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# MJE

The M<sup>c</sup>Gill Journal of Education

Paradigms Lost

a special issue on metaphors  
and the importance of not being earnest

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# The McGill Journal of Education

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**"A Shrike"**  
Carroll Kerner

## The Importance of Whistling in the Dark

When you consider the extraordinary muddle our minds are in, is it not a great presumption for us to undertake to educate anyone else? It is not only that the physical arrangement by which our minds mostly function is composed of a bewildering complexity of minutely intricate ganglia with an apparent life of their own. But it is also that any seeming consistency with which that seething community within the skull behaves is preserved only by our shutting down or otherwise ignoring certain disturbing inconsistencies that tend repeatedly - having also a life of their own - to manifest themselves in our heads. And then, of course, there is "the big booming buzzing confusion" of the extraordinary world outside.

Ah, but as to that. Have we not made enormous inroads on external reality, using the very same unsatisfactory minds to do it, for all their unreliability? Have we not painstakingly and with subtlety and precision rendered ordinary and predictable, by our understanding, almost all the phenomena of which we are aware in the external world, to the point where we are now comfortable and secure in an environment that once continually punished and terrified our ancestors? Surely there remains only a matter of organization and of understanding each other to enable our sharing that comfort and security throughout the world, right across the spectrum of the human species.

By concentrating on the external world, it seems we can also manage to bring calm to our messy minds, finding them of some use after all in discovering consistencies outside them. Turn those minds upon themselves, however, and the whole system tends to set up unpleasant vibrations that should warn that something is going wrong. Now if - speaking of education - we were simply to undertake to tell our successors in their generations what we have figured out about the external world, there would seem to be nothing presumptuous about that. There is much to tell, an enormous amount, and it is sound; or else

why should that space laboratory hang so serenely in the empyrean, or those explicit messages return to us so certainly from far within the tiniest cells, or from far beyond Venus and Jupiter?

Those parts of our educational undertaking that deal with the external world typically arouse our least concern indeed, except as to the numbers of people they reach. Teaching and learning in the natural sciences always seem to go forward calmly and rewardingly for all involved. Those who are involved nevertheless repeatedly deplore that we give their kind of education less time, attention, and manpower than other kinds enjoy. What most people mean by "education", and constantly aspire to gain from it, is what people are least qualified to give to it - an understanding of themselves and of the fundamental blind purpose of the species. Without that understanding of people and the species to begin with, how is it that we can presume to know how to educate anyone else, let alone know what to educate them in?

A great deal of our muddle about our own nature appears to be engendered by trying to cope with the differences between a man and man - or, as we must translate it nowadays, less pithily, between a man or woman and the human race. The one must die, the other goes on. The life of the one has a perceptible pattern to it, and passes through phases; the span of the other is hardly knowable - nor is there any evident pattern. We confuse these considerations when we attempt education. And in addition we confuse the idea of a society with that of the human race as a whole.

A society will see to it that education is organized for its regenerating young, as an act of renewal of itself; but then we teachers turn around and talk about educating individuals. This sort of mix-up has been going on for ages. We manage to reconcile these confusions only by rhetorical gimmicks, with unconvincing assertions about "socialising the individual", and that "the ideal society should meet every individual's needs", etc. Individuals have been consequently known even to die "so that the society might live." Yet it is not as if any given society could represent the interests of the whole species. There are hundreds of societies; and they are in constant disagreement with each other about that other huge, dim continuity of the species, and what it's for.

What is it for? Each one of us is born, and after the passage of years becomes aware of an identity, struggles to keep it or survive, copes more or less to satisfaction, realises he or she must die, and wonders why. A major thread in each such selfish life is the demand of the species for reproduction, yet who would know it to hear us talk? Oh we know that sex is important, especially in the twentieth century, but important for what? To see this urge to mount one another as a matter of entirely personal gratification is to behave as the animals we really are - and to do that, because it is after all an

acceptance of reality, is perhaps progress. But it is also to be as blind as animals to the real reason why we do it.

In trying to understand ourselves we sophisticated animals are in the habit of talking to each other a lot; this makes some sense, when you consider that the data - ourselves - unlike those of the external world, can talk back to us in our own language - although this of course carries an infinite potential for self-delusion. We also like, in pursuing such inquiry into ourselves, to use metaphors a lot. When we cannot see pattern or structure in some group of phenomena we wish to understand, we try out a pattern we have seen in other phenomena. We have certainly done better so far at understanding the external world than the internal, so we have successively tried to apply to human behaviour ideas borrowed from mechanics (such as leverage, force, and momentum), hydraulics (potential and capacities), steam power (pressure, safety valves), electricity (short circuits), systems (feedback), not to mention chemistry, magnetism, and so on and so on. Our common speech about ourselves is full of language from these fields, blithely mixing the lot.

But serious students of any aspect of human behaviour must work, consciously or not, with **one** hypothesized pattern in mind, that promises to render the phenomena consistent with each other. This hypothesis for structure must come from somewhere. Principle dictates that it should emerge from an impartial observation of the data alone, and represent the recognition of a pattern there. In practice, however, recognition means that one usually recognises something one has seen before elsewhere. One transfers the familiar pattern, with its language, to the new data; and so another metaphor sets its foot in the door.

That there is much trouble as well as reward in using metaphors is the theme of many articles in this issue. That there is also a great deal of fairly comic muddle, occasioned when people more or less unwittingly switch metaphors, or remain unaware that they are using one as a paradigm at all, is one of the issue's main points. (It was a great relief for this editor - at the conference last year at Vancouver from which many of these papers come - to find the themes of education at last being taken in the comic spirit that they deserve.)

Shifting from one metaphor to another may not mean progress, then, but it does keep us interested and hopeful. And all that talking to each other that is the other method in our search of ourselves, if it does little else, does at least keep bringing up things that we hadn't noticed before or had forgotten. So an education that proceeds by talking to one another in metaphor, about the confusions in human nature concerning the whole point of the human species, may not establish much understanding in our students - because we as teachers have such muddled minds about it ourselves; but at least it helps both teachers and students to learn more than

they knew before, and so to preserve us all from despair and disgust. Maintaining hope and interest like this is vital for our species. For our disgust with ourselves, and our despair, now seriously threaten our survival.

**J.K.H.**



**"Iain"**

Wendy Curtis

The collage designs in this issue were produced on the theme "An Imaginary Creature", by undergraduate students enrolled in "Basic Arts Media," a course given in the Department of Education in the Arts at McGill University by Professor Clifford Papke.

## Educational Heresies

Members of the Canadian College of Teachers who heard last October the speech that follows may have told themselves, to explain their enjoyment, that here for once were plain truths plainly expressed. But Jefferis' plain truths or heresies, though they arouse instant and joyful recognition from deep within most of us, are not so plain that they stand out to the naked eye, in the landscapes of contemporary education, from the great drifts of not-very-volcanic linguistic fall-out in which they lie buried. Nor are they quite so plainly expressed. The language of his talk may be characterised by an apparent simplicity; but it is the simplicity of an elegance, and is pointed with a delicacy of timing, that is the hallmark of a classical scholarship humanely applied over the course of a life time.

This I must regard as a great honour. I have been a member of the Canadian College of Teachers for more than a quarter of a century, and today is the first occasion that I have actually attended a meeting, either General or Regional. (You all know, I am sure, how easy it is to find excuses.) And now, at my very first meeting, I am asked to speak to you.

Admittedly, I am not your first choice. It just happens that the speaker originally chosen, Dr. Caldwell, is unfortunately in poor health. He was going to speak to you under the title, "Where Have All the English Gone?", but alas, that one particular English has gone to a sick bed, and I shall not attempt myself to track down the others.

Admittedly, too, I am not going to speak to you. I am going to read to you. As you realize, I am a very old man and I have, for all practical purposes, lost my memory. So I now have to write down anything that I am going to say, for fear of forgetting in mid-delivery what is supposed to come next - because that is embarrassing both to me and to my audience.

With these caveats, nonetheless, it is a great honour for me to address you. I have chosen as title for my address, "Educational Heresies". What I propose to do, is to take certain generally accepted hypotheses about education, and tell you why I disagree with them. This procedure has two aims. First, it will relieve me of some black bile. Second, it may provoke you, too, to challenge some popular assumptions. Further, it will provide me with a plausible excuse for airing some of those personal anecdotes to which we old men are so prone.

## **Assumptions**

### **A. The terms "education" and "schooling" are synonymous.**

Though I have never actually heard anyone make this statement, yet it is an assumption generally accepted - that education takes place only in certain buildings, called schools, set apart to provide it. This is simply untrue. Indeed, in our beautiful English language, we have a word to denote people who educate themselves without attending any special institution; we call them "autodidacts", which means simply "self-taught". Anyone who has learned to read can educate himself, and it is not necessary to go to school in order to learn to read. I myself was taught to read by my mother before I ever went to school, and so were many people in my generation. Nowadays it is customary to frown on such maternal behaviour and discourage it. Efforts are made to bring the child into an institutional setting at an ever earlier age. There are not only Kindergartens, but pre-kindergarten classes. We can envisage a future - not in 1984 perhaps, but not long after - in which the new-born infant will be carried immediately from the hospital where it is born to an educational institution - from delivery room to school room.

What nonsense. Education is a process which goes on outside schools just as much as in them, and goes on through life. When I read Mary Renault's recent novel, "Funeral Games", as I have just done with great pleasure, I am educating myself, and I propose to continue the process till blindness or death stops me. The Minister of Education (ominous title) cannot control this process, much as he might like to do so.

I refer to "Minister of Education" as an ominous title because behind it there lurks the implication that this whole lifelong process should be under control and should be measured by someone else's norms and standards.

Actually, with the progress and spread of technology, there is less need for anybody to be physically present in a building set apart for it in order to receive even "schooling". It is already possible to attend a university while sitting at home, watching and hearing instructors on television. Children in the remoter areas of Australia have for some time been able to receive all their school lessons by radio broadcasts. Some of the so-called Futurists envisage a day when all schooling,

including interaction between teacher and pupil, can be carried on without anybody leaving home. Obviously - at least in my opinion - much will be lost under such circumstances, but such scenarios serve to enforce the point that educational buildings, and regular attendance at them, are not essential conditions for education to take place.

**B. Schools can teach everybody everything.**

Once again, I have never heard anyone make this statement, yet it is an assumption implicit in much popular opinion. Recently I heard a man on the radio assuring his audience that we should have a bilingual Canada if, and only if, children were taught in both English and French throughout their schooling. Again, we have those who firmly believe that the sexual problems with which our age is struggling can be readily overcome by courses in sex education from Kindergarten onwards, a remedy which, I regret to say, our Protestant system (if I may still use the term) seems only too ready to try. When I myself started teaching, nearly sixty years ago, I had to teach Grade VI Health, a course largely devoted to explaining the dangers of alcohol and tobacco. Yet our governments still depend for a large share of their revenue on the taxes and excise levied on these condemned products.

The reason, of course, is that teaching does not result in learning. You, as teachers, are painfully aware of this, but I will give you an example from my own life. For twenty years I supervised students doing practice teaching. Regular teachers were always willing to let them have a crack at Grade VIII General Science. When we started in the schools, just after Thanksgiving, they had usually just reached the section on HEAT. Consequently, at a conservative estimate, I must at least thirty times have heard students teach the difference between Conduction and Convection of heat. I still have not the remotest idea of what the difference is, and, like Rhett Butler, "Frankly, I don't give a damn". That's why I haven't learned.

The same thing is true about sex, and a second language, and drinking and smoking. One does not learn everything one is taught - only what one wants to learn.

**C. There exists a right to education.**

This statement, relying on our first assumption, means that everyone has a right to attend school. This I flatly deny. Schooling is not a right or a privilege. It is an obligation. It is compulsory. If you have a right to something, you can take it or refuse it. If you are a widower, as I am, you have a right to remarry, but you are not, thank heaven, compelled to do so. If you are a citizen, you have a right to vote at the election, but you are not compelled to cast your ballot for one of the rascals.

Let me support this startling truth by quoting the decisive language of the judgment in the Supreme Court of the State of

New Hampshire in the celebrated case of *Fogg vs. Board of Education of New Hampshire*. "Free schooling furnished by the state is not so much a right granted to pupils as a duty imposed upon them for the public good. If they do not voluntarily attend the schools provided for them, they may be compelled to do so. While most people regard the public schools as the means of great personal advantage to the pupils, the fact is too often overlooked that they are governmental means of protecting the state from the consequences of an ignorant and incompetent citizenship."

I cannot cite any equally eloquent decision from a Canadian Court, so I must rely on a quotation from Dr. Bergen's standard text, *The Legal Status of the Canadian School Pupil*. He writes, "An analysis of the court decisions on these matters leads one to the conclusion that education is not so much a right or privilege as it is a statutory duty imposed upon the child for the public good. Decisions have clearly indicated that the child has no inherent or absolute right to an education."

Compulsory education is imposed upon children in the hope that society may not suffer from their ignorance and incontinence after they cease their schooling.

#### **D. Education is free.**

Again, education is equated with schooling, and, again, the statement is untrue. Schooling costs money; it is, in fact, very expensive. At the least, buildings must be erected, heated and maintained, and teachers must normally be paid. Even the most stupid government - and I mention no name - realizes that it can reduce its expenditure and its deficit by paying teachers less money individually and reducing the total number of teachers.

The statement that education is free properly means that it is paid for by those not receiving it, paid for by the citizens in general, through taxation, not by the pupils in the schools. It is irrelevant whether it is the municipality, the province, or the confederation that collects and spends money on schooling; each is a government, and in each case the individual citizen pays through taxation.

This procedure is just in so far as the whole community benefits from the schooling of its children. As our own Dr. Percival once put it, "Since every person in a country stands to gain by the education of every other, it is simple justice that the expense should be shared by all." I have no children; why, I might ask, should I pay for a school which I do not use? For the same reason that I pay for a jail which I do not use either. And, incidentally, it is still cheaper to maintain a child in school than a convict in jail.

One more quotation, this time from Professor Henry Morrison. "The public school system exists for the defence of society against the menace of ignorance, vice and lawlessness and for nothing else." To this heresy I wholeheartedly

subscribe.

#### **E. Parents should run the school.**

This is a crude way of phrasing an opinion which has gained increasing impetus in recent years, which has been responsible for the introduction of School Councils, and which lurks in the dark labyrinths of the current Bill 40. The school stands in loco parentis, and now it's time that the parents take over the locus completely, controlling teachers, administration, course of study and everything else.

Now if you accept Professor Morrison's dictum, as I do, this principle is completely unacceptable. Free compulsory schooling is provided by general taxation for the general good, and every citizen has an equal interest in what is done by teachers, administration, course of study and everything else in the school. These matters are not the concern of parents solely or even primarily.

My next-door neighbour's two children go to school. (I hasten to add that they are really nice youngsters.) It concerns me, even more than it concerns their parents, that they should learn to respect other people's property, and not to mock, and perhaps eventually mug, crippled old men. It concerns me even more than their parents, for their parents can, and I am sure do, teach them these lessons at home. All I can do is hope that these lessons will be taught and learned in the school for which I am helping to pay.

In practice, as you know, "Parents should run the school" means that certain officious busybodies want to tell teachers what to do and how to do it, as if the relatives of hospital patients should control the performance of their professional duties by doctors and nurses. Both sets of circumstances are completely unacceptable.

#### **F. Bigger is better.**

This hypothesis, an accepted part of the general thinking twenty and even ten years ago, has been applied in education in this province particularly since the publication of the Parent Report. It is responsible for the appearance of the monstrous polyvalent schools with populations of more than a thousand pupils in each. To reach these schools, in rural areas, pupils may have to spend as much as two hours a day in transit. This is too high a price to pay in order to become just one more anonymous face in a mob scene. Every morning on my walk downtown, I am passed by school buses filled with adolescents whose faces bear the same look - the look of unrelieved boredom with their journey. What a way to start the day.

I remember that some years ago I uttered this complaint to a high official in the Ministry. "When I was a boy," he replied, "I had to walk for an hour to school every day, part of the way across the fields, and it did me no harm." No doubt - but his walk exercised his body and brought him in contact with the varying phenomena of nature in its changing

seasons, which is not the experience of the youngster sitting in a rattling, smelly bus on an interminable autoroute.

"Where have all the English gone?" Dr. Caldwell was going to tell you. Part of the answer is that they have gone away from our small towns which no longer boast a small high school as their educational and social centre, and which no longer have house teachers who take an active part in the life of the community and provide a model of culture and rectitude as some of you surely once did.

Even without the ill effects of long distance busing, I believe that the gathering of very large numbers of pupils into a single institution is wrong. Education is properly an individual transaction between a teacher and his pupil, as in the ideal situation of Mark Hopkins at one end of a log and his student at the other, or the more recent slogan of "each one teach one".

Granted that we cannot attain this ideal situation, I should be prepared to lay it down as a rule of thumb that any education institution is too big when it is impossible for some one individual to know by face and name every other individual in it. This is obviously an elastic limitation, but I should optimistically guess that it would stretch to a school of 150 pupils and ten teachers. The one individual who would know everybody else would be the Principal, who would be, in the old English term, the Head Teacher, not a manager shut away in an office, but devoting a reasonable part of his time to the noble art of teaching.

I started by confessing that I have not previously attended a meeting of the College. This is not a criticism of the College; it is a criticism of meetings. I have valued the College and, during my membership, have written quite a few letters to the President or Secretary of the day. (It is one of my personal heresies, that a letter is a means of communication preferable to a telephone call. Another of my heresies is that it is both legal and moral to allow a telephone to ring without leaping to answer it.) I have valued the College because I believe that it is an institution through which heresies may be discussed, promoted and propagated. Having neither the power nor the responsibility of operating an educational institution, the College is not bound to accept the orthodoxy of the moment, and is very properly concerned with educational heresies.

As we look back on the history of education, we see that the great names it records - Plato, Luther, Comenius, Pestalozzi, Madame Montessori, to name but a few - all attained their place in that history by writing or acting in opposition to the orthodoxy of their day. They were not content with the currently accepted assumptions. They were Educational Heretics. It is my hope that the Canadian College of Teachers will add to their numbers.

**J.D. Jefferis** is an emeritus professor of Bishop's University where he was Professor of Education from 1944 to 1968. Educated at Christ's Hospital, in England, and subsequently at Bishop's, McGill, and the University of Toronto, he taught Classics at schools and universities in Ontario, becoming Professor of Classics at the University of Western Ontario before returning to Bishop's. His "current plans" (in February) were to re-read the first three books of Herodotus before Easter.

