise against this exercise for the bright.

If you think that there were goings-on in this school of high reputation that would shock critics of schools today, you are right.. A distaste for the French language quite unrelated to present national problems seemed to put teachers of that subject in an unenviable position. In the Second form we had a teacher whose native language was French and who was potentially excellent as an instructor, but he was never given a chance. He was provoked by tricks and veiled insolence into tirades which sometimes evoked a bedlam of mock support. In the fourth form, where French came in the last period of the morning, a daily manoeuvre was to pull a boy named Arbuthnot from his seat, keep him crawling up

the aisle, whisk him into a large wooden cupboard at the front of the room, and lock the door—all at opportune moments when the teacher's attention was diverted. The sport thereafter was to ask Miss Blank for permission to get a book from the cupboard, let Arbuthnot' head appear, push it back, and re-lock the door. If Arbuthnot was not sufficiently co-operative, one or two pupils detained Miss Blank in the room for part of the lunch hour, so that the prisoner could not be immediately released. Although it would be easy to add more along this line, let me just repeat that the strictly disciplined schools of fifty years ago were not models of propriety even if the long hair was restricted to girls.

Some of the instruction was stilted. A history teacher distributed forty questions to pupils in regular order down one aisle and up the other. Everyone tried by calculating his position in the line-up to anticipate the question and fortify his mind by a peek at his notebook, but many failed and received an automatic detention. Then the teacher wrote on the board notes to be copied and used for questions next day. Apart from Shakespeare, who carried himself, and some intrinsically interesting narrative poems, my boy friends and I regarded literature in school as a total loss and decided that the way to pass examinations in the subject, apart from spotting, was to reproduce the cant handed out by teachers and never to say what you thought. One year we had a teacher of outstanding reputation who later in the year suffered a severe set-back in mental health, and for two months during the study of several poems the Philistine males in the class were unaware that what he said made less sense than before.

But we also had excellent teachers. Let me select only one—the senior teacher of classics. In Greek grammar and composition he would give fifth form class of seven pupils just an inkling regarding new material in the textbook. He then announced that he was going to the boiler room for a smoke and that we had fifteen minutes to master the new points of grammar and usage in the textbook and to put on the blackboard a translation—one sentence each—of the related English to Greek exercise. He promised to use the nose of the pupils to rub out any mistake he made. Surely this was the opposite of spoon feeding, an incentive to self-help and learning, and to individual self-reliance tempered by group co-operation. It worked very well.

You will, of course, realize that this high school was a strictly academic institution and you may wonder how successful it was in educating those who even ten years later might have accepted the alternative of a more practical course in a vocational or composite school. Avoiding statistics and relying on personal recollection, I am forced to say not very well. Many of my first form friends, who struck me as fairly intelligent characters, dropped out of the school environment before the third year. This means more than it would now because not everyone entered high school. Today I am one of those who would like to follow the American trend towards keeping the door to university open for a majority of pupils

through high school—partly by refusing to classify them as definitely vocational or academic. But I don't think that the old academic high schools could have carried them along. Perhaps there is no model of what is needed even among the high schools of today.

For those of academic bent, however, my old high school was quite a good institution—until the war came. Under our militaristic principal, who even before was always addressed by his retained title as "Colonel," the cadet corps was rapidly expanded. By 1915-16 he drafted even me —as an officer, no less—though I had never been in the ranks and was by disposition utterly unqualified. During my later teaching career at U.T.S., I came to see some value in compulsory cadet training because boys told me that they soon learned to hate it. During World War I, however, the unfortunate cadets had little chance to express their feelings before they volunteered under pressure to enlist in the army proper —a transition expedited by the Colonel's formation of an infantry battalion associated with the school. The Colonel's sudden and indiscriminate hatred of everything German caused him to engage in a violent altercation before an assembly of pupils with my school chum's father, who was a professor of German and a German by birth. This spectacle revealed dramatically the atmosphere of non-education which emanated from the principal's office and permeated the school, although nearly all teachers did all they could to keep it out of their classes.