## Two Wrong Steps for Curriculum Structures of knowledge and stages of development

It seems natural enough to resort to one or other of two related lines of enquiry when submitting education to serious study. After all, we have the familiar play upon words in answer to the question, what do you teach? Some answer as expected by giving the name of a branch of knowledge; others, more provocative, will say "children", or words to that effect. So curriculum-making has tended to rely on the results either of analyzing the structure of knowledge, or of detecting stages of development in individuals. Kieran Egan is not quite too polite to say so - he thinks both are a waste of time for people in education, and points to history curriculum as his example. Worse, they have commandeered all room for thought about curriculum, preventing adequate follow up of such productive and genuinely educational ideas as Whitehead's - of a stage of "romance" preceding a stage of "precision". Psychological stages are irrelevant in an essentially cultural process such as education is. The search for structures of knowledge is less harmful as an influence, but only because it has been less influential.

There is a common view that the way to address educational problems is to draw on the research tools and findings of various disciplines. In this view the study of education is a complex interdisciplinary task which involves welding together facts from the social and behavioral sciences, philosophical analyses of knowledge and values, future-oriented assessments of society's functional and other needs, and perhaps also some transcendent image of the educated person.

The aims of the educational process, in this view, are somehow set by "society". Philosophers do not set these aims, but they may serve to articulate them, show how they may be justified, or not, and make explicit the value assumption on

which they rest. As a part of this job philosophers may be expected to show what knowledge best contributes towards these aims and to tell us about its "structure".

In addition there are many facts that have to be established; facts about the relative effectiveness of different methods of instruction, about children's development, about the influence of family background and linguistic environment on academic achievement, about the administrative structures of schooling, and so on. "Science" is the stuff to use in order to establish the facts, and so, in this view, it is the most assertively "scientific" researchers who are looked to for such knowledge.

The role for curriculum researchers within this complex world of educational study is to take the aims provided by "society", the knowledge organized by philosophers, the facts given by psychologists and sociologists, and compose from these a curriculum. Or, more modestly, individual curriculum researchers may focus on some part of the sprawling fields of study that seem to impinge in various ways on education and sketch its implications for the curriculum.

My argument is that this common view of the proper way to study education is mistaken. It yields endless labour for endless researchers and inquirers but it yields little, if any, educational fruit. Its evident failure to yield fruit is not, I will argue, a contingent matter - due to our not having been clever enough in our inquiries or persistent enough in our research - but follows of necessity from the fact that it has been looking in the wrong places for the wrong things.

### **Two separate explanations**

Influential in our traditions of inquiry, because so successful, has been the method of isolating objects for study, separating them from whatever they may be contingently connected with. The educational problem of dealing with the dialectical process of children growing older and of knowledge accumulating in them, and their thus becoming more sophisticated intellectual beings, has yielded distinct inquiries: a psychological one into children's cognitive development and a philosophical one into the nature and structure and logical development of knowledge. By better understanding these separately, it is assumed, we may bring them back together to resolve better the educational problem.

I will argue that the methodologies used in the distinct philosophical and psychological inquiries ensure that the problems addressed are significantly different from the educational problem with which we hope to deal, and that the contributions they offer can be accepted only at the cost of perverting the educational process. Before criticizing the educational value of these two areas of inquiry, however, let us look briefly at an ancient and irksome problem they face when attempts are made

to separate them.

It is hard to see how far developments of the kind we observe as important in education are caused by some natural cognitive maturation and how far they are caused by the acquisition of knowledge and experience. There is a tendency now, due to the influence of a particular kind of developmental theory, to see the two as "feeding" each other; thus experience and knowledge stimulate cognitive development, which in turn permits the acquisition of more complex knowledge, and so, dialectically, on. (This is not to say that this is the claim of any particular theory, but rather that the influence of some developmental theories has helped create this as the general "common-sense" position.)

To try to clarify the problem, it might be useful very briefly to look at the extreme claims on either side of this "common-sense" position. On the one, "structures of knowledge", hand is the claim that there is no such thing as cognitive development. The developmental stages described in some psychological theories are not, in this view, descriptions of a natural maturational process but are simply reflections of developments in knowledge and language. The mind, then, is not to be seen as in any sense analogous to a physical organ that grows and develops in a particular way if given appropriate food and environmental support - in the case of the mind, knowledge and experience of social interactions being the appropriate food. Accumulating knowledge and experience are not stimulants to mental growth; they **are** mental growth.

The extreme claim on the other "stages of development" side is more familiar today due to the influence of Piaget. It is that the most important developments we observe in education are due to the natural and spontaneous unfolding of a sequence of cognitive structures. Their growth and development follows an invariant pattern more or less regardless of the particular knowledge and experience learned, as long as the child interacts appropriately with an adequately rich social environment. In this view, "thinking skills" - the ability to deal cognitively with any content - is a result of this underlying process of cognitive development going forward and not being inhibited by constraining pedagogical practices or impoverished interactions with restricted environment.

So, if we observe that young children have difficulty understanding certain kinds of abstractions, the latter position will explain this as caused by certain cognitive structures not yet having developed; the former by certain abstractions becoming meaningful only after certain sets of concrete particulars have been learned. For one group, the explanation is an age-related, psychological matter; for the other, it is a time-related, logical matter.

### History in the Curriculum

As an introduction to some criticisms of both areas of inquiry I will consider briefly the place of history in the curriculum. Though there are widely divergent views about how much and what kind of history there should be in the curriculum, it is generally assumed that becoming educated entails accumulating some knowledge of history. If we try to focus on educational questions about history we might generally be interested in what role it should play in a person's education, how important it is vis-a-vis physics and computer programming, how much curriculum time should be given over to it, what history we should teach first, and how we should sequence a history curriculum, how we should organize its teaching at different ages. Let us consider one answer given to a part of one of the above questions and see what we may learn of the method that produced that answer, and what the answer suggests about the two main inquiry methods I am trying to criticize.

A.N. Whitehead in his seminal essay "The Rhythms of Education" proposes that in education a stage of romance should or properly does precede a stage of precision. What kind of claim is this? It is clearly not a straightforward logical or psychological claim. It is not a claim that it has been empirically established that a stage of romance is a prerequisite to a stage of precision. Similarly he is not claiming that as a matter of logical necessity romance must precede precision. He is claiming rather that for the fullest understanding of a subject, as Elton has claimed for history in particular, our curriculum **ought** to ensure that units of teaching focus on stimulating a romantic engagement with the subject matter and that this should be followed by a focus on developing precision.

But - to make matters a little more complicated - Whitehead is clearly not making an arbitrary prescription. He does think that if one wants to educate someone to have an historical consciousness, for example, then there is some sense in which a stage of romance is a kind of logical prerequisite to a stage of precision, and some sense in which he clearly believes that it could be empirically established that this sequence is required for reaching the aim of an historical consciousness.

Now we need to explore the "in some sense" and "kind of" qualifiers in the above. Any process is largely defined by its starting and ending points. If we focus on a particular strand of cognitive development whose end is a stage of formal operations, then the stages of the process are in some degree defined by their accumulating contributions towards that end point. If the end point is historical consciousness then the process will be defined in terms of the major cumulative stages towards that end. Given an end point such as "historical consciousness" it is on the face of it quite plausible that careful observation might expose, as an hypothesis if you will,

cumulative stages which we may call romance and precision.

Is Whitehead's, then, a logical - in the imprecise sense I'm using that term in this paper - or a psychological claim? Nothing in the "structure of knowledge" kind of analysis has yielded anything like a distinction between romance and precision, nor any suggestion that the sequencing of a history curriculum should be significantly discontinuous in such ways. Nor has any study in the "stages of development" tradition come to grips with stages of Whitehead's kind. The basic unit of such research is typically the concept, and the methodological tools available in this area are unable to come adequately to grips with such general processes as accumulating constituents of such complex ends.

Whitehead's and Elton's observation is introduced here to point up the fact that it is quite distinct from and indeed alien to whatever is or has been produced from the "stages of development" and "forms of knowledge" inquiries. My argument is that if we accept these methodologies from psychology and philosophy as appropriate determiners of what can count as educationally significant knowledge we will in fact discover nothing of genuine educational value; we may be able to use some of the products of this research but only at the cost of perverting the process of education. Observations such as Whitehead's, for example, must simply vanish when these research methods are dominant. This is what has happened. What has kept Whitehead's essay alive is the persisting sense that the process of education is something autonomous and complex and that his observation is rich and potent.

### **Structures of knowledge**

The "structure of knowledge" inquiries, insofar as they are intended to have implications for education, aim to uncover networks of related concepts, inferential and deductive structures, and the kinds of propositions proper to each area of knowledge. From these exposed structures the researcher then seeks to discover principles that might help in designing a curriculum. On the face of it this seems a relatively straightforward, though obviously difficult, enterprise. Its plausibility derives from the common-sense observation that in teaching, say, mathematics we will teach addition prior to mathematic forms that require addition plus some further competence. Thus more refined inquiries may seem likely to expose more subtle logically required sequences.

One difficulty this apparently straightforward inquiry runs into almost immediately is that even in the apparently clear case of mathematics, it seems possible to begin building almost anywhere the network of skills and knowledge that accumulate to sophisticated mathematical understanding. That is, the apparent structure of the subject seems not to yield such obvious guides to the sequencing of instruction as at first

appears likely. As Philip Phenix has already made clear, even when we can establish logical priority in a discipline this does not entail temporal priority in instruction (Phenix, p.285).

A second difficulty that becomes plain shortly after the first is that it becomes obvious that any complex field is amenable to a vast number of structural characterizations. What we mean by "logical order" can have a strict meaning only in certain areas of mathematics and even more restricted areas of the physical sciences. What we mean by logical order in, say, history is quite a different matter. It is difficult to discover any set of deductively ordered theories, concepts, and phenomena. We might better follow Kneller's usage and call such structures "pseudological" (Kneller, 1966).

So our search for guidance from logical structures seems to run into problems immediately. We find there is very little that can be said clearly about the logical structure of even the most tightly organized disciplines, and that little carries no or remote entailments for the sequencing of the curriculum. We find also that **the** structure of most disciplines is a mirage. As we come closer the apparent structure breaks up into endless shimmering bits and pieces. Once we concede that there is nothing privileged about any particular structure, we are left with no good reason to infer from any particular structure principles for the sequencing of subject matter. Or perhaps better, we are left with equally good reasons to infer such principles from any structure - which is not quite what we had in mind when we set about the search.

Surely we cannot dismiss a large enterprise so casually. Paul Hirst argues that:

"What is needed is a much more careful examination of what the logically necessary features of areas of knowledge are and, in particular, the extent to which learning a subject involves adherence to what can loosely be called rules of logical order. Once these questions are answered, we can hope to see more useful empirical investigation in this area". (Hirst, 1974, p.120-121)

But why does Hirst think that such questions are answerable? What would the rules of logical order of history look like? What kinds of concepts would they embody? Concepts such as "revolution", "social change", and so on? But the primary stuff of history is the particular - what Alcibiades thought or did or suffered. And even if someone could sketch the rules of the (a) logical order of history, what relevance would they have for education? Hirst seems to think they would provide us with grist for empirical investigation. We presumably take our rules - which we have reasons to think are not securely establishable; infer from these a curriculum sequence - a kind of inference we have reasons to think will be largely arbitrary; and then empirically investigate which sequence produces the best historical understanding in children - a kind of

empirical question which our available methodologies cannot begin to come to grips with.

Perhaps this is unfair. But consider again Whitehead's and Elton's category of romance. None of the things recommended here will uncover, in the structure of history, the student's romantic appreciation of history. It cannot emerge from the structure of knowledge because it is not a part of the structure of knowledge. It is a part of what happens when we use knowledge for human purposes. It can emerge only when we consider education; it cannot emerge when we consider psychology or structures of knowledge separately.

At present, then, there seem good reasons to doubt that the kind of research program that has been going ahead under the name of structures of knowledge and which Hirst proposes, is likely to provide us with principles derived from the structure of a discipline that will guide our construction of the curriculum better than the kind of common-sense or better "educated" principles we have available to our own reflection.

Hirst and Peters (1970), however, argue that the kind of analysis Hirst has performed in establishing the "forms of knowledge" helps to clarify what is or ought to be meant by a general education. Their arguments in favour of width and depth of understanding then allows them to specify rather precisely how the breadth criterion may be satisfied. A curriculum which aims to provide a general education must be organized so as to initiate children into each one of the distinct forms of knowledge.

Hirst's divisions show areas that share distinctive concepts, logical structure, and manners of testing the truth of their claims. He argues that as the different forms of knowledge represent the set of significant ways of knowing, to be lacking in any one or more of them constitutes clear and unarguable gaps in one's experience, and such gaps have to be considered educational deficiencies.

But decisions about the width and breadth of knowledge required for a proper education are made on grounds quite different from any that Hirst's "forms of knowledge" rest on. If we agree that there should be initiation into all forms, it will not be because we are impressed or convinced by Hirst's divisions of the epistemological universe. In this at least we must agree with Robin Barrow (1981) that nothing follows from Hirst's kind of analysis for what the educator should do - however persuasive one might find it. The "forms of knowledge" might provide a usable heuristic for a curriculum designer, but that is quite different from its intended purpose as a principle guiding and constraining the designer to construct a curriculum in a particular way.

**Stages of development: two kinds of attack**

I refer specifically to Piaget's work under the "stages of development" heading because his theory has been most influential in education, both on educational practice and on thinking and research on development. A fundamental assumption of this thinking and research, of Rousseau and Dewey as well as Piaget's, is that there is a natural substratum to cognitive development whose process can be exposed by empirical inquiry, and that conforming with this natural process is one influence which should determine educational prescriptions.

What is wrong with this?

First and most generally, it underestimates the degree to which human beings are cultural animals. Even those appetites and behaviours which we most clearly share with our animal relations have been transformed for us by our language and culture. It is reasonable to assert, in a perverted echo of Ortega y Gasset, that human beings do not have a nature; what we have is a history and culture. There are two ways of using this observation to attack the program of educational intrusions by cognitive developmental psychology.

The first and most extreme argument is to point out that the presumed subject matter of this area of research does not exist. It is not a matter of it's simply being difficult to separate the fundamental natural process of development from the overlay of cultural contingencies. It is impossible, because our nature is absorbed by our culture; we are essentially cultural animals. Methods of inquiry that were developed and are designed for inquiring into natural phenomena are not much good for inquiring into cultural phenomena - and our cognitive development is a cultural phenomenon.

The second and less extreme argument is to argue that while indeed a methodology with the presuppositions underlying the "stages of development" field may turn up some interesting facts about human cognitive development, such facts will be too remote from the proper interest of educators to have any significant implications for education.

**"The topic is not isolable": Prong 1**

The general argument on behalf of the first position is two-pronged. The first prong follows from a close examination of the results of the experiments which yield the data on which the developmental theory in question rests. From the argument that human beings do not have a nature, we will want to show that the data which support the theory are not data about the nature of human development, but are simply descriptive of a particular form of enculturation. So Piaget, for example, claims to have characterized in his theory something that is true about the way human beings develop. If we believe that human beings

do not have a nature, in the sense indicated above, we will begin by doubting that Piaget's claims can be true, and the nature of our doubts will focus our attention on particular areas of the theory. We will focus on those areas which claim to describe invariant developments and those which claim universal applicability.

I do not intend to deal in detail with Piaget's theory here (see Egan, 1983), but I will simply quote the results of some extensive reviews of experimental data. The first obvious area on which our particular doubt will focus our attention is cross-cultural studies. If Piaget's theory describes something natural then it will be true for everyone. But the nature of Piaget's theory makes it unlikely that we will discover straightforward confirmation or disconfirmation of his claims.

He does note that if his claims about the fundamental nature of the mental developments is true, "it would naturally mean a certain constancy or uniformity in development, whatever the social environments in which individuals live". (Piaget, 1976, p.260) The trouble is that it is not clear what findings would disconfirm his theory. That may seem odd, but it needs to be remembered that Piaget's is an odd theory. It is very sophisticated, and complicated, in the way it mixes logical claims and psychological data. Piaget is of course explicit about this, naming his area of study genetic epistemology. As a number of critics have observed, significant parts of Piaget's theory are not matters of empirical discovery but of logical necessity. For example, it is not an empirical matter that concrete operations precede formal operations because the latter are defined as operations that are built on those of the former. That is, the general sequence is guaranteed by logic.

Also, to complicate our expectations from cross-cultural studies, Piaget acknowledges that experience, environment, and social interactions will all affect the rate at which people develop the underlying cognitive structures and will affect the extent to which development will occur. It is not then easy to see where we should look for evidence either for or against the theory in cross-cultural studies. The general uniformity of sequence cannot count as evidence for, because that is guaranteed by logic, and some particular irregularities do not count as evidence against. Add to that the usual problems of cross-cultural studies, and experimental errors, and you can see the problems for the expectation of unambiguous findings.

What we have from cross-cultural studies is support for the general sequence of stages and considerable variation, not to say confusion, within that general sequence. Critical attempts to assess the reliability of Piagetian claims about cognitive development in general yield conclusions such as: "Despite progressive refinement of method aimed at removing from the experimental data all variations due to extraneous factors, the most striking feature of the results of these studies is the degree of inter- and intra-individual variety obtained" (Wallace, 1976, p.16); or "These data suggest that the assignment to a

particular stage seems to depend upon the task used as a criterion, and the implication of structure is that it should not" (Brown and Desforges, 1979, p.106); or "In general, logical task structure does not seem to be a good predictor of behaviour across situational variations". (Smedslund, 1977, p.1906) These and other analyses of data from experimental tests of Piaget's theory lead Flavell to judge "that Piaget's stage model of cognitive development is in serious trouble". (Flavell, 1978, p.187)

What we have, then, is also consistent with - and increasingly supports - the expectations that go with the belief that one cannot separate some natural or essential development from the language and cultural forms in which we become mature.

The importance of this for education turns on the status of the psychological facts from which theories like Piaget's are composed. If they are indeed facts about our nature, then any educational or curriculum prescription must conform with them. If it is true that historical concepts do not develop till mid-teens, then we cannot sensibly prescribe teaching history in elementary schools. If they are facts about our culture, then it is the educator's proper job to shape them, not to be determined by them. If the finding that historical concepts typically develop during the mid-teens is a result of how we teach history we may decide that this is undesirable, and prescribe a curriculum that will ensure that historical concepts develop earlier.

The general point to be derived from this is that one should be very wary of those always simplistic claims that follow the phrase "Research has shown that ...". Educational research has so far shown nothing that is generally the case about learning, development, motivation, or anything else people who design curricula to educate other people might want to know about. What research shows is that in x circumstances with y subjects a, b, and c results at t time were recorded. It establishes things, when done well and very carefully, that are true of some people in some circumstances at some time. At best it establishes facts which are dependent on cultural variables. It is the educator's job to shape cultural variables, not to confuse them with facts of nature which must constrain what may be prescribed.

### **"The topic is not isolable": Prong 2**

Now for the second prong of the argument in favour of the first position (the first position being: we don't have a nature, we have a culture, so an experimental method to discover truths about nature is inappropriate as a tool to investigate culture). In sketching this I draw largely on the work of Jan Smedslund, a Scandinavian psychologist. This prong extends a point made in the first prong (prongs being separate

points coming out from the same stem). This is made up of the argument that educational research involves a confusion of what Smedslund has called "the analytic and the arbitrary."

He argues that the traditional view of psychology, as an empirical science aiming at the formulation of general laws, is a wrong step for psychology. In this program of scientific psychology the researcher attempts to advance knowledge by forming testable hypotheses, subjecting them to empirical tests, reformulating the hypotheses to fit the findings, etc. Smedslund points out that nearly all empirical research which aims at the establishment of psychological theories gains its plausibility by confusing in what it tests both analytic and arbitrary elements.

If, for example, one wants to develop a theory about how one should organize lists in order for people to learn them better one might experiment by having subjects try to learn lists organized in different ways. One might then conclude that ordered lists are learned better than random lists. This as a generalization based on empirical research gains its plausibility from a fundamental confusion of the analytic and the arbitrary.

The analytic component involves the necessary connection between order and learning. A detailed definition of learning would imply notions of order; the structure of the human mind and what is conceived as order are not distinct things. The arbitrary element involves what particular kinds of things count as ordered to any subject. A list of numbers - 8735948 - might be random and difficult for one subject, but be immediately memorized by another because they bear a relationship with a phone number or year of birth. This arbitrary element, stated in a simple way here, is more generally a matter of cultural contingencies. It so happens because of the education or social mores in a particular culture that certain things are put together and so appear ordered. But in other cultures similar connections would not exist.

What makes pseudo-empirical studies seem empirical, and seem as though they are progressing towards more secure theories, is the confusion of these two elements. The analytic components are not empirical matters at all; they are logically connected. The arbitrary matters are only locally true; they are not generalizable. By confusing the two one seems to be establishing empirical connections - the problem is that the bulk of the connection is given by logical necessity.

The point of this argument again is to indicate that the findings of empirical psychology are almost invariably of this pseudo-empirical kind and consequently need have no constraining effects on educators. The analytic elements are matters of logical necessity which may be established and observed quite apart from - and much more clearly apart from - empirical studies. The arbitrary elements are, again, elements which educators can affect; they do not need to be constrained by them.

### Consequences for a history curriculum

Let us return from these theoretical considerations to the example of history in the curriculum. Various studies drawing on Piaget's theory have explored the development of historical concepts in children and adolescents. Many of the concepts fundamental to historical understanding are, in this context, described as formal operational concepts, and experiment has established that these particular concepts typically do not develop till about 14 or 15 years of age. Thus until mid-teens, and even for some years thereafter, students would seem to have only a very limited access to historical understanding. The publication of the results caused considerable stir among history teachers. The results have been contentious, but their influence has tended to support the claim that history should appear in the curriculum later rather than earlier, and something like social studies, which deals in more concrete ways with the more local experience students are familiar with, is more appropriate for the earlier years.

We history teachers may do three (or more) things with the findings. One: accept them as a truth of nature which must be conformed with. Two: based on the earlier arguments, treat them as local findings which are culturally conditioned, and so no constraint on our prescriptions for a new history curriculum. Three: accept them as secure findings about the results of teaching history the way in which the subjects were taught, and use them as an example to avoid (if we do not admire the results, that is).

Our earlier (pronged) criticisms of developmental theories might embolden us to wonder whether these results are truths about human nature, or whether they are contingent cultural matters - due to the kind of stories, reading, and history teaching which the students enjoyed or suffered for preceding years. Are they fairly secure empirical generalizations as some have argued (Hallam, 1969; Elkind, 1976; Schemilt, 1983)? If we doubt it we would immediately look for disconfirming evidence, and indeed we begin to see such evidence appearing (Modigal et al, 1983) - though hardly conclusively.

Is it reasonable to see these results as due simply to bad teaching, or rather to teaching which is uninformed about how to bring children towards a proper historical understanding? Does it make sense to say that nearly all history teaching is bad? There are certainly those who assert this unambiguously (Elton, 1976); and of course this is implicit in our example of Whitehead's requirement that "romance" precede "precision".

What is probably involved is the perhaps excessively respectful acceptance of these results. If we wish to design a history curriculum, and our mind is on history rather than Piaget's theory, the kinds of things that will be of concern will be Vikings, Romans, Industrial Revolutions and so on. That is, we will be dealing largely with content, not the conceptual substratum. Even if we constantly check our developing

curriculum against Piagetian stages in the development of historical understanding, it will be clear that any content can be presented in a variety of ways, none of which need involve concepts which students may not have developed at any particular stage.

But what of Whitehead's stages? If we are concerned with the proper development of historical understanding then we should be sensitive to choosing and organizing content to develop students' romantic engagement during earlier adolescence, and choosing and organizing content that will stimulate precision later. Such concerns will be remote indeed from Piagetian stages. We may be willing to accept Piagetian stages as constraints on what we will prescribe, but when dealing with the design of a curriculum these constraints seem very remote.

### Conclusion

The end of any process determines the kind of stages that are the accumulating constituents of that end. If our end is a psychological one, we will require psychological stages. If our end is educational, we will require educational stages, and these will be quite different from psychological stages. The cost of looking for psychological stages as constituents of education, and as foundational to educational development, is that we substitute psychological matters for educational matters. Thus we measure educational advancement and achievement in terms of the kinds of indices that enable psychologists to answer psychological questions. So in education we confuse "thinking skills", I.Q., ability to answer quizzes, and all the other indices that are common in psychological research, with education.

There is a terrible declension that is perhaps the most significant theme in education during this century and, it seems to me, is the result of psychology's baleful influence on education:

Education is ineffable; educational achievement is ineffable.

We want, for whatever purposes, measures of it, and we want to discriminate between individual children's achievement of it.

We cannot measure the achievement, so we infer something that seems like an index of that achievement.

We measure the index.

We infer that the measurement of the index is a measurement of the achievement.

We teach for the achievement of the index.

Thus psychological means - gross, crude, and educationally insensitive - have become educational ends.

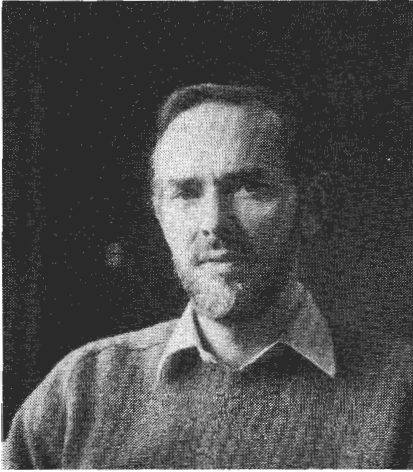
The influence of "stages of development" research is following this process now. We will forget Plato and Whitehead and measure educational development in terms of the development of restricted, psychologically measurable concepts. We will then teach to encourage the development of those concepts.

The search for the structures of knowledge is possibly of epistemological interest. It commits an equivalent educational sin to that committed by psychology. It has been less educationally destructive than psychology, only because it has been less influential (also perhaps because it has tended to be less grossly insensitive to the difference between its phenomena of interest and those of education).

Education is concerned with our development as cultural beings. The study of knowledge - one constituent of culture - separately from our uses and pleasures of it, becomes an educationally arbitrary and sterile activity. The study of psychology and our psychological development apart from those uses and pleasures whose constituents we accumulate in our enculturation is educationally irrelevant. We do not get educational enlightenment by bringing together two distinct educationally irrelevant areas of inquiry. We get educational enlightenment by being able to focus precisely on education; by being able to recognize the difference between psychological, epistemological, and educational questions and by being able to frame and investigate the last kind; and by being bolder in reflecting on our educational experience and in articulating our ideas of education, and in rejecting the pseudo-scientific and pseudo-philosophical mumbo-jumbo that presently dominates what is mis-called educational discourse.

## REFERENCES

- Elkind, David. *Child Development and Education*. New York: Oxford University Press, 1976.
- Elton, G.R. *The Practice of History*. London: Collins, 1967.
- Hallam, Roy. "Piaget and the teaching of history." *Educational Research*, Nov., 1969.
- Hirst, Paul. *Knowledge and the Curriculum*. London: Routledge and Kegan Paul, 1974.
- Hirst, Paul, and Richard, Peters. *The Logic of Education*. London: Routledge and Kegan Paul, 1970.
- Modgil, Sohan, Modgil, Celia, and Brown, Geoffrey (Eds.). *Jean Piaget: An Interdisciplinary Critique*. London: Routledge and Kegan Paul, 1983.
- Phenix, Philip. *Realms of Meaning*. New York: McGraw Hill, 1964.
- Schemilt, Denis. "The devil's locomotive." *History and Theory*. Beiheft 22, 1983.



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# Design and Curriculum Design

## An architectonic view

There are those who might jibe at thinking of a curriculum as a work of art as well as a lot of work. Yet the same people might very well have always accepted the dictum that teaching is as much an art as a craft. Chalmers draws some striking analogies between the undertakings of architecture and the building of curricula, and deliberately exploits the existence of a variety of ideas and practices in the former highly sophisticated field of activity in order to suggest developments that could be fruitful in the practice of curriculum design - a field that surely ought to aspire to an equal sophistication and productivity. Is it strange that in an article on curriculum planning, words like "imagination", "flair", and "aesthetic" should keep cropping up? One would hope that they did, really. It ought to be surprising that they surprise us.

In this paper I introduce a number of approaches to designing, implementing, and evaluating that are commonly used by designers working outside the curriculum field, and suggest that these approaches have value for curriculum workers. I am an art educator with a particular interest in the built environment, and teach an introductory course in curriculum studies. I present these views not in an attempt to be clever, smart, or trendy with metaphor, but rather because I am convinced that art and design as found in architecture can offer the curriculum field insights and directions that are relatively unexplored, and that are perhaps more reasonable than Eisner's models of connoisseurship and educational criticism. Therefore I present in this paper an architectonic view of curriculum, and attempt to show how curriculum relates to and accords particularly well with the principles of architecture.

Architecture is the art and science of building and designing structures - especially habitable ones. It is both an

art and a science. As science, architecture may produce buildings that are strong and practical. As art it may produce structures that are aesthetically pleasing. To suggest that the development, implementation, and evaluation of curriculum is both art and science certainly accords with much current thinking in the curriculum field.

### **Curriculum must be well built**

By way of introduction let us consider three quotations on architecture in which I have replaced the words "building" and "architecture" with the word "curriculum":

"A (curriculum) must meet the following standards to qualify as (good curriculum): it must conveniently serve the purpose for which it was built; it must be structurally sound; and it must be beautiful."

Marcus Vitruvius Pollio

"A (curriculum) serves three purposes: to meet the social and economic needs of living, to delight the senses, and, last but not least, to symbolize all that men aspire to hold and to command."

George Howe

"Good (curriculum) is always a perfect expression of the time in which it is built, not only of that time's artistic skill but also, if it is interpreted correctly, of its religion, its government, even of its economic and political theories."

Talbot Faulkner Hamlin

A recent key work on the elements and principles of architecture from which these quotations are drawn (Information Design Inc., 1982) suggests that the practice of architecture "includes defining problems, evaluating alternatives, and implementing solutions". (p.2) The same source lists other key points that architecture shares with curriculum:

"It involves forging effective compromises between divergent demands, and it means setting priorities by determining relevancy."

"It requires a fusion of interconnected and interrelated areas. When one area is affected, all others are likewise affected."

"It takes on different forms, depending on its physical, historical and cultural environment. The purpose of architecture is to produce an aesthetically pleasing structure within functional restraints."

"It is built on a historical framework which has been evolving

from the beginning of civilization."

"It evolves as mankind's cultural expectations and technological innovations evolve."

"It must be experienced to be valid; each person reacts to a particular design in a unique way."

"It is a human activity that must make humane decisions."

"It is used by living human beings, with all their needs, wants, habits, frailties and inconsistencies. The success of an architect's work can be judged only within the human context."

"An architect's goal is the synthesis of a multitude of diverse elements into a cohesive, structural whole. He or she takes abstract ideas and helps turn them into real form. An architect solves problems". (pp.2-3)

An architect must work under environmental and human constraints to create a building in its total context. This might mean working under imposed financial limits, but still finding optimal building solutions. An architect, like a curriculum worker, needs to be farsighted: his or her structure will continue for many years into the future. Similarly an architect works with and is often the team leader of many others. An architect, like a curriculum worker, must have a wide range of abilities, including (metaphorically) drawing and sketching, visualization, understanding of the building process, knowledge of materials and their forms and functions, as well as a good head for details and a sense of appropriateness; persistence; ability to work under pressure, to get along with people, to supervise others; and flair and imagination.

### **What is design? Common elements**

The Concise Oxford Dictionary defines "design" as a noun in many ways; as a verb the dictionary definition is also diverse, but not ambiguous. "To design" can embrace the activity and products of the architect, the engineer, the craftsperson, the decorator, and the artist. A machine, a system, a publication, a sculpture, an electrical circuit, an experiment, and a curriculum can all be designed. "A design" implies some form, structure, pattern, or arrangement for a proposed thing, system, event, or method. It is a product of judgment and invention as well as of knowledge and skill. Penny Gouldstone, a University of British Columbia colleague who teaches design courses, distributes the following sheet (original source unknown) to her students. It might also be distributed to and discussed by students in curriculum development and evaluation classes:

Figure 1

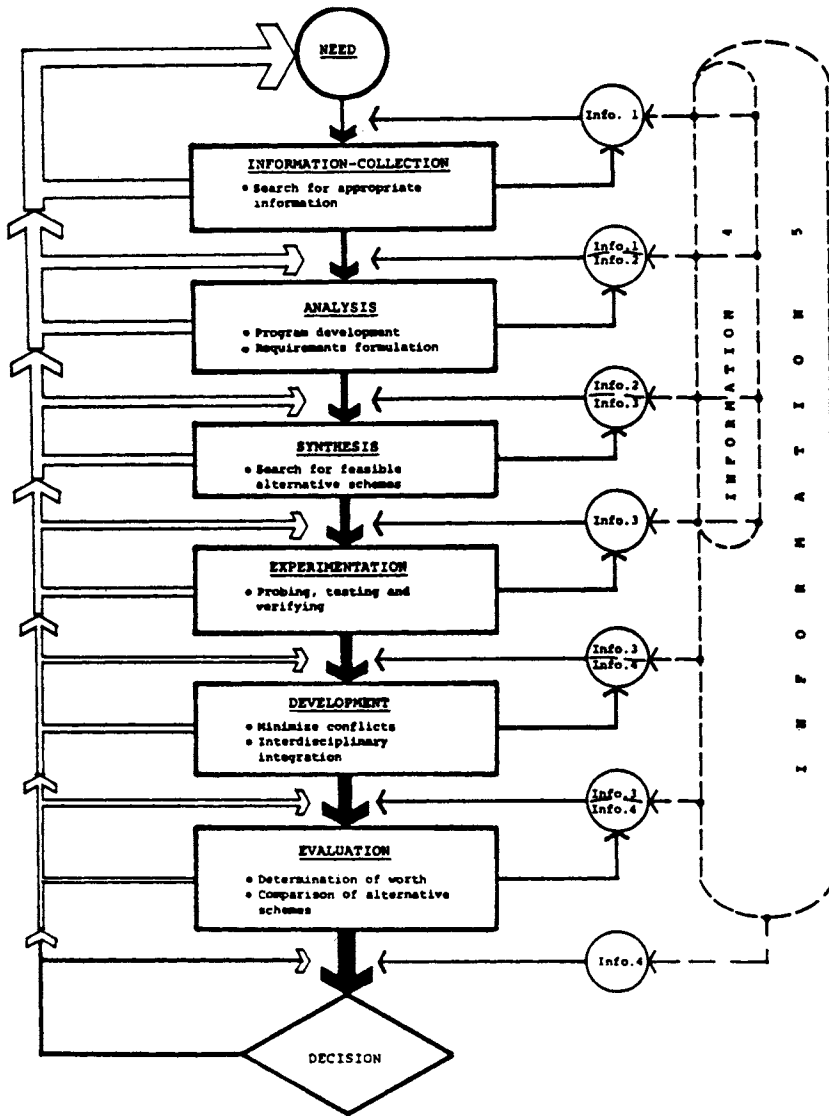
**DESIGN**  
 initially depends on  
**LOOKING**  
 training the eye to  
**SEE**  
 to absorb appearances  
 to be alert and sensitive in  
**RECOGNISING**  
 the elements of design  
**CONTRAST - HARMONY**  
**RHYTHM - BALANCE**  
 in  
**LINE - SHAPE - PATTERN**  
 in order to  
**CHOOSE**  
 and  
**ORGANISE**  
 for a purpose

In the curriculum field we already have workers (primarily Eisner's students) who have tried to see and to evaluate curriculum, instruction, and curriculum materials from the point of view of the elements and principles of design. Curriculum developers should have little difficulty with a definition of designing proposed by a working party of the British Design Council in 1980. Designing is seen by this group as "the process of seeking a match between a set of requirements and a way of meeting them, or finding an acceptable compromise". (Keith-Lucas, 1980, p.4) The continuation of the definition should be of particular interest:

"Often the process involves working from both ends, that is between requirements and possible solutions, with as much effort being devoted to the constructive reinterpretation of the design requirements as to the creative development of a solution to them". (p.4)

Just as some scholars in the curriculum field may criticize and wrestle with approaches to curriculum that are seen as too artistic, so too may architects and planners. Recently a special issue of a journal devoted to exploring the relationship between science and architecture dealt with what is called "fuzzy sets" in architecture and building. In a somewhat parallel fashion to curricularists' arguments for "expressive" or "type three" objectives, the authors of the five papers in the Architectural Science Review admit that a degree of "fuzziness" accompanies complex architectural problems, and they try to show how it is feasible to develop "objective" mathematical models which

Figure 3

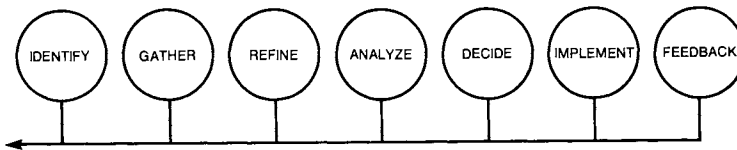


include subjectivity, through the use of fuzzy sets. They touch on mathematical procedures, and seem, according to their authors, "to show promise of bridging a gap between quantitative and qualitative statements and reasoning". (Brown & Yao, 1982, p.70)

#### Four approaches to design process

Curriculum workers can find many implications for their own work in the models of the design process presented by architects, industrial designers, and planners. There follow four such approaches to design. The first (Figure 2) is presented by a team of architects with more than fifty years of combined professional work in architecture:

Figure 2



The second (Figure 3) is presented by a professor of architectural engineering.

A third approach is represented in their book *Idea as Model* (1981) by Pommer and Hubert, who state that

"Design is reading. Design is rewriting existing architecture. Design is transforming existent types ... Design implies a dialectic between the new in relation to the **memory** of the old. But design is also a **production** of meaning, the transformation of the old into the new; the mutation of the known into the unknown."