To conclude with a summary of what may have significance today in these recollections, let me begin with the last and say we should begin immediately to teach a new kind of patriotism and get it well established while there is still time. For the rest, there is a need: to focus philosophy clearly on important problems; to realize that unorthodox preschool education in some homes may be better than impatience to begin formal schooling as soon as possible; to ask whether the cult of physical prowess and courage is not a more gross superstition than religion, a respect for which might be raised to a fraction of what is given to football if we avoid indoctrination with the dogmas promulgated by any church, boy scout leader, or health expert; to ask whether docility, or willingness to learn, might be more reasonably expected of the young if the demands of their "employers" (teachers and parents) were restricted as an adult union would demand; to know that there were always some good teachers and good ideas and that the improvement of education depends, not on novelty, but on getting a larger proportion of good teachers, as may be possible some time after the birthrate falls; to try out "released time" instead of segregation for the bright, especially when individual progress and less formally structured schools make it more practicable; to encourage co--operative learning in ways other than copying; to inform everyone concerned that guidance must enable, and must be allowed to enable, young people to make wise decisions and act upon them; not to set up rigid programs of study and timetables from which pupils cannot be exempted when occasion warrants; obviously to avoid certain other practices from which I can abstract nothing worth considering.

BOOKS

The Revolutionary Theme in Contemporary America (edited by Thomas R. Ford). Lexington: University of Kentucky Press, 1965. Pp. x, 99. $3.50.

These four essays were papers presented at a conference on "Main Currents in American Life" sponsored by the University of Kentucky to mark its Centennial in 1965. The essays focus on revolutionary change in American society, a comparison of Canadian and American societies, the impact of a "goal-oriented" activist U.S. Supreme Court, and the connection between organization and education.

In the open essay, Max Lerner sees America as having been revolutionary in two ways: historically in a transfer of power, i.e., American Revolution, and presently in a "drastic, highly accelerated pace of change." While the events of the post-war years have eroded the image of America as a revolutionary power in the first sense, the United States continues to be an authentic revolutionary civilization in terms of social change. Lerner identifies six major processes operating in American life: the revolution of weapons technology, the revolution of access, the uprooting revolution, the cultural and intellectual explosions, the time revolution, and the revolution of values. He does not see man totally at the mercy of these revolutions; it is possible "to locate these revolutionary changes . . . [and] to channel them . . . to the uses of radical humanism."

C. Herman Pritchett traces the recent role of the U.S. Supreme Court in protecting civil rights. Much of the resistance to the Court's decisions draw from two sources. First, while there have been activist courts in the past, they have generally supported conservative aims and have, as a result, received strong approval from the "establishment." The recent decisions have been in support of liberal goals and have not received the approval of much of the news media and the bar association. Secondly, where the Court has traditionally served as a brake on state action, the recent Court has operated as an instrument for social change. Pritchett argued that a strong Supreme Court is not only not a danger to democratic change but an added assurance that representative institutions will be responsive to democratic purposes.

Peter F. Drucker examines the relationship between the rise of modern organization and the educational revolution. The growth of vast organizations has meant virtually unlimited opportunities for the highly edu-

cated in the developed countries. Not only is education the "central economic resources and the key investment," but the university, the agency for producing the Educated Society, must become the creative centre of society.

Perhaps the most interesting paper is Seymour Martin Lipset's comparative examination of Canadian and American societies. Using the four distinctions of achievement-ascription, universalism-particularism, self-orientation-collectivity orientation, and equilitarianism-elitism, Lipset sees the United States as "more achievement-oriented, universalistic, equalitarian, and self-oriented than Canada." The major factors causing these differences are identified by Lipset as the Canadian counter-revolutionary past, its need to distinguish itself from the U.S., the Anglican religious tradition, and the difference in frontier expansion. Lipset cites the impact of the Loyalist settlers (it would appear that the United Empire Loyalists have great explanatory power in Canadian historiography) on the development of anti-American sentiment. His easy distinction between the Canadian "mosaic" and the American "melting-pot" approaches to immigration is entirely too simple. Neither does he show why the Methodists and Baptists, who strongly opposed a religious establishment in the United States, exercised limited influence in Canada and why the Methodists were willing to become a part of the "establishment." Although Canadian Society may be as Lipset describes, the reasons for it would appear to be more subtle and complex than he allows.

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Paul Diesing. *Reason in Society: Five Types of Decisions and Their Social Conditions.* Urbana: University of Illinois Press, 1962. Pp. 262. $5.75.