In addition to designing new buildings and environments, architects renovate, refurbish, rehabilitate, convert, improve, and repair. It seems that this is what often happens to curriculum prepared at the provincial level, when it is being implemented at the district or local level. It is amusing to compare curriculum with these illustrations, showing what might happen to Chartres Cathedral in different hands.

Figure 4



# CHANGE AT CHARTRES

The tourist view of Chartres is transformed beyond recognition by Alain Barandart in his book *La Cathédrale de Chartres dans tous ces états*.<sup>\*</sup> After rehearsing several responses, starting with arrival on the 13.52 train primed with information gleaned from a guidebook, he asks, 'Why remain trapped with sagging jaw and

glazed eyes?'. He then sets about the metamorphosis of the cathedral in 62 annotated photomontages in various categories (symmetrical, economical, analogical, homogeneous, repetitive, utilitarian, ecological) and a historical fantasy which should make even the most brazen authors of glossy brochures blush.

- 1 Chartres Cathedral.
- 2 'Palais des expositions'.
- 3 'Adaptation baroque'.
- 4 The erosion after the Ice Age etched enigmatic forms of great precision. . . .
- 5 (facing page) 'Carlton-Hilton'.
- 6 It was not until the Restoration that the cathedral was rebuilt in a more stripped down and resolutely modern style.
- 7 Corbelled cathedral.

<sup>\*</sup>Published (in French) by Editions Denoel, Paris. ISBN 2 207 227306.

The fourth approach is a set of questions, formulated by an industrial designer, which lead us directly into another aspect of architecture and curriculum: buildability or implementation.

Figure 5

Questions to be asked by a design team

QUESTIONS ABOUT PRODUCT	SOURCES OF ANSWERS
Will the sponsor like it? Is it in his interest to invest in it? Will it be put into effect?	Sponsor and financier.
Does it make the best use of available materials and components?	Suppliers.
Can it be made cheaply enough with available resources?	Producers.
Can it be distributed through available channels?	Distributors.
What appearance, performance, reliability, etc. is required?	Consumers and sales organizations.
To what extent will it be compatible with, or competitive with, other products?	Other sponsors.
To what extent will it restructure the existing situations to create new demands, opportunities and problems?	Large scale system operators.
To what extent are its effects, and side-effects, acceptable to all concerned?	Political institutions and pressure groups.

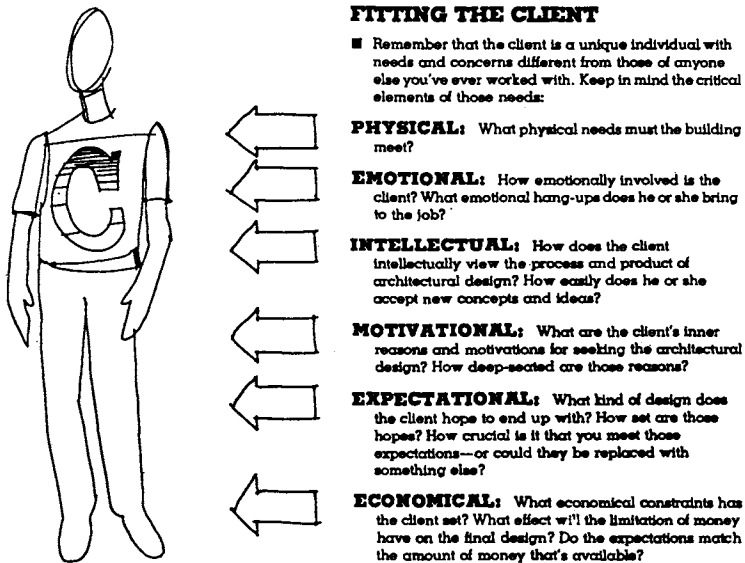
(Jones, 1970, p.8)

In a recent issue of the Architects' Journal we find this:

"...If architects made their designs more 'buildable' they would get more jobs, the environment would benefit, clients would be happier and the old confrontation between architect and contractor which is still with us might be replaced by a common determination to build better". (Allsopp, 1983, p.29)

Figure 6, prepared for students of architecture, would seem to have equal relevance for those concerned with curriculum.

Figure 6



It seems reasonable that architects and curriculum workers both need considerable contact with their clients, and need to establish rapport and credibility to convince the client that they can fulfill expectations with understanding and commitment. They need feedback.

Another "buildability" implication for curriculum may be found in the types of construction communication used by architects: detailed floorplans, schedules, site plans, diagrams for foundations and footings, framing instructions for the horizontal assemblies, sections to help visualize spatial relationships, elevations, utility plans, details, and specifications as given to the construction workers who will transform the idea into actuality. For example, rough sketches, quick models, renderings, presentation models, and slide presentations are all

techniques used by architects and planners to "flesh out" floor plans and schematics.

### **Evaluation by aesthetics, logic, meaning - and postoccupancy**

Traditional architectural criticism has had as its main focus aesthetics. But in architecture, as well as in those scholarly criticisms of the work of some of Eisner's students, the aesthetic is being increasingly seen as only one of many design elements affecting users of buildings. For example, if we return to the Chartres Cathedral image, an article in *Scientific American* alerts us to the fact that although it is Chartres that has been traditionally extolled as the better piece of architecture, Bourges is the better piece of engineering (Mark, 1975).

In our field there are those who approach curriculum theory through philosophy, and in planning and design theory the use of formal logic is receiving increased attention. In *The Educational Imagination* (1979) Eisner suggests that the legal advocate might be a model for the curriculum worker, but he does not develop this idea, preferring instead to focus on the critic and the connoisseur. To get some idea of how formal logic could be used in planning I looked at a study that submitted the concept of desirability to logical reconstruction (Baljon, 1982). This study gives examples, particularly in the area of goal statements, of how a lack of formal logic in planning theory can be found in the way in which all kinds of irrationality or incomplete rationality emerge from "common-sense" notions of planning. Baljon talks about both linear and non-linear planning processes, and could, in fact, be addressing curriculum developers, implementers, and evaluators rather than planners.

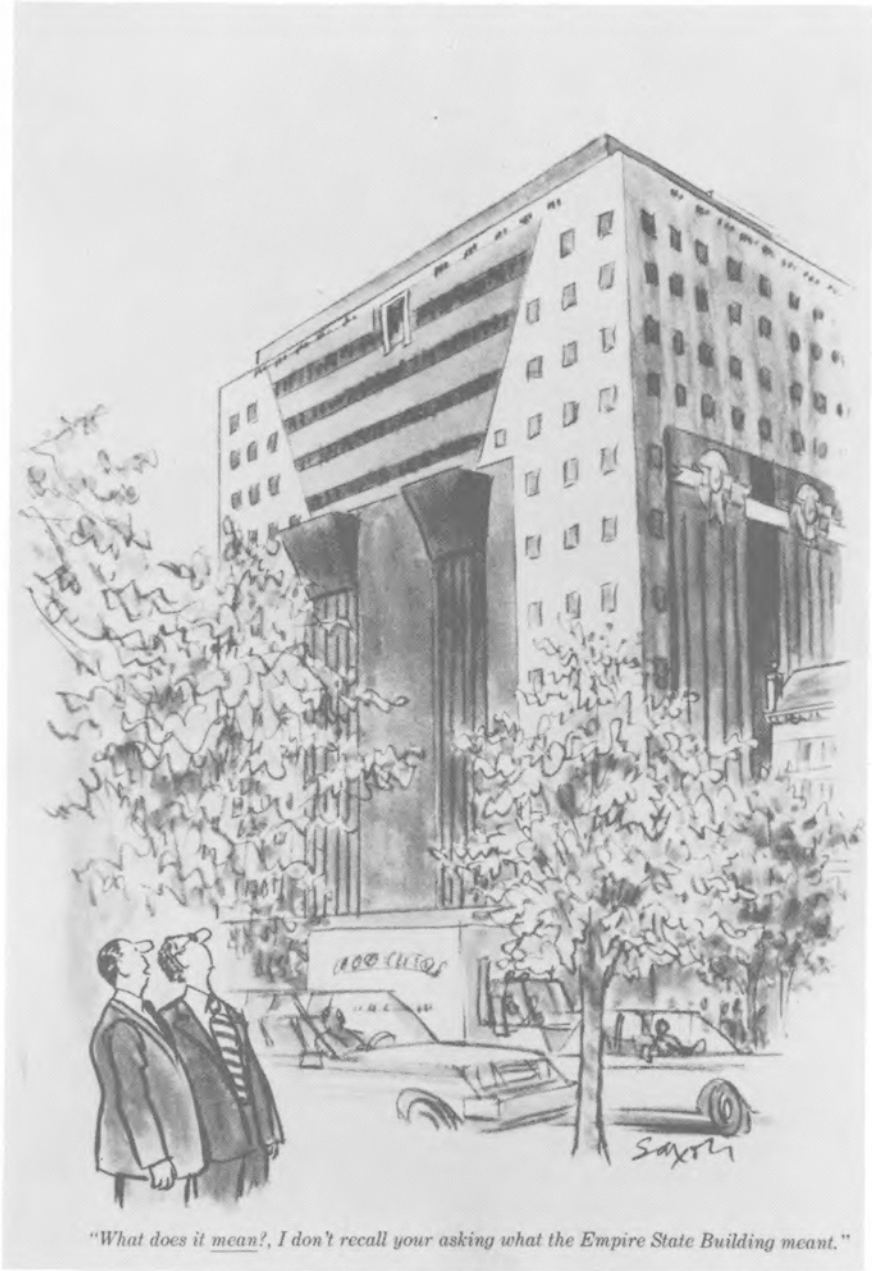
Sir Christopher Wren wrote:

"Architecture has its political use, public buildings being the ornament of a country; it establishes a nation, draws people and commerce, makes people love their native country."

The study of meaning (semiotic inquiry) has potential for both curriculum and architecture, as we seek to determine the meaning of those things that we have built and the structures (curricula) that we are presently building. That semiotic inquiry in architecture is becoming more important is indicated by the cartoon in Figure 7.

Of particular interest to curriculum workers in the architectural notion of postoccupancy evaluation. To date, postoccupancy evaluations have focussed primarily on the impact of designs on users. Zimring and Reizenstein (1981) suggest that postoccupancy evaluations can be more clearly understood if they are compared to familiar notions of architectural criticism. A critic may visit the site, examine photographs, or

Figure 7



*"What does it mean?, I don't recall your asking what the Empire State Building meant."*

look at other buildings by the same architect; but the methods depend on the individual approach of the critic. By contrast, postoccupancy evaluations use systematic, often quantitative, as well as qualitative methods of investigation to gain a valid picture of the users' views of the building. Evaluation methods are described fully in *Inquiry by Design* (Zeisel, 1981) and in *Environmental Design Evaluation* (Friedmann, Zimring, and Zube, 1978). Of particular interest for curriculum evaluation are Friedmann, Zimring, and Zube's views that a postoccupancy evaluation has five elements: the users, the building itself, the socio-historical context, the design process, and the neighbourhood. They stress that "users" don't just live or work in the building - they may simply be passersby. The building is described in terms of size, cost, and materials, but also in terms of other qualities important to users like noise and visual privacy. The socio-historical context describes the broad forces that influenced the building's design, such as social pressures for energy efficiency. Postoccupancy evaluations generally describe who made the decisions and help us to understand various people's roles in determining the final "shape" of the building. Finally the neighbourhood is considered. How does the building "fit"? Aesthetically? Socially? How does the building affect neighbourhood pride and self image?

### Conclusion

Of necessity this paper is very general, and I have only touched on a few of the many architectural implications for curriculum studies. It is tempting, for example, to seek to find metaphorical relationships with curriculum in such common building systems as the flat truss, tensile, frame, post and beam, and vaulted systems.

At the end of my curriculum class I show Figure 8 to small groups of students. This is a costume for a nineteenth century architect. The students' task is to provide a costume for a contemporary curriculum worker. The result invariably has several hats, and fingers in many pies. It may be a marionette, with stakeholders pulling strings. Sometimes the character is skating on thin ice. But setting aside the humour, there is a graphic concern with demonstrating how functional, economic, aesthetic, social, and ethical considerations are interrelated, and important.

If the architect can teach us anything, he or she can lead us to a better understanding of the broad parameters of design; can help us appreciate the challenge of using both art and science to build habitable curriculum; and can help us realize the importance of visual, verbal, and three-dimensional communication in the design of curricula and curriculum materials, in their implementation, and in their evaluation.

Figure 8



## REFERENCES

- Allsopp, K. "Buildability: an architect's view." *The Architects' Journal*, 1983, 177(4), 29.
- Baljon, C.J. "Formal logic in planning." *Design Methods and Theories*. 1982, 16(4), 177-194.
- Brown, C.B., and Yao, J.T.P. "Instructions and opinions: The use of fuzzy subjectivity." *Architectural Science Review*, 1982, 25(3), 70-74.
- Eisner, E.W. *The Educational Imagination*. New York: Macmillan, 1979.
- Friedmann, A., Zimring, C., and Zube, E. *Environmental Design Evaluation*. New York: Plenum, 1978.
- Information Design Inc. *Notes on Architecture*. Los Altos: William Kaufmann Inc., 1982.
- Keith-Lucas, D. et al. *Design Education at Secondary Level*. London: A Design Council Report, 1980.
- Mark, R. "The structural analysis of Gothic cathedrals." *Scientific American*, 1975, 227(5), 90-99.
- Pommer, R., & Hubert, C. *Idea as Model*. New York: Rizzolli International, 1981.
- Zeisel, J. *Inquiry by Design*. Monterey: Brooks/Cole, 1981.
- Zimring, C., and Reizenstein, J. "A primer on postoccupancy evaluation." *AIA Journal*, 1981, November, 52-58.

## Figures

Figures 2 and 6

Information Design Inc. *Notes on Architecture*. Los Altos: William Kaufmann Inc., 1982.

Figure 3

S.J.Y. Tang. "Language and architecture." *Design Methods and Theories*, 1982, 16(3).

Figure 4

"Change at Chartres." *The Architects' Journal*, 1983, 177(2).

Figure 5

J.C. Jones. *Design Methods: Seeds of human futures*. London: Wiley Interscience, 1970. Reprinted by permission of John Wiley and Sons. Ltd.

Figure 7

*Architectural Record*. 1983, January. Reprinted by permission of Charles Saxon. Copyright 1984.

Figure 8

D.G. Emmerich. *Course in Constructive Geometric Morphology*. Seattle: Department of Architecture, University of Washington, 1970.



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**"Ezekiel"**  
Helaine Tecks

## “Madness with a Method”

### On humanistic metaphors and educational research

When metaphors from the arts are applied to studies in education they can have a startling and exhilarating effect on those for whom the time-honoured approach of the social sciences seems to have rather missed the point. Did we not use to say that teaching was an art? And a metaphor in any circumstances (before it becomes a cliché) has the potential of bringing to bear on a topic the several benefits of clarity, force, and grace. But, Milburn warns, these rhetorical effects have their temptations and their dangers, as the few writings on curriculum that use humanistic metaphors have begun to show. Some polemicists have yielded to the temptations; and others need to become aware of the dangers of new metaphor both in logic and in practicality, for there can be deep-seated resistance among practitioners to ideas emanating from the fine arts.

In recent years, a few educational researchers have shown interest in the application of humanistic metaphors to educational research. Such an approach to educational research, it is argued, is distinctly different from the social scientific approach that has dominated educational investigations for a half-century. There exists a small but significant number of general discussions of the principal issues in the use of humanistic metaphors, and a growing number of empirical studies, largely based on thesis work, that attempt to put the general discussions into practice (Eisner, 1979, and Willis, 1978). Since this work is relatively new, and the sources comparatively scattered, critical comment on the new approach is far from advanced - indeed, the review articles currently in the literature may be counted on five fingers. The purpose of this article is to point out a few arguments and practices in the body of this new work that require further thought or more detailed investigation. It is, in short, a survey comment on the state of

the art in the use of humanistic metaphors in educational research (Milburn, 1983a,1983b).

What scholars interested in alternative metaphors have tried to do is clothe educational research procedures and methods of reporting with understandings, approaches and procedures derived from disciplines other than those in the natural and social sciences. Given Eisner's observation that "the forms of art, as well as the forms of science, afford unique opportunities for conceptualization and expression" (Eisner, unpublished), scholars have examined such disciplines and related fields as drama (Gehrke and Bravmann, 1981), theatre (Grumet, 1978), music (Eisner, 1983), architecture (Chalmers, 1983), journalism (MacDonald, 1976, and Barone, 1980), and literary criticism (Kelly, 1975), to locate sources for alternative metaphors for examining educational phenomena.

In that process, roughly the same pattern has been followed by all researchers. First, the original source is examined for understandings or concepts that have a presumed capacity to throw light on matters educational. Thus from journalism (MacDonald), for example, such notions as "scene-by-scene construction," and the "symbolic detail of the subject's life," or from literary criticism (Kelly) such concepts as "plot" and "theme", have been transferred from their original humanistic homes to educational settings in order to cast a different light on objects of study. Secondly, some researchers have attempted to locate particular methods of reporting, or even specific styles of writing, that have been developed within the humanities, and to use them within educational settings. Thus Vallance (1975 pp.134-138), for example, identified certain methods of expression, such as "implied technique", "implied movement", and "overlapping adjectives", that she claimed were not only typical of art criticism, but also appropriate for descriptions of educational situations.

In a previous article, I suggested - perhaps somewhat rashly - that a kind of "open season" had been declared on the humanities, with scholars hunting through either the broad field of aesthetics in general, or the narrow fields of particular disciplines, to locate metaphors to apply to education (Milburn, 1983b).

Some scholars have already pointed to features within the arguments for the use of new metaphors that call for clarification and discussion (Gibson, 1981, Pecover, 19883, Pratte, 1981). Indeed, sufficient comment has been made on the body of theory that has been developed to justify the use of alternative metaphors, that a second stage in the development of the new paradigm - the emergence of a body of criticism - may already be upon us.

### Problems with the sources of metaphor

The first difficulty that may be identified is the relative paucity of actual examples of curriculum evaluation that uses the new metaphors. Although new studies are appearing with some regularity, the total is not large; and the relationship between the print expended on theoretical justification on the one hand, and on actual classroom study on the other, has already attracted attention. The "adherents" of these new approaches, observes Vallance (1981, p.6) - not by any means an unsympathetic critic - "talk to each other a lot, not necessarily talking to teachers or even doing much criticism." This shortage of actual examples that can be scrutinized with some care by other observers has taken discussions on the use of new metaphors away from the metaphors **in action** back towards metaphors **in theory**. While the latter is no doubt necessary, it is a dangerous focus for critical comment in a field such as educational research which has some pretensions to be an applied art.

The problem is exacerbated by the fact that most of the examples that have appeared thus far in the educational literature are derived from a particular segment of the humanities, the fine arts, influenced no doubt by the pioneering work of Eisner and his students. Despite the usefulness of the examples that are available for scrutiny, they are thus not only few in number but significantly skewed towards a particular image. It is scarcely surprising then that some early critics of the use of new metaphors may be perceived as having a limited vision of the ultimate possibilities of the new approaches that are being advocated.

More important, however, is the argument that those who have attempted to use alternative metaphors in educational research have not been sensitive to some of the difficulties that are logically inherent in the intended operation. Metaphor-making has a lyrical - perhaps even heady - quality about it (note Goodman's remark that "in metaphors, symbols moonlight", 1979) but poetic vision is no substitute for rational and reflective analysis. In his study of the nature of metaphor, Black reminded us over twenty years ago that "understanding a metaphor is like deciphering a code or unravelling a riddle". (1962) He reminded his readers of the old adage, "Whereof one can speak only metaphorically, thereof one ought not to speak at all". (Black, p.25)

Building bridges for the purposes of metaphor-making would be more feasible if the foundation from which the bridges commence is more or less on firm footing. That cannot be taken for granted. Given the intention, for example, of examining educational phenomena through the eyes of "literary criticism", it is worth emphasizing that literary criticism exists in a very great variety of forms. One commentator has pointed to what he labels the "competing schools" that exist: "marxism, structuralism, new criticism, hermeneutics, deconstruction,

formalism, archetypalism, receptionism, transactionism...," each one of which supplies its own system of discourse and method of reporting and consequently could be used as a basis for metaphor-making (Gibson, p.197).

The same argument may be used for "drama" and "art". In my own work, I have attempted to show how a variety of metaphors may be drawn from the many fields of drama (Milburn, 1983b pp.10-14), ranging from the suggestions made by Aristotle down to such contemporary theorists as Beckerman. Another commentator, however, in pointing out the significant differences that exist between formalist, expressionist, and marxist views of art, maintains "that no consensus exists as to what exactly art is, or how it should be judged". (Pecover, p.5) Her conclusion, incidentally, is devastating: "art therefore seems to be a strange choice for an analogy with a non-traditional approach to curriculum. The result is indeed... often nothing more than loose and pointless talk". (pp.5-6)

The possibility then of the existence of an enormous variety of interpretations within the many humanistic disciplines needs to be recognized by investigators. If, indeed, it is true that a great number (perhaps even hundreds) of metaphors may be drawn from the many humanistic disciplines that are conveniently at hand, then some criteria for the selection of this metaphor rather than that need to be identified. Thus far, there is little evidence of that task being undertaken.

### **Problems with the transfer of images**

A second difficulty is connected with the nature of the image that is transferred from the original source to the educational matter under study. It is by no means certain what particular set of understandings is indeed transferred. When we say, for example, that a "politician" is a "shooting star", we have certain features in mind; some (e.g., that the politician's rise has been swift) are transferred, and others (that the politician actually consists of sidereal solids) are not intended to be transferred. This particular metaphor is commonly used and widely understood. The process of transfer is more complex when a metaphor such as "man" is "wolf" is used; in this case, the intended qualities to be transferred (e.g., that man is a wilful predator) may not be the actual properties of the feral creature. But no harm is done, because in this case again, the nature of the particular qualities intended to be transferred is well-known to both originator and receiver.

There are several reasons for thinking that the transfer of understandings from humanistic sources to education may not be as easy as the transfer from "politician" to "shooting star". Suppose, for example, we wish to treat "teaching" as "drama". Of the entire range of possible definitions of drama, which one is intended in any given case? Even if one particular source is identified, say a theorist such as Aristotle or Langer, which

particular parts of the theory are to be transferred to teaching, and what reasons may be offered for such a choice? Unlike the case of "man" and "wolf", there is no set of understandings deep within the culture to give guidance to both the originator and the recipient. The originator of a metaphor cannot assume that the particular understandings he intends to convey - what have been called the "commonplaces" of the metaphor - will, in fact, be conveyed.

There is some evidence - both logical and empirical - that the acceptance of images from the humanities by practitioners in education is likely to be imperfect. As Turbayne (1962, p.18) has indicated, there are no metaphors per se: a "plain man" may only see in Descartes' "machine of man" the literal truth; only the initiated, "aware of the 'gross original' sense, as well as the now literal sense", may perceive the metaphor. At least one critic has already observed that the notion that "curriculum" may be conceived as a "work of art" sounds to him "pretty strange". (Gibson, p.192) In the prevailing pattern of teacher assessment the categories and methods of procedure based on the social sciences are generally accepted; reluctance to accept an alternative system built on entirely different principles is predictable. One researcher (Vallance, 1975, p.204) has reported that a group of secondary-school teachers "could identify no situations" in which her reviews based on an artistic metaphor "would be particularly helpful." In my own work (1983b, pp.17-18) with the derivation of a dramatic metaphor, I concluded (on the most fragmentary evidence, it is true) that comprehension of any alternative metaphor was likely to be very limited indeed unless the grounds for such comprehension had been prepared very carefully.

Such arguments are not necessarily insurmountable. It may be possible to introduce on a systematic basis many of the alternative approaches that have been suggested by researchers using humanistic metaphors. But it is likely that the introduction of these new approaches will be accompanied by significant alterations in current practices in teacher-training or graduate institutions. If it is true that educational change can only be accomplished by intervention with teacher beliefs (Fullan and Park, 1981, p.9), then the intervention over the long term may have to be both extensive and dramatic. In other words, even if it can be demonstrated that the transfer of alternative metaphors will have certain desirable results, the current approach to educational evaluation may be deep-seated enough to resist the recommended changes.

### **The credibility of the results**

A final difficulty is located in the examples of evaluation that have so far appeared in the literature - admittedly relatively few in number. Two problems appear to have surfaced (whether fairly or not is not the issue): first, the

credibility of the written prose of the evaluations that have thus far appeared; and secondly, the academic role of the writer of such evaluations.

Educators at a variety of levels seem unwilling to accept the type of prose or sorts of judgment that result from the enterprise, however well justified in theoretical terms that prose or those judgments may be. In her discussions of art criticism with a few secondary-school teachers, for example, Vallance (1975, p.204) reported that they "disliked the colorful language and interpretive adjectives." This type of comment has been expressed in more forceful terms by an observer at the university level, commenting upon one of the major collections of such humanistic reviews that have thus far appeared in print. Much of what he read Gibson (p.199) characterized as "painful to read," self-centred, grandiloquent, artificial, over-drawn, and full of dubious images, flashiness and one-line put-downs (pp.199-206). "Such overdramatisation and grand analogies are invariably the mark of poor criticism. It assumes that the invocation of great names, transcendental themes, superhuman stories, will cause the mantle of literature to fall on weak writing". (pp.202-203)

The following extract (Eisner, 1979, pp.240-241) was written by an observer reflecting on his journey to a school, prior to visiting a classroom:

"As I drive past, I wonder about the people in these lavish houses with their redwood paneling and their thoroughbred stallions in the adjacent fields. What are they like? How do they live? Do they balance their lives as effortlessly as they have balanced their houses on these hills? Do they ever stroll through their woods and sniff the honey-colored air and listen to the California mist as it steals softly over the hills? Or do they gaze straight ahead, like their houses? What distances do they maintain from whomever might be their friends? Does each wrap his arms around his life to insist that it is his alone? What is it about them that the world has chosen to reward in a manner such as this? What did they need to learn in order to secure their sumptuous perches on top these hills? And most of all, because I am a teacher, I wonder what kinds of lives they desire for their children."

Certain phrasings immediately attract attention: "their thoroughbred stallions in the adjacent fields," "Do they gaze straight ahead, like their houses?", and "What did they need to learn in order to secure their sumptuous perches on top these hills?" As a sociological comment on that particular neighbourhood, the passage is not lacking in clout; the specific location of that type of social interpretation is not difficult to pin-point. But there is no hint of a reason why such language should be appropriate to the particular educational situation. Such a reason may yet be provided, of course, but the point is that thus far it has not been offered - we are left only with

the reviewer's particular focus. "The validity of curriculum criticism," Gibson (p.207) observes rightly, "involves rigorous examination of the relationship between language and what it describes."

After examining the reviews that have been written by those who advocate the use of humanistic metaphors, a number of commentators have expressed some concern about the academic position adopted by the reviewers. Most of the examples have appeared to be highly critical of the pattern of education in North America. "What smacks of the traditional," one observer has argued, "is given an unflattering connotation". (Pecover, p.8) Note the following extract. (Eisner, 1979, pp.229-230)

"This classroom is almost a caricature of the society.

The curriculum is served up like Big Macs. Reading, math, language, even physical and affective education are all precooked, prepackaged, artificially flavored.

The arts are valued here as they are valued in a larger society. The teacher states simply, "They are not one of my priorities."

Teaching is orderly; learning is ordered. Page 47 always follows page 46. Short-vowel words are spelled before long-vowel words. Discussion of simple feelings precedes discussion of more complex ones.

Each day is remarkably like the day before and the day after. The school year seems to have been made with 174 pieces of carbon paper. The same things are done at the same times in the same ways in the same books. Only the pages change."

Of course, one could argue that the accepted way of doing things in North America **ought** to be subject to adverse criticism, but if that is indeed the case, the criteria used for criticism ought to be fairly well articulated. Such critical comment ought not a **priori** to assume that the existing pattern of things is wrong, or that the system needs massive overhaul. In other words, humanistic criticism should not be, nor appear to be, ideologically loaded.

The attitude of a reviewer towards a practitioner needs particular care. Given the skill and expertise of the reviewer, there is a danger that he will perceive himself as being in a somewhat superior position to the teacher in the classroom (Elbaz and Elbaz, 1981, p.117), or a person whose judgments are necessarily to be preferred to those of the teacher. In other words, the nature of the authority to be exercised by humanistic reviewers has not yet been subjected to sufficient scrutiny, and the weight that ought to be given to their judgments has not yet been adequately assessed.

On this question of the credibility that may be attached to humanistic reviews, a number of observers have pointed to an essential difference that exists between reviews in the arts on

the one hand, and reviews in education on the other. It is often possible to check the reviewer's comments on a painting or a novel by referring to the actual object itself. "In art criticism," Pecover writes (p.8), "we are able to check our own experiences against that of the critic." In many educational situations, especially in the assessment of teaching, the phenomenon can only be created once, and no public referent exists. In consequence, when humanistic metaphors are used we are unable to corroborate in the traditional sense the content of any particular critique of teaching. As Pagano and Dolan indicated (Pagano and Dolan, 1980, p.374), "no 'public forum' exists for the adjudication of the validity of the connoisseur's observations and consequent praises or complaints."

### Conclusion

The problems encountered in recent work in the application of humanistic metaphors to educational situations are important. We tend to be long on rhetoric about the fruitfulness of such an approach - itself a signal for caution and restraint, given the track-record of educational ideas - but very short on actual examples. The number of studies in my own field of history and social studies is almost nil. Many of those writing in the field do not appear to have taken a sufficient reckoning of the nature of metaphor, of its inherent absurdity, and of its selective nature. In particular, the type of transfer between original source and educational phenomenon that characterizes the process does not appear to have been subjected to careful scrutiny. Even when the process has been completed, important problems remain in the justification of the types of language that have been used in conducting such studies, and the role of the evaluator appears to be subject to dispute. Given this list (which covers almost every aspect of the enterprise), it is impossible to avoid the conclusion that the search for humanistic metaphors to supplement (or perhaps even replace) traditional social scientific approaches has got off to a very rocky start.

Despite the difficulties that have been outlined in this paper, it would be unwise to announce or assume the demise of attempts to write about educational research in humanistic terms. The task is enormously complex. It involves discussing the principles by which research is to be undertaken, and also examining specific techniques in practice. In the course of that discussion roadblocks and controversies are to be expected. Solution of those difficulties may well be eased by a willingness to accept the limitations as they appear, and a capacity to acknowledge and discuss comments that are adversely critical of the work that has so far been done. In short, let's take care with the "method" when we indulge in the "linguistic madness" of alternative metaphors.

**NOTE**

An earlier version of this paper was read at Simon Fraser University in November 1983. The quotation in the title is taken from Brown, 1977, p.82. I am grateful for the helpful comments of Robin Barrow, Richard Courtney, Roger Simon and Joel Weiss, and for the secretarial assistance of Mrs. M. Hamilton.

**REFERENCES**

- Barone, T.E. "Effectively Critiquing the Experienced Curriculum: Clues from the 'New Journalism'." *Curriculum Inquiry*. Vol.10, No.1 (Spring, 1980).
- Black, M. *Models and Metaphors: Studies in Language and Philosophy*. Ithaca, N.Y.: Cornell University Press, 1962
- Brown, R.H. *A Poetic for Sociology: Toward a Logic of Discovery for the Human Sciences*. Cambridge: Cambridge University Press, 1977.
- Chalmers, G. "Design and Curriculum Design, Implementation and Evaluation: An Architectonic View." *McGill Journal of Education*, Vol.19, No.2 (Spring, 1984).
- Eisner, E.W. "Educational Connoisseurship and Educational Criticism: Their Forms and Functions in Educational Evaluation." Unpublished paper, n.d.
- Eisner, E.W. "The Art and Craft of Teaching." *Educational Leadership*. Vol.40, No.4 (January, 1983).
- Eisner, E.W. *The Educational Imagination: On the Design and Evaluation of School Programs*. New York: Macmillan, 1979.
- Elbaz, F. and R. Elbaz. "Literature and Curriculum: Toward a View of Curriculum as Discursive Practice." *Curriculum Inquiry*. Vol.11, No.2 (Summer, 1981).
- Fullan, M. and P. Park. *Curriculum Implementation: A Resource Booklet*. Toronto: Ministry of Education, 1981.
- Gehrke, N.J. and S. Bravmann. "The Application of Dramatistic Criticism to Curriculum Evaluation." Los Angeles: Unpublished paper, AERA, 1981.
- Gibson, R. "Curriculum Criticism: Misconceived Theory, Ill-advised Practice." *Cambridge Journal of Education*, Vol.11, No.3 (Michaelmas Term, 1981).
- Goodman, N. "Metaphor as Moonlighting." in S. Sacks (ed.), *On Metaphor*. Chicago: University of Chicago Press, 1979.
- Grumet, M.R. "Curriculum as Theater: Merely Players," *Curriculum Inquiry*. Vol.8, No.1 (Spring, 1978).
- Kelly, E.F. "Curriculum Evaluation and Literary criticism." *Curriculum Inquiry*. Vol.5, No.2 (1975).

- MacDonald, B. "The Portrayal of Persons as Evaluation Data." Unpublished paper, AERA, 1976.
- Milburn, G. "Deciphering a Code or Unravelling a Riddle: A Case Study in the Application of a Humanistic Metaphor to the Reporting of Social Studies Teaching." San Francisco: Unpublished paper, CUFA-NCSS, 1983a.
- Milburn, G. "On Discipline Stripping: Difficulties in the Application of Humanistic Metaphors to Educational Phenomena." Vancouver: Unpublished paper, CSSE, 1983b.
- Pagano, J.A. and L. Dolan. "Foundations for a Unified Approach to Evaluation Research." *Curriculum Inquiry*. Vol.10, No.4 (Winter, 1980).
- Pecover, J. "Curriculum as Art." Vancouver: Unpublished paper, CSSE, 1983.
- Pratte, R. "Metaphorical Models and Curriculum Theory." *Curriculum Inquiry*. Vol.11, No.4 (Winter, 1981).
- Turbayne, C.M. *The Myth of Metaphor*. New Haven: Yale University Press, 1962.
- Vallance, E. "Aesthetic Criticism and Curriculum Description." Stanford University: Unpublished doctoral dissertation, 1975.
- Vallance, E. "The Critic's Perspective: Some Strengths and Limitations of Aesthetic Criticism in Education." Unpublished paper, AERA, 1981. ED 201557.
- Willis, G. (Ed.) *Qualitative Evaluation: Concepts and Cases in Curriculum Criticism*. Berkeley, Cal.: McCutchan, 1978.



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## Surrealistic Tendencies in Educational Thought Sources and implications

The trouble with having an open-ended licence to be an intellectual - such as a career in academic life would seem to grant - is that licencees tend to believe that the confidence and speed with which they juggle with ideas matters more than the validity of those ideas. Now a juggler must have things to juggle with that won't misbehave; it is not likely that he will prefer, for his act, live birds to apples and oranges. To render such ideas as birds tractable, so that they won't jib at being juxtaposed dramatically and unusually with other ideas like snakes or fire, it is necessary to freeze them first at some instant of their reality, like taking a photograph; and then you juggle with the photographs (those faithful renditions of reality), placing them if you wish in any number of incongruous relationships and thus provoking all sorts of unprecedented interest. This, as Susan Sontag said, is surrealism. Olson thinks that a good deal of talk about education is surreal and getting more so, and he lays out several ways in which that development is not at all useful.

The field of curriculum, indeed of education itself, is given to the use of images to describe desirable states for human beings. Education is an improving sort of activity, and those who think of the improvements it might bring are prone to metaphor. So we have ideas like education as "growth", or curriculum as a "racetrack" - a course to be followed. We have plays on the archaic meanings of the word education itself, a "drawing out".

These images are used both to describe what should be done and to rally people to that task and give them comfort as they pursue the difficult business of improving people. These images act as generative ideas giving colour and force, we hope, to the direction we think we ought to go. I don't want to say

that we do not need these images; only that we can become prisoners of them when the images take on a life of their own.

It is my view that current thinking about school change is driven by images of schools that are surreal; and I want to show how this might be so and why it isn't a good thing. To help me do this I plan to draw on a critique of surrealism by Susan Sontag (1973) given in her book *On Photography*. In that book she shows why photography is the most surreal of the arts and what some of the consequences of this are. I also draw on John Wilson's (1979) analysis of the tendency to fantasy in educational thinking.

### **Surrealist images: they drift away**

Before I do this let me sort out how I plan to use one of the terms here. Surrealism itself was a project of certain artists at a certain period of time; the term is normally used in connection with that artistic project. What these artists tried to do was labelled "surrealism", but apart from that label there isn't an independent meaning of the term - at least as far as I can tell from ordinary use. Similarly, there were cubists and impressionists and their associated "isms". Part of what went on in the surrealists' project involved giving rein to imagination; to extravagant and unrestrained imagination and to exploring fantasy life and hallucinations.

One way of looking at the surrealist program is to consider it an effort to represent and interpret the phenomena of dreams. Thus surrealism was a project undertaken by painters and writers and photographers to arrive at imagery by automatic unconscious processes; to tap psychic forces; to liberate reason from the control of received values; to explore the subconscious. One of the results of this process was the production of strange images with odd juxtapositions. These were meant to say something universal about what went on in the unconscious. So such images are often labelled "surrealistic".