This is a very useful book both for the decision maker in an ongoing enterprise and for the detached students of *wissensoziologie.* Professor Diesing states his purpose early and with clarity in the following terms:

> The basic purpose of this book is to explore three other kinds of rationality which are basically analogous to technical and economic rationality without being reducible to them. . . . I shall consider in addition to technical and economic rationality, the kinds of rationality appropriate in interpersonal relations, in law, and in governmental or control systems. (p. 2)

Diesing points out initially a tendency to equate rationality with technical or economic rationality. He invokes von Mises: "all rational action is therefore an act of economizing." Current organizational theory tends to define organizational rationalization in terms of increments in productive efficiency. Raymond Callahan in his work, *Education and the Cult*

of Efficiency, details the unpleasant consequences of the application of economic and technical rationality to educational policy decisions. One of the major emphases made in Diesing's work is the conflict of different forms of rationality in differing institutional contexts. He states quite candidly, "I wish to change existing conceptions of rationality." (p. 5)

The author emphasizes that he will utilize S. C. Peppers' conception of *natural selective systems*—a form of Darwinian survival related to culture traits or techniques which tend to be reinforced by rewards or efficacy over time. It is also not unrelated to Comtean organicism or natural systems which evolve according to some inherent logic.

> Selective systems, then, operate through the agency of individuals and on culture traits. They produce a gradual increase in number and quality of effective culture traits and a decrease of ineffective traits over a period of time. (p. 6)

The different forms of rationality are linked to what Diesing terms *trend developments*—in other words, each form of social rationality is linked to an institutional, organizational or functional context. Each of these contexts in turn exhibits a goal-dynamic such as economic progress, integration, stratification, or legalism.

The author uses a common format to analyze differing patterns of rationality. He first attempts to describe the historical trend of development and the type of organization it produces. Next he goes on to the pattern of decision making within the area, discussing the conditions under which this method is appropriate. Finally, he attempts to identify the kind of "good" produced by the rational action under discussion.

Taking only one of the five rational forms, technical rationality, the author points out that this form is undertaken for the sake of achieving a given end. It is associated with technological progress or with increasing the efficiency of productive techniques. A technically rational decision is one best suited to move a sequence of actions toward a given goal —it is in short a means to a predetermined end. It is the appropriate decision in a calculable context or the price system. The good achieved is some utility, satisfaction or goal attainment.

The other forms are similarly analyzed and contrasted. The legal order is directed toward a system of clear, consistent, detailed and technical rules; the social system toward integration; the economic system toward the production of utilities in a more general sense than limited technical utilities; and the political system in the production of freedom. Trend developments, appropriate contexts, and decisional patterns are discussed with discernment and erudition.

Diesing attempts in his final chapter to generalize about the concept of reason, citing attributes such as order, creativity, and calculation. "Every decision," he states, "is a creative act." (p. 240) He concludes

with a plea for greater emphasis on forms of rationality other than technical and economic:

> Social and political rationality are the most neglected of the forms of rationality today and their study is the most important, both in theoretical terms and in relation to the principal world problems of today. (p. 247)

On the positive side, Diesing refines at a considerably more sophisticated level the concept of social rationality beyond the simplistic or monofactorial view of economics and technology. His interpretation is however not without bias. He is almost Hegelian when he states:

> Existing societies are reasonable because they must be in order to survive. Reasonableness occurs because it is rewarded by continued existence, and beyond by increase of power, security, adaptability. (p. 240)

Despite some mention of creativity there is, in this work, a sociological tendency toward consensus, group maintenance and evolutionary change without sufficient recognition of the functions of conflict and existential deviancy by individuals. It tends to manifest a conservative-organicist bias common in the functionalist perspective in sociology.

This effort is, however, an extremely useful step in clarifying an important concept with sophistication and grace. Decision makers in education can gain a better understanding of functional areas beyond the normal economic and legalistic frames of reference to which they presently seem to be limited. The mistakes of Cubberly and Strayer need not be repeated. For the theoretician, the heuristic possibilities for research and analysis are considerably broadened. This is a valuable and insightful book, written with deceptive clarity and providing fare for both the discerning decision maker and the speculative investigator.

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