Susan Sontag picks out two elements of the surrealists' project which she thinks characteristic of photography and about which she is critical. The images **distance** the viewer from the context in which they were obtained, and they tend to **drift** away into mere charm as time passes. The images allow one to give them meanings unrelated to the contexts in which they were first made. The images, she says, are clouds of fantasy and pellets of information. They have this quality because, with photographs, their original uses are easily modified and often supplanted by subsequent uses. As Sontag says, a photograph is only a fragment, and with the passage of time its moorings come unstuck. It drifts away in a soft pastness, open to any kind of reading (or matching) to other photographs.

It is this capacity, for the endless juxtaposition and drift of meaning that these images can give rise to, that brings us

close to the particular angle on the surreal that I want to pursue further. As Sontag notes, a set of photographs freezes movement in the life of a society and so contradicts the life's form, which is a process or flow in time. Life is not about significant details illuminated by flash and fixed forever.

Photographs are.

What is dangerous about these images, as Sontag sees them, is that although they are meant to speak volumes about the human condition, they subsequently are used to produce juxtapositions which are open to any kind of interpretation, any kind of meaning uncontrolled by the context of the life from which they came. The images have come unstuck from the very processes they were meant to illuminate. In a sense they cannot illuminate those processes; they can only be manipulated to serve the ends of others.

### **Educational images that are surreal too.**

Paralleling Sontag's concern about fantastic images is the tendency to fantasy John Wilson (1979) sees in education; that is, fantasy as a "story or picture generated not by concern or with a fact or any sort of appropriateness to the world, but by the emotional need of the person in question". (p.14) This also appears to lie at the heart of Sontag's critique of photographic images.

Wilson argues that the tendency to fantasy in education is due to its invitation to "fantasies of perfection; or at best of changing the (human) world in some dramatic way". (p.3) There is a tendency to underestimate the difficulties about doing this, difficulties that reside in human nature. The second reason, he notes, is that in the theory and practice of education "the real world does not hit us hard enough ... to jerk us out of our fantasies". (p.4) Wilson goes on to suggest ways of dealing with fantasies that have much to do with trying to clear up the conceptual confusions they represent.

One can see some interesting parallels between the surrealistic program and an educational one. Both strive for improvement, both are prone to work through fantasy; both lead to conceptual muddle when thinking is dominated by fantasy. Wilson and Sontag end up by saying the same thing: the pursuit of understanding is not illuminated by fantasy, but confused by it.

Wilson makes the point that a fantasy is more than, say, just an isolated prejudice - it is more like a "story or picture with connected elements". (p.13) Both Sontag and Wilson consider fantasy is dangerous because it is immune from processes of rational criticism.

I believe that some educational images are adrift in such a way. Such images have taken on a life, their own, adrift from their original context, and in danger of confusing us by allowing us to entertain fantasies about the nature and purposes of

schooling. I want to look at a number of examples from education which disturb me for this very reason. The intent here is modest. I don't want to offer reasons why the images hold sway; that is, I don't want to try to deal with the origins of these images. My interest is in their surrealistic qualities and the implications of that for educational theory.

### **The image of a coupled system**

Take first educational policy-making; specifically, planned school change. Arthur Wise in 1977 advanced the notion of hyper-rationalization to explain why efforts to engineer school change fail. By hyper-rational he means an excessive attention paid to the procedures of the school system: that is, too tightly coupling its inputs and outputs. The school is thought of as a factory with control systems and lines of authority and feedback mechanisms.

Behind the input-output idea of the school as bureaucracy that Wise complains of is the idea of a school as part of a coupled system. Karl Weick (1976) uses this image as a basis for understanding what schools do and what life in schools is like. He sees the school as an organism whose parts are capable of sensing, adapting, surviving, maintaining identity, achieving semi-autonomy. Coupling is what goes on between the elements of the organisms as these elements work together to achieve system goals. Highly coupled systems ensure that plans made at the centre are carried out on the "line". What concerns him are loosely-coupled systems where central plans have only a modest effect on what happens in the system. Schools he would say are like this.

One of the defining characteristics of a loosely coupled world like the school is that there is a relative lack of coordination, several means to the same end, causal independence, delegation of discretion, a lack of alignment between structure and function.

Weick claims that loosely coupled worlds do not provide an individual with many resources for sense-making, and with such little assistance in this task a predominant activity of people in such systems is trying to construct social realities. Here Weick is saying that people on the "line" depend on the people above them to define their tasks; to tell them what the organization as a whole is trying to accomplish and what their part in the process is. Thus it is not the purposes of autonomous individuals that matters, but the collective purpose. Without collective purpose and the instruments to communicate and shape the achievement of that purpose, Weick supposes that individuals will not be able to make sense of their work. The assumption behind Weick's hypothesis about life in a school, say, (a loosely coupled world) is that teachers depend on external definitions of purpose to make sense of what they are doing. Without such orders teachers are not likely to know what to do.

They lack purpose if they are not given purpose from above, and without the organization meaning is not possible. The couple image leads to a view of people as part of a system of control.

It seems to me that the image of people at work in schools captured by the loose couple idea has taken on a life of its own remote from school life. Weick himself admits that the image is capable of taking on endless meanings. He calls for "developing research tools capable of preserving loosely coupled systems", and he goes on to develop an agenda for research based on this slippery idea. He says thorough descriptions of coupling should show checks and balances, localized controls, stabilizing mechanisms, and subtle feedback loops that keep the organization stabilized and that would promote its decay if they were tampered with.

### **An "exoskeletal" explanation**

John Meyer (1980), picks up Weick's imagery in his thinking about school change. He talks about the "exoskeleton" of the school as the system of legitimation for what the school is doing, coming from the outside and bolstering the efforts of the school to convince its students that what is happening to the school is worth taking seriously. The exoskeleton is the support given to what schools do by the system of accreditation that exists outside the school. Thus "the real technology of the system lies in its instructional exoskeleton, not in organizational machinery." Meyer is in fact answering Weick's question: What holds the school system together? Answer: the exoskeleton. Not any program of curriculum intention, but how well the school is able to activate for its purposes the purposes of those outside the school. He says, "Perhaps effective teaching requires less creating of a distinctive local world in the classroom than the activation of the larger institutional one ... It seems possible that a teacher who blandly plays the conventional role and is considered deadwood by younger innovators has found the most effective strategy."

What he means is that it doesn't matter what the teacher does as long as schools deliver the credentials required by the larger society. Meyer explains the functions of loose coupling. School rhetoric is decoupled from what actually goes on there so that students can be convinced that what happens in school is relevant to their chances after school. This is done by **studied organizational inattention** to actual work and learning. This he calls loose coupling. The key thing is to be seen to conform to the required categories. The school program is most binding - that is, engenders the greatest support - if it is justified without reservation in terms of categories that have broad and solid support (like being able to get a job using high school credentials). As he says, "The advantage of loose

coupling is that educational categories and instructional reality are invariably inconsistent. Teacher preferences and capacities, parent tastes, student interests operate to create gaps between what is going on and what people expect. It may be more rational to retain institutional supports by programmatic conformity to general rules combined with concealed adaptation to local realities."

What supports what's going on in schools, as he sees it, is exoskeletal to the classroom or the school; it lies in the effective activation by the school of the larger social realities outside the school (the exoskeleton) that give school work educational meaning. The object of the school, he says, is to activate in the students their own membership in the educational system and with this to mobilize their commitment, and this is done by getting students to think that their school work does link up with their pursuit of desirable careers, even if it doesn't actually accomplish this. Thus statements of purpose support what goes on in school even if what actually goes on doesn't really promote those purposes. Within the exoskeleton of espoused purposes which capture support, teachers are free to do what they like.

Thus loose coupling is a way of conning people into doing their school work with the promise that this work will get them somewhere in the society. Whether or not it does do this, or ought to do this, isn't the issue. This is what to do if you want the system to be able to maximize inputs and outputs.

### **Consequences of the way people talk: puppetry**

Now one might say that this is all talk from organizational theory. But this is also the way many people talk about curriculum change. I believe the kind of mechanical image at work in the idea of exoskeletal support of the school and the loose coupling of promise and practice which protects the exoskeleton underlies much talk of school change. Before returning to these mechanical images to voice my complaint about them, let us look at an example taken from the literature of school change.

Take the work done at University of Texas under an NIE contract. In a paper entitled "A Developmental Model for Determining Whether the Treatment is Actually Implemented", Hall and Loucks (1977) talk about school change efforts as "treatment", and about subsequent discussion with people involved in school change with reference to where teachers lie on a measure of their use of an innovation. Such data are then used to determine how well the "treatment has been implemented"; that is, to what extent the innovation has been translated into the teacher behaviour defined by the design of the innovation.

The point of gathering these data is to be able to measure implementation in a "cost-feasible manner". The instrument used yields a scale against which people's **response** to treatment

can be measured. As the authors say, "The focus is not on how they feel (think) but on what they do in relation to the innovation", that is, on the extent to which they actually behave in conformity with the desired behaviour. These efforts to measure teacher response are in aid of greater coupling between school system plans and teacher response.

From Meyer's perspective the Texas program would seem futile. (Don't change teachers; just make sure that the courses have the right labels.) In either case the teacher is reduced to a mere puppet. The language of the paper I find disconcerting, when I stop to think that this is being written about education. These examples I have cited are not isolated pieces remote from mainstream talk about school change. Much writing on school change reduces the teacher to a puppet, in the way the analyses we have been considering do.

I find these images seductive; they give a sense of power over the systems I am considering; they make me feel as if I could pull a string and something would happen. Seductive or not, I think they are dangerous images. In them people are puppets inside the machine, pushed and pulled by forces outside of them, plastic men and women. Take Weick's case. People are given purpose by the input and outputs of the system in which they work - the orders coming down the line giving them purpose for what they do. They are hand-held puppets waiting to be told what to do. In Meyer's case, people are string puppets whose actions are driven by the requirement of the society for the products of the schools. In the Texas case people are both hand-held and controlled by strings.

### **Images within a life of their own**

Why do I find these images surreal? These images seem to provide a duplicate world to the one they are supposed to represent. The buildings are there; the curriculum is there; teachers are there, but the meaning of their work no longer has anything to do with them. Like photographic images these mechanical images of the school and school life have taken on a life of their own. We have no idea what those things in the image might mean to those whom we see in the image, just as we cannot know what it meant to be a sharecropper from looking at Walker Evans' photos, nor what was going on in many of the old pictures that one inherits from one's grandparents. You can read what you will into those photos, and you can juxtapose them with others as you will.

Perhaps it is the strange juxtaposition that sets me on edge. I find it hard to think of a new curriculum as a "treatment"; what an odd juxtaposition of language. I wonder what the "feedback loops" of the loosely coupled system are. I wonder what it might feel like to be loosely coupled. Is it the case that because schools are loosely coupled I spend much of my time trying to make sense of what I am supposed to do?

What sort of a puppet does that make me? The image renders me helpless with no moral purpose. Indeed if I am to be rational, I should avoid too much coupling; that is, it isn't wise for me to let people know what I am really doing in case they discover that it isn't any use at all; that is, it won't get you a job with Exxon.

How does one get trapped in such a charade? The exoskeleton that supports what I do depends for its strength on my duplicity. Otherwise dangerous moulting might begin. Here we have a moulting exoskeleton. The imagery has run away with one. But this is exactly my point. These images do have a life of their own. I mean what is to stop one from trying to shake loose from one's couples?

While saying that the images are surreal may give me some relief from my frustration with these images, it gives me few clues as to why I experience that frustration. What is wrong with these images? Why do they set me on edge?

### **Disqualifications of the surreal image**

First, it is seductive in its reduction. It gives one a sense that one is saying something powerful; that one is in control of a system that is responsive; that one understands well. This is a mistake in educational studies. The business is too complex to think we can, by dint of a few clever images, understand what is going on. The trick is too simple. Much more is going on in school than providing grist for the employment mill. Much more is going on than information flow, through a system of tasks and subroutines and other technical matters. A curriculum reform is not a treatment.

Second, the images are without a moral basis; education is an improving kind of business. It is after better people. The mechanical images we have been looking at raise no issues outside of the machinery they purport to describe. To what ends are the machines directed beyond their own survival? Their own homeostasis; their own digestion and excretion? The images are blatantly mechanical and amoral. It is this kind of concern that Reid (1979) raises in his discussion of the moral dimensions of theory building in education. The sort of talk that would enliven their programs and give an educational feel to the talk is absent. In the end these images are not about schools or educational institutions at all - although they may be about schools as bureaucracies or as parts of the manpower system.

Third, the images are borrowed and used in educational talk without a by-your-leave. Where is the talk that says that these images have something to say to educational problems? They may advance problems of bureaucrats or politicians or organizational theories or adoption of school-system-modification packages or what have you, but what do they have to say to education?

Fourth, these are images of control. As I said, the teacher is a puppet in a system whose rationality is predicated on conformity to bureaucratic dictates within the actual instructional planning process, and to conformity to the demands of the employment system behind which instruction goes on. Or is the instruction the facade, and are the employment prospects the reality?

Having said this, I still think that it is the surreal quality of the images that most strikes me about these ways of looking at schools and school life, and my hope is that the notion of the surreal, as applied to images we use in talking about schools, is helpful in coming to grips with them, in assessing our feelings about them, and in coming to some judgment about them.

## REFERENCES

- Hall, G., and Loucks, S. "A developmental model for determining whether treatment is actually implemented." *American Educational Research Journal*, 14, (1977), pp.263-276.
- Meyer, J.W. "Levels of the educational system and schooling effects" in C. Bidwell and D. Windham (Eds.), *The Analysis of Educational Productivity: Volume 2, Issues in Macro-Analysis*. Cambridge, Mass.: Ballinger, 1980.
- Reid, W.A. "Schools, teachers, and curriculum change: the moral dimensions of theory-building." *Educational Theory*, 29, (1979) pp. 325-336.
- Sontag, Susan. *On Photography*. New York: Farrar, Strauss, Giroux, 1973
- Weick, K.E. "Educational organizations as loosely coupled systems." *Administration Science Quarterly*, 21, 1976, pp.1-19.
- Wilson, J. *Fantasy and Common Sense in Education*. New York: John Wiley, 1979.

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Philip Nagy, Glen S. Aikenhead, Dianne L. Common,  
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### Field Notes

(i.e. Notes from a field; you are advised to watch where you are putting your feet.)

## Current Thinking on the Model of Education

(The papers that follow were originally presented in symposium form at the meeting of Canadian Learned Societies at Vancouver in May 1983. They are remarkable in having been contributed by authorities from a variety of fields, all claiming to support the same radical conclusion. Each paper brings with it not only the authentic smell of the lamp, however, but also a distant whiff of will o' the wisp. Anyone who succeeds in making sense of these papers is probably making a mistake. But let the authors speak for themselves, as they unfortunately have undertaken to do.)

### Introduction

An examination of the rise of great ideas of our Western Civilization reveals that historic turning points in the evolution of thought are best recognized in retrospect. Thus this symposium takes on added significance because not only does it represent a turning point in the evolution of educational thought but also it is so obviously a giant step forward that the judgment of history need not be awaited. This series presents nothing less than The Model of Education. We fully anticipate that it will stand undiminished for at least one-half of a millenium.

In the first three papers, we demonstrate psychological and methodological breakthroughs which have allowed development of The Model and show its grounding in more traditional curriculum theory. The fourth contribution presents The Model itself, which, as the reader will note, is set in a frame-work of all previous knowledge. The final presentation offers necessary and sufficient empirical evidence for the validity of The Model.

### The Harmonic Dissonance Theory of Maturation

Alan G. Ryan

The Model of Education requires a developmental theory as one of its foundations. When The Model was being conceived, various developmental theories, such as those of Piaget and Kohlberg, were evaluated and found wanting. Among the reasons for discarding prior theories were (a) that they provided too few stages for such a complex event as child development, and (b) they were unnecessarily limited in that they sprang only from observations of children. A developmental theory capable of anchoring The Model of Education must have its roots deep in the fibre of Western Civilization. Accordingly, the harmonic dissonance theory of maturation has been developed.

#### The theory

The harmonic dissonance theory of maturation has been formulated from the observation that children develop according to a pattern which has a parallel in western music. The most perfect relationship between two notes in music is the octave. When the child starts its development, it begins on one "note", so to speak, and when it has fully developed, it has "grown" an octave. Now, if the fundamental note (the one from which the organism starts) and any one of the other notes in the octave are played together, either a dissonance or a harmony will result. The harmonic dissonance theory is a stage theory, as outlined in Table 1.

Table 1

Harmonic Dissonance Theory of Maturation

Notes Played Together	Dissonance or Harmony	Approximate Age
C & D	Dissonance	In Utero
C & E	Harmony	Birth-2 yrs.
C & F	Dissonance or harmony	2-5 yr.
C & G	Very harmonic	5-11 yrs.
C & A	Imperfect harmony	11-14 yrs.
C & B	Dissonance	14-17 yrs.
C & C	Perfect harmony	18+ yrs.

Some amplifications on the stages in the table are now presented:

C & D. A dissonance stage when the infant causes sickness and

discomfort in the mother.

- C & E. An harmonic stage, when the child is good-natured and well-adjusted. This is the period of the first smiles and the preliminary walking activities.
- C & F. At various times this interval has been treated as either a dissonance or a harmony. This ambivalence perfectly captures the child beginning its journey of exploration and experimentation.
- C & G. Next to the octave, this interval is the most harmonic in music, corresponding to a period of stable growth where a child is good-natured and is progressing at an even pace.
- C & A. An imperfect harmony, neither perfectly harmonic nor absolutely dissonant, corresponding exactly to the unsettling onset of adolescence.
- C & B. Undoubtedly the most dissonant interval. The child is firmly launched into adolescence with all its unsettling overtones. The abrasive nature of the adolescent is perfectly captured by this dissonant interval.
- C & C. Once again, perfect harmony has been attained. The child has now developed into a new person and the development process can be considered complete.

As we have demonstrated, this timeless and useful theory can explain most of what is observed during the development of the human being. For example, the interval from C to B flat (which is not a major interval of the theory, but one of the several minor ones) is the diminished seventh, the chord of which will be recognized by any composer as an easy way to prepare for a change in key. In other words, the adolescent is preparing to move to a new key, or, in lay terms, to a new frame of reference.

There are, of course, a few observations which do not fit this simplified version of the theory. When Piaget was faced with such instances, he had to invoke the unwieldy concept of **décalage**. In the harmonic dissonance theory of maturation, any untoward observations can easily and naturally be accommodated by the additional concept of **glissando**, which is a moving from note to note without identifying the interval in between the notes.

The Harmonic-Dissonance Theory of Maturation represents a powerful new developmental theory. It accounts for a large mass of data. It is embedded in a wide cultural vision, and it is highly plausible. These merits will allow the theory to supplant other developmental theories in the minds of educators and thus ensure that it takes its rightful place as an inspiration

for future generations of educational research.

### **Collective-Recollective Methodology: An analysis of a teacher's day**

Philip Nagy

This paper presents a new approach to the problem of reliability of data in classroom-observation, case-study approaches. It builds upon recently pioneered work in collective-recollective methodology. Its strength rests in the combining of the richness and validity of qualitative data with the precision and reliability of matrix algebraic methods. This combination we have dubbed anthro-algebra or matrix ethnography.

In review, the essence of collective-recollective methodology is to look back upon experience as perceived by a group and attempt to agree on what has happened. In our example, the group participating consisted of one "observed" and 16 "observers". The observed was a classroom teacher of junior high science and geography in a large urban system. The goal of the project was to help the teacher understand and reconstruct the working day of Tuesday, March 9, 1982. The observers were a group of graduate students selected for their understanding of the critical methodological issue - that their grades in a graduate seminar depended on the success of the method.

Our crucial methodological breakthrough is to place the observers in a square pattern, resembling a matrix. During the lesson, observations are recorded by the observers and placed on a matrix-shaped coding sheet. Next, each observation is assigned an arbitrary numerical code, which then occupies the observation space in the matrix. Thus, a page of notes is quickly and efficiently converted to a data matrix.

The reason for choosing a square seating arrangement (a circle has been the traditional organizational motif) is to allow for easier inversion of the observer matrix. Following this, by a slight extrapolation of the usual techniques, we are able to extract Eigen-observations. A simple clustering procedure gives a rough draft of Eigen-paragraphs, and minor editing to smooth out differences in writing style gives the finished product.

In a trial example, the group watched the teacher teach a lesson on river deltas. In the recollective session the next day, the majority of the group were able to recall the topic from rough notes. This is considered primary evidence for the validity of our procedures.

Development of the method is not complete. We are currently experimenting with incorporating the views of the observed teacher in a manner analogous to the uniqueness vector.

There are two methodological problems which have come to our attention. One, ironically, occurred in a situation where

there was too much agreement among the observers. This resulted in collinearity of the observation matrix, which then could not be inverted. Fortunately, this problem in fact contributes to the validity evidence of this technique. The case under discussion occurred in a school where the seats were bolted to the floor, resulting in students having too similar education experiences. In these conditions, the fact that the observation matrix could not be inverted simply confirms that the observer matrix couldn't either.

The final problem with our method is that the placing of sixteen observers in a classroom leaves no room for students. We are currently working on this problem, using the latest available microtechnology.

### **A Metaphor for Canadian Curriculum Change**

Dianne L. Common

What was novel becomes commonplace, its past forgotten, and metaphor fades to mere truth.

Nelson Goodman

There is, in Canada, one special curriculum tradition which deserves examination, that of the curriculum "fix". Curriculum fixing is the practice, well engrained in the Canadian educational establishment, of providing a curriculum panacea, delivered from the policymaker to the student through the teacher. Our examination of this phenomenon and its evolution will be through the use of a most appropriate metaphor, that of a caffeine fix, as delivered from the grower through the food corporation to the drinker. Through this metaphor, this way-of-viewing, we can discern three models of curriculum fixing, or implementation, as some might call it, paralleling three modifications in the process of infusing the bloodstream with caffeine.

Traditional coffee drinking, if we limit our hindsight to thirty or so years, parallels the top-down approach of traditional curriculum fixing. Coffee beans are conceived and grown by remote growers, just as curriculum problems are perceived by those far removed from the consumers at the end of the production line. Multinational food and publishing corporations play similar roles, in the selection of beans (materials), and in their processing and packaging. The fact that local labour is sometimes involved in this step does not ameliorate the essentially foreign domination of the industry. At the consumer level, choices are limited to the most minor tinkering with the Idea (or the Bean).

While for many years coffee consumers were satisfied with buying pre-selected and pre-ground beans, teachers were also happy to have store-bought pre-packaged solutions to their curriculum problems. In recent times, thanks to the

simultaneous development of Local Needs, Canadian Nationalism, and the Coffee Boutique, the grip of the top-down curriculum and caffeine fixing traditions has been loosened. As consumers are now more inclined (and able) to select and grind their own coffee beans, resulting in a more personalized fix, teachers are now more able to select and individualize their own solutions to their curriculum problems.

Let us not overemphasize the degree of actual loosening of the ties that bind; a glance at the recent Council of Ministers document for comparing provincial courses of study shows remarkable similarity across the country. This is parallel to the discovery that the charming Fred's Bean Emporium down the street is in fact a chain, located in every shopping centre from Squamish to Come-By-Chance, and owned by a subsidiary of United Amalgamated.

However, the most interesting developments in curriculum are paralleled by those who choose to get their caffeine from alternatives, that is, tea or cola beverages. This may be compared to the advent of the Local Curriculum Team, who, rather than making an individualized selection from the offerings of the multinationals, actually write their own materials for school or board use. In all honesty, the parallel breaks down somewhat at this point. A better metaphor might involve those who reject caffeine entirely in favour of something which can be grown in their own backyard. (Interesting parallels can be drawn concerning violations of copyright laws.)

In summary, then, the evolution of caffeine fixing habits can be used to draw parallels to the evolution of curriculum changing practices. This outline has been the merest sketch of the possibilities open to those who choose metaphors with wisdom and aplomb. Let me leave you to consider the metaphorical possibilities in the fast-food business and in real estate speculation.

### **The Model of Education: An organic approach**

Glen S. Aikenhead

Stephen Toulmin's classic philosophical treatise, *Human Understanding*, developed a definitive and comprehensive explanation of rational thought; a philosophy of human rationality, if you like. To explain all of human rationality within one modest volume, Toulmin drew upon the biological metaphor "evolution", illustrating that human rationality shares a metaphysical pre-supposition with biological modes.

Similarly, Aikenhead has postulated a conceptualization of education vividly captured in a biological model of the cell. With every nuance of a cell's structure and function, fresh insights into education emerge with a vengeance. The biological cell is the existential quintessence of Canadian education.

For example, the conservative self-preserving character of education is commensurate with the homeostasis of the cell. As

documented by Ryan, "Education's robust resistance to change is manifested by the multifarious cellular systems that maintain chemical equilibrium within the cell;" to which Hersom has replied, "Ryan is full of multifarious cellular systems."

Let us look more closely at the structure of the cell and discover further relationships with Canadian education. The cell's first distinguishing feature is its outer membrane. This selectively permeable barrier clearly defines the custodial function of education, so eloquently conceptualized by John Dewey when he said, "Education keeps the little bastards off the street." The purpose of a cell is to take in the unsophisticated and unruly amino acids, fats, and minerals in order to produce literate and useful proteins that will serve the host cell or build other cells. These proteins are commonly excreted into the public domain via the cellular membrane.

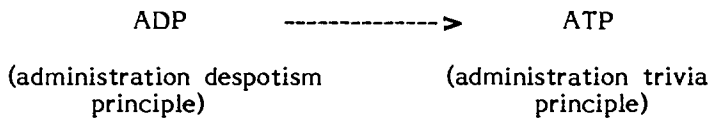
The cell's second distinguishing feature is its nucleus and cytoplasm. They direct the cell's protein synthesis in a way that offers researchable insights into Canadian education. The nucleic structure metaphorically represents the function of the university. Within the nucleus, the academic heredity of education resides specifically in the carnal chromosomes. These blueprints to Truth are composed of giant DNA molecules which are structured in the form of a double helix - one for each sex. DNA is a sequenced thread of four Arts and Science nucleotides; instructor, assistant professor, associate professor, and full professor.

The cellular mechanism by which all knowledge flows from the nucleus university may be seen by following the messenger-RNA, a less than perfect DNA representing the faculty of education (professors). The messenger-RNA, a species synthesized in the nucleus, develops curricula within the regulated jurisdiction of the DNA. Then the messenger-RNA diffuses into the cytoplasm of the nonuniversity education world.

The cytoplasm has its own structures. Let us begin with the endoplasmic reticulum on which the ribosomes are situated. The conceptualization of classroom instruction is clarified by the ribosomes. Here the messenger-RNA from the nucleus university forms a template. Meanwhile, a lower form of RNA, "transfer-RNA" - the real work horse of the cell - captures the unruly, witless molecular species of amino acids that the cell membrane permitted to penetrate in the first place. These unruly molecular species represent the state of unsocialized academic ignorance which education is destined to serve. The uneducated become attached to their transfer-RNA teachers, and are brought to the ribosomes where, with the educational psychology of enzyme action, these amino acids are synthesized into proteins, using the curriculum messenger-RNA as a template. This organizing or socializing function flows naturally from both the psychology of enzyme action and the structure of the DNA Truth. Notice that this organic model of education molecularizes students' states of literacy, not the students themselves.

This quantization of literacy respects the individuality of students while augmenting the requirements of accountability to the general public outside the cellular membrane, and thus reduces the usual analytic flack freely flowing from departments of educational foundations.

The general public supports the educational system by financing a budgeted supply of oxygen. This oxygen easily penetrates the cellular membrane and enters into another cytoplasmic structure, the mitochondria. Within the mitochondria the respiration of education takes place, consuming oxygen and excreting carbon dioxide and other stale entities; but all the time changing ADP into the more energy rich ATP, according to the equation:



The mitochondria have long been recognized as the throne of educational administration where circular flow charts abound, championed by the Nobel prize winning Krebs cycle. The energy metabolism of ATP is crucial to all energy systems throughout the cell. According to Farquhar et al's (1986) nasal degeneracy theory, when the cell's energy metabolism fails, putrefaction sets in.

A last cytoplasmic structure worth mentioning is the lysosome. This is where the cell's enzymes are synthesized. Note that enzymes masquerade as clever proteins and thus attain the metaphorical status of educational psychology. The lysosome model of educational psychology breaks down the arbitrary distinctions among cognitivists, behaviourists, Rogerians, and Rotarians. The model of education acknowledges psychology as playing a unique enzymatic role for each educational function within the cell. The model also acknowledges the fact that no education model without a favourable psychology bent has a chance at SSHRC funding.

The test of a good model is its ability to explain diverse phenomena, its fruitfulness in opening new avenues of research, and its ability to accurately predict empirical events. The Model of Education has demonstrated novel explanations for everyday events and has boggled the intelligentsia with new research questions. The Model needs only to be validated by empirical methods before it reaches the educational pinnacle of Aikenhead's curriculum vitae.

### **Validation of the Aikenhead Model Using an Holistic Judgment Strategy**

R.A. Yackulic

Validation of an holistic theory, such as the Aikenhead

Model, constitutes a major challenge for theory builders. Although education is rich in methodology for validating measures, variables, and constructs, strategies for validating rich nomothetic networks have yet to be developed. Meta-analysis, and its subsequent generalization as mega and super analysis, while reasonable first attempts at large-scale validation strategies, are not without flaws.

A major shortcoming of existing theory-validation strategies is the criterion of a singular truth. That is, most validation strategies assume a single reality, and that a good theory is maximally congruent with reality. Given the developing state of educational theory, a more appropriate goal might be the interpretation rather than absolute representation of reality as is the case in more mature disciplines. Since a single set of events may give rise to a variety of interpretations, a theory-validation strategy should incorporate the possibility of pluralistic realities.

The Aikenhead model and similar holistic theories tend to be of the portrayal type, capturing reality at a particular time and from a particular perspective. Changes in either time or perspective might be expected to change the portrayal. The task, therefore, for theory validation is identification of those theories which facilitate "good sense making" and allow public verification. This paper elaborates such a validation strategy and includes results of the Aikenhead Model validity examination.

An exhaustive review of research methodologies uncovered two strategies for exploring the sense-making and verification attributes of holistic theories. Both strategies are based on the premise that absolute truth may never be known but that situations require "temporary truth" (or current best guess). One strategy, rooted in the American psyche, employs the adversarial court model. This approach pits a theory prosecution team against a theory defense team. Each team presents the best evidence for its position. Judgment of the theory's merits is left to a single wise man.

The second strategy has Canadian roots and reflects the consensual approach. This strategy - which in its most developed form is known as the Royal Commission Model (RCM) - involves close examination of a theory by a group of wise men. The wise men are initially naive vis-à-vis the theories under review. Following their examination they are asked to express a consensual judgment regarding the theory's sense-making worth. This consensus constitutes public verification.

In addition to addressing the central tasks of theory validation, RCM has several major strengths as a strategy: (1) it is very efficient and should result in major economies over models which try to find definitive tests of "truth"; (2) theory validation can be greatly accelerated - it should be possible to quickly evaluate theories wherever wise men gather; (3) the process should result in accelerated theory revision.

The Aikenhead Model was evaluated using the RCM. Fifteen history professors unversed in educational theory were asked to examine the Aikenhead theory and six others which would provide a context for interpreting the results. The theories assessed were: Ideal theory (left to each professor to define), Newtonian mechanics, Copernicus' astronomy, Einstein's Relativity, Reaganomics, Trudeau's Just Society, and Aikenhead's Model. The professors were unaware that the Aikenhead Model was the focus of attention. The Aikenhead Model was presented to each professor along with a three-sentence summary of each of the remaining theories. Table 2 gives a sample of theory summary.

Table 2

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Einstein's theory

The author describes various elements in the universe and questions the adequacy of previously postulated explanations. Basing his conclusion on a complex single subject involving chalk and blackboard, the author postulates various abstract inter-concept relationships. Suggestions for further research are offered. However, some aspects of the model appear to be untestable.

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Professors were asked to construct an individualized rating form and to then rate each of the theories. Theory evaluation and data collection were completed in 56 minutes (approximately 8 minutes per theory).

Following standardization by professors, the data were analyzed using Carroll and Chang's Individual Differences scaling procedure. Five dimensions were identified: love/hate, understand, simple/complex, coherence, and testability at 43, 36, 7, 5, and 4% respectively. The remaining two dimensions, interpreted as logical adequacy and congruence with reality, seemed to have minimal impact on the final solution.

As is readily apparent from a cursory examination of Figure 1, the five-dimensional theory space, the Aikenhead Model did not fare well. On dimension "I" (love/hate) the Aikenhead Model scored far from the ideal theory; only Reaganomics and Trudeau were rated lower. Aikenhead was similarly rated low on dimension "II" (understandability), dimension "III" (simplicity), and dimension "IV" (testability). On each of these dimensions the Aikenhead Model was rated lowest or second lowest of all the theories. The only favourable rating obtained by Aikenhead was on dimension "V" (consistency, congruence). In general, the Aikenhead Model joined

Reaganomics and Trudeau's Just Society as examples of poor theory. The ideal theory and Newtonian mechanics were recognized by the professors as theories rich in sense-making value.

INDSCAL also allows judging styles to be examined. Four groups of professors emerged: Group I seemed to favour the love/hate dimension; Group II, understandability; Group III, both understandability and love equally; and Group IV, dimensions III through VII. Post hoc analysis of demographic data revealed geographic patterns: Group I professors were all employed either in B.C. or Maritime universities; Group II in the Golden Triangle; Group III were from Memorial, while Group IV were from the Prairie region. Apparently, desirable theory attributes are a function of geographic location. Seemingly only Prairie professors value the attributes of traditional scientific theories.

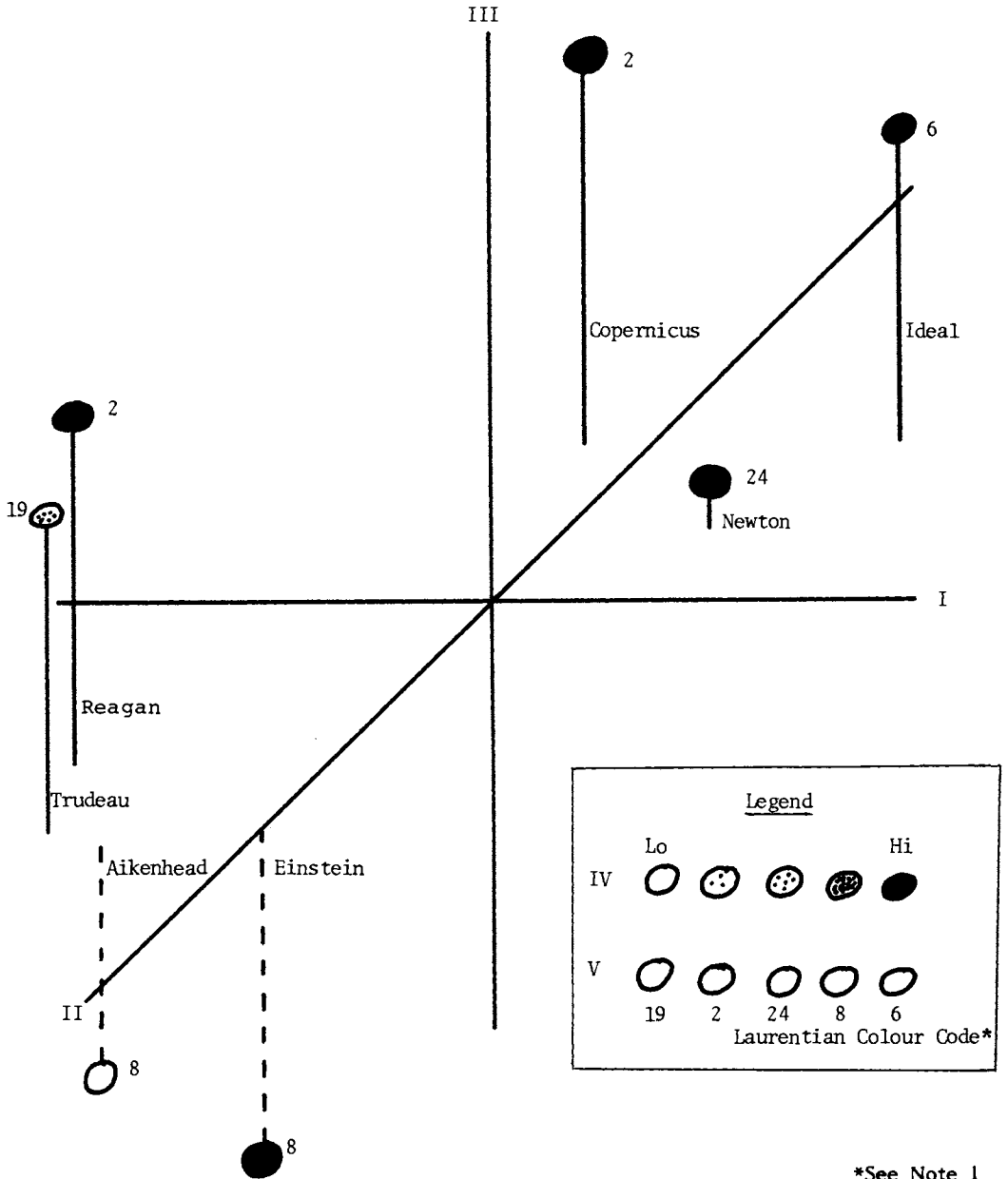
RCM is an effective strategy for evaluating complex holistic theories. It is efficient and provides readily interpretable results.

The Aikenhead Model when subjected to RCM evaluation did not fare well. Major revisions to the model appear necessary. Aikenhead's major deficiencies seem to be in the lovableness and understandability area. Its simplicity and testability also warrant attention.

#### **Note 1**

Printing limitations have precluded full colour reproduction of this graph. Nonetheless, the missing dimension V may be readily added by the reader. Dimension V is represented by colour. The numbers adjacent to each balloon (and in the legend) refer to Laurentian Coloured Pencil colour codes. Although dimension V is portrayed pentamously here, further research may permit exploration of the full colour spectrum. Since the first draft of this paper was written the author has developed a scale which implements the full 24 Laurentian Coloured Pencil set. Details are available from the author.

Figure I: 5-Dimensional Theory Space



\*See Note 1

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## Development Versus Liberation

Why is it that of all the sciences it is those that study human behaviour that seem least human about it? You often get the feeling that the objects studied hardly belong to the same species as those studying them; they would be unlikely to share any jokes about their common lot. Warnock takes us up the garden path towards a little theatre in which he seeks to present a little play, about the two prevailing themes in contemporary talk about education; he brings on some pleasant puppet-like figures to act it out (symbolically, as puppets do); he seeks a comic ending. Why comic? Because that is the realistic way to reconcile differences where human beings are concerned, including differences of theme. And then, to our distinct unease, we find that we have come rather too willingly up that garden path ourselves; that isn't really a puppet up there.

**Development** and liberation: words to conjure with in education today. You can hardly be against either one. There is some question, however, whether when we get down to cases you can support both.

To help us examine the question of the relation between these two traditions, let us set the following scene. A bare, dark stage. The lights come up. Appearing, it seems, out of nowhere, standing now stage centre with indeterminate expression, we discover a character identified in the playbill as The Illiterate. From stage left, enter a prosperous-looking gentleman, in early middle-age, carrying a butterfly net. The playbill identifies this character as Jean Piaget (1). From stage right, enter another gentleman, dusting himself off, somewhat out of breath, carrying a battered suitcase with a Buenos Aires sticker on it. Using the playbill again, we identify this character as Paolo Friere (2). The two characters approach The

Illiterate, arriving on either side at about the same time. What happens?

This scene might be now developed in a large number of ways, absurdist ways among them. But I want to specify the following: first, that both Friere and Piaget will take a professional stance toward The Illiterate, a stance that the followers of the historical Friere and Piaget would recognize as being the **kind** of stance these men might take as professionals; and second, that as dramatists we aim for a **comic** ending, an ending, that is, in which we see that these two professionals can be reconciled - not a tragic or simply pathetic ending, in which, for example, The Illiterate goes mad and dies, Friere is again exiled, and Piaget dies at the hands of a passing sociopath.

Let us consider the possibilities for this drama by asking three questions and answering them, for now, on a somewhat abstract and hypothetical level. The questions are

1. What would each character assume, and what would each want to know, in his professional capacity, about The Illiterate?
2. How would each attempt to discover what it was he wanted to know?
3. Where would each be wanting The Illiterate to get to?

### **Piaget speaks**

Let us allow Piaget to begin with a monologue, addressed to the audience. He might step forward and speak as follows:

"You know, this is the least bit awkward. They've asked me here to consult about this subject who is, they tell me, illiterate. But I've been arguing for a while now that in education we have tended to overrate the importance of language learning, let alone the simple skills of transcribing language. Much more interesting and powerful is the development of cognitive structures of a more general nature. Without such development, it is futile, even cruel, to expect and demand certain kinds of language performance, and among those certainly is the literate kind.

"Well, I shall assume, as one seems to be able to do with all organisms, that this subject here is capable of assimilation and accommodation. The question then is what specific forms of cognition these processes have thus far produced, or if you will, what stage has been attained. How do I discover that? In theory, simple enough. I simply try to think of ways of discovering what kinds of cognitive tasks the normal subject **cannot do**. You see, incompletely developed subjects can't do certain things - can't "conserve" quantity when one dimension of volume is changed. The important thing is not the specific task

that the subject cannot perform, but its logico-mathematical structure. What I'll be looking for here, then, is the logico-mathematical structure that best describes this particular subject's way of organizing knowledge.

"Let's see. I might ask the subject to do something like the following. I could seat the subject before a model of three mountains and ask the subject to choose cards that show how the scene would appear to someone viewing the mountains from another vantage. Younger children, you know, regularly choose the card that imitates their own view. They cannot 'de-centre' so as to adopt the point of view of another.

"I could do that. But the thing I find most awkward about this situation is that they seem to want me to **do** something with this subject. I mean, I can tell you where I think the subject will get to if development is not interrupted: the 'decentred' stage of formal relations, where it is possible for the subject to entertain hypotheses, deduce consequences and use these deductions to put the hypotheses to the test. But since I cannot 'teach' the cognitive development necessary to get to this point - it is developed through action, not 'learned' in the narrow sense - I suppose the best I could do would be to devise tasks for The Illiterate that would make manifest the untoward consequences of not decentring, and thus motivate his decentration.

"But I'm a scientist, not a pedagogue. I'm interested in accumulating **knowledge** about cognitive structures; **application** is for others. And if they won't let me redefine my situation and make The Illiterate into something more useful to my scientific purposes, I won't even be in their stupid play. They won't let me, so I'm leaving now. Don't tell anyone..."

Now this characterization of Piaget's address to The Illiterate and to the dramatic situation before us brings our play to the verge either of farce or of collapse, and we can't have either. We want comedy. For comedy we need our protagonists to commit themselves to **some** position with respect to The Illiterate and that position must not be so diluted or silly or distant as to cause us to be overwhelmed by irony. We need to find for Piaget a position that is both serious and plausible, and one in which he is committed to doing something about the situation in which he finds himself.

### Two ghostly visitations

To achieve this I suggest using a device that was used by Charles Dickens to redeem, dramatically and morally, his theretofore arch-villain Ebenezer Scrooge: the device of a ghostly visitation. Here we will restrict ourselves to a visitation from the future, but we will make up for omitting past and present by having two ghosts of Development Future.

One ghost would appear in the form of Margaret

Donaldson, presented as the author of what will be an important critique of Piaget's work (3). Donaldson, speaking with a slight Scottish brogue, will tell Piaget about the results of an experiment to be conducted by a colleague of hers named Martin Hughes. In this experiment Hughes will pose children a problem that is the same in terms of logical structure as the three mountain problem, but he will make special efforts to present it in a way that makes sense to the children. Specifically, he will present the children with a situation in which they are asked to say in which circumstances a policeman would be able to see a child who was trying to hide from him. Piaget will be shown children in this experiment giving the right answer - decentring, if you will - at a very high rate. Thus, Donaldson will suggest it is possible that it is the experimenter, Piaget who failed to decentre in the earlier experiments by failing to appreciate the ways in which the task set the children might simply not make sense to them, or not be understood by them.

Exit Donaldson, humming "Ye'll tak the high road and I'll tak the low road.. "

A second ghost will now enter, and introduce himself as Urie Bronfenbrenner, an American psychologist. Bronfenbrenner will unceremoniously twit Piaget with the tendency of Piaget's developmental models to employ a scientific lens that restricts, darkens, and even blinds the researcher's vision of environmental obstacles and opportunities and of the remarkable potential of human beings to respond constructively to an ecologically compatible milieu once it is made available. "As a result," he will go on to say, "human capacities and strengths tend to be underestimated." He will go on to suggest forcefully that "the social significance of the setting for research subjects has to be established before their behaviour can be understood and its implications for development determined." To do this, he will argue, experiments should strive for "ecological validity". That is, they should try to take account of the experience of the subject, of the subject's role, and of relations among context, if they are to hope to be able to make secure findings about development. Finally, Bronfenbrenner will allude darkly to those researchers like Piaget who seek only to explain how the child came to be what he is, assuming that the question of how the child can become what he not yet is will take care of itself (4).

Piaget will appear to be shaken by these visitations. But not to his foundations. Nothing either of these ghosts has said would invalidate his basic assumptions about development, nor have they done more than urge an expansion of his experimental methodology. Furthermore, he will reflect, if these two were so great they'd be main characters.

### Friere on stage

While Piaget has been addressing the audience and experiencing his ghostly visitation, Friere has been chatting with The Illiterate, and drawing pictures. He has thus been developing a basis for his literacy education, which will begin with Friere showing The Illiterate these pictures of what purports to be The Illiterate's situation, developing from these a list of "key words" which focus the experience of The Illiterate, and which will be used to teach the concepts and skills necessary to literacy.

Bronfenbrenner, lingering on stage, will smile a little smugly at this evidence of Friere's concern with ecological validity. As Friere's activities continue, however, the smile will fade; in fact Bronfenbrenner will begin to fade, as it becomes clear that Friere has taken yet another step, one which crucially distinguishes his aims from those recommended by Bronfenbrenner. It will become clear that one of Friere's purposes is to develop in The Illiterate a sense of agency in the control of The Illiterate's life (perhaps by pointing out how many of the things in the pictured scenes have been built by The Illiterate and The Illiterate's fellows). And it will appear further that Friere accepts, perhaps welcomes, the possibility that in his relationship to his student, he, the teacher, might be transformed, not just the student. Bronfenbrenner will have urged Piaget to consider the importance of the "transforming experiment", but Friere will be seen to contemplate, as Bronfenbrenner does not, the possibility that the experimenter, and not just the subject, might be transformed. This suggestion challenges the scientific stance more seriously than Bronfenbrenner would, and he will at this point fade from view, shaking his ghostly head.

While The Illiterate is doing a writing assignment, Friere will come down stage and describe to the audience the goal of his interaction with The Illiterate. Clearly he will not describe it simply in terms of acquiring the skills of literacy, nor will he imagine it in terms of acquiring a "purely" cognitive capacity to represent and manipulate the world in terms of formal relations. "Why, the way Piaget describes it," Friere will say, looking at Piaget askance, "people at the highest stage of their development would resemble nothing so much as a bunch of scientists, people rather like Piaget himself. Presumably they would all need then to be provided with a lab, access to subjects, and a grant."

We should not imagine our goal, Friere will go on to say, only in terms of our ability to manipulate the world symbolically. Our goal must be to give The Illiterate both the ability to transform the objective conditions of his life, and the motive, the imagination to do so. This means, he will say, that we must help The Illiterate become "conscientized."

### Conflicts and resolutions

At the use of this unfortunate word, Piaget will gain the courage to raise two important objections. First, he will accuse Friere of capitulating to his students, denying his professional authority. Friere can answer that his method rather acknowledges the true conditions of authority, that it avoids the common confusion of power with authority. Second, Piaget will charge that Friere is simply indoctrinating students, probably with Marxist versions of the objective conditions of their existence, rather than liberating them to discover and live through these conditions for themselves. Friere here could answer that this is in fact a danger to be guarded against, but that Piaget needn't think, just because he imagines his goal in terms of "unreal" formal relations, that he is indoctrinating his students any the less. He is simply less aware of the ways in which he is doing so. And to the extent that he is not creating the conditions in which his students can be agents in their worlds, and in his world, he is creating technocratic slaves, not free citizens, no matter what their formal abilities are.

Now, perhaps, a pregnant moment - while each of our characters ponders the next move. In the hope of a comic ending, we might have Piaget realize how Friere could help him maintain a special sensitivity to the requirements of **action**, since action is what Piaget again and again has seen as the key to development. He might see that Friere could helpfully push him toward an improved awareness of context, and of the actual experience of his subjects in their own worlds. He might wonder if Friere could help him do his future experiments not as a bureaucrat does, but as a lover or a friend might.

Friere might, after all, appreciate the special power and pleasure of the scientific knowledge that Piaget places at the apex of his life. He might appreciate the special usefulness of such knowledge in affecting the "objective conditions" of life in certain situations. He might appreciate Piaget's ingenious capacity to read his subjects' responses in terms of their xstructure. However, he would probably also expect that Piaget would be a much harder nut to crack than would The Illiterate when it came to becoming aware of the political context and motives of his work.

And The Illiterate? It is time to face a crucial omission in our account of this drama. We have not said how we would cast this character. One wonders how readers who have come this far have been casting him. As a him? Or as a her? Young or old? Brazilian? A Muhzik? (5) As what the Americans call a Basic Writer? However we have done it, we have had to go some way toward taking this category - The Illiterate - beyond caricature to character, making an abstraction into something recognizably human.

A radical step is required if all our protagonists are to

learn to see each other as people.

We would not exempt The Illiterate from our demands. What The Illiterate might give us is the same thing we would have to be brave and free enough to seek to give him: a proper name, and all that having a proper name implies.

## NOTES

1. The historical Jean Piaget was, as it happens, the proponent, one might even say the father, of a kind of developmental study that is increasingly influential in education today. By the time this Piaget reached early middle-age, he had published **The Language and Thought of the Child**. Yet to come were a great many other publications. Though the historical Piaget was early trained as a zoologist, he did not, as far as we know, collect butterflies. Vladimir Nabokov, who lived in Switzerland but was not himself Swiss, is the one who collected butterflies.
2. The historical Friere, still in history, might have been out of breath at several points in his life, since he has been expelled from two countries by the political authorities. He has not, however, as far as we know, had to take it literally on the lam. Nor do we know that he has ever been to Argentina, where he might have met that extraordinary man of letters Jorge Luis Borges. In each case then, we have reason to question whether the characters in our drama should be precisely identified with certain historical characters of the same name. It is also clear that we cannot appropriately rebut any of the arguments put forward by these two characters, if we are inclined to try to rebut them, simply on the ground that the **real** Piaget or Friere wouldn't have said (or done) that.
3. An historical Margaret Donaldson has published such a critique: **Children's Minds**.
4. An historical Urie Bronfenbrenner has written a book called **The Ecology of Human Development**, which offers arguments remarkably similar to those made by our character here. See especially pp.7, 128.
5. Muhzik is the Russian word for peasant. Tolstoy's remarkable experiments in education were conducted among the Muhziks on his estates. See **Tolstoy on Education**.

## REFERENCES

- Bronfenbrenner, Urie. *The Ecology of Human Development*. Cambridge, Mass.: Harvard University Press, 1979.
- Donaldson, Margaret. *Children's Minds*. New York: W.W. Norton & Co., Inc., 1979.
- Piaget, Jean. *The Language and Thought of the Child*. London: Routledge & Kegan Paul Ltd., 1950.
- Piaget, Jean. *The Psychology of Intelligence*. Patterson, N.J.: Littlefield, Adams, & Co., 1960.
- Tolstoy, Leo. *Tolstoy on Education*. Chapter 5, pp.222-247. Associated University Presses, Inc., 1982. ("Should We Teach The Peasant Children to Write, or Should They Teach Us?")



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## The Evolution of the Idea of Reason and its educational consequence

Anyone educated in any way in the classics, whether of our own language or of the ancient world, must ever since have had the uneasy recognition that ideas are not what they used to be - to put it pretty cautiously. Universal truth was once a powerful notion, yet who uses it now? Even reason no longer enjoys its once unchallenged status in universities and schools - which is not to say that it does not permeate the atmosphere of those places. Smith asks whether education is able, through reason, to do more than adjust us to the status quo. Answering that question, he outlines the manner in which reason, interpreted as the "force of the better argument," may be used to liberate us, as of course education should.

It is often argued, especially by philosophers, that the essence of man is reason. Reason, said Aristotle, is what distinguishes human beings from beasts and is the source of all properly human activity. Following this line of thinking philosophers of education have maintained that reason is the essence of education, that education uses reason to promote reason and in the process contributes to the development of both the individual and society. On its face this seems rather straight-forward. It represents the best of the humanistic and democratic tradition. An education in reason is nothing short of an education in becoming human. Unfortunately, we have some very abstract concepts here. Not only is it difficult to understand in concrete terms precisely what is involved in an education in reason, but the idea itself has changed and continues to change with circumstances. It is these changes that I wish to explore, ultimately for the sake of judging whether or not they have been for the better.

In classical thought reason was conceived as an objective and universal perspective on the truth. It was a way of

transcending the particulars of one's life, those things such as feelings, desires, and the idiosyncracies of culture that distort or bias understanding. To be lacking in reason was to be a slave, and to be a slave was to be oppressed and, therefore, unfree. By itself knowledge could not save one from this fate. Knowledge was seen primarily as a means to an end, as a necessary but not a sufficient condition for citizenship. One could know everything there was to know and still be a slave. To be free was to control your own destiny, to be master of your own ship. Of equal or greater importance than knowledge was the ability to see things from a perspective larger than your own.

This is the power of reason. Technically speaking, my reason is not really **my** reason. That is, within the classical tradition my reason is not created or defined by me. It is not, in this sense, subjective. It is a mode of understanding that I may choose to occupy or not occupy. But once in that mode I am more or less carried along objectively towards an objective outcome. It is rather like traveling on a modern day super-highway. Whether I get on or off is pretty much up to me. But once committed to the route, I am taken in a predetermined way towards a predetermined destination.

### **Classical truth**

It is important to recognize that this conception of reason was not espoused out of the blue. Given classical metaphysics it makes perfect sense. Reason is a function of truth and is usually presented as the best way of knowing or getting at the truth. However truth is conceived, reason must give us access to it; that is the point of reason. In the classical tradition truth was conceived, quite understandably, as objective. That was the common sense view, and it still is. Whatever is true is independent of what we think, what we feel, or what we would like; at least this is what we often find when we get out into the world. Not that there is never a correspondence, but that there seems to be no necessary correspondence. And this is enough to convince most of us that correspondence, when it occurs, is no more than a happy coincidence and that truth itself always exists on its own, that is to say "objectively".

Obviously this common sense view is opened to telling criticisms. But even if it were acceptable, classical thinkers extended it to include another view that is far from common sense, and that nowadays is repudiated even by most philosophers; that is, the idea that truth is universal. Remember, we are talking here about truth in a substantive sense, not just in a formal sense, truth with a capital "T", as William James used to say. Classical thinkers reasoned that if truth is objective, it does not change; and if it does not change, it must be universal, that is, absolute. Thus, objectivity was tied by implication to universality. It was assumed that

unless truth was universal it could not be objective, and that since it was objective it must be universal, and that this all had the certainty of cold, rigorous logic. Now we can see why reason was conceived as an objective and universal perspective on the truth. Because truth itself was conceived as objective and universal. And since reason was regarded as the best way of knowing or getting at the truth, reason had to represent an objective and universal perspective.

### **Reason becomes subjective**

All of this was very carefully and reasonably worked out when all of a sudden, it is hard to say exactly when, perhaps sometime during the Middle Ages, the world began to change. People started to travel more, to explore more, to trade more, to go to war more - in short, to live more in the world of sensible experience. Ironically much of this was made possible by the achievements of the classical tradition, things like the development of mind, of ideas, of visions, of technology itself - in a phrase, those things that inspire daring and fuel revolution. People became more practical and less other-worldly. What caught their fancy was what they could in principle experience. They wanted to do more, to get around more, to conquer more; and this led them to develop, or at least to encourage the development of, a new philosophy and a new way of dealing with the truth. Roughly speaking, the new philosophy was empiricism and the new way of dealing with the truth was science.

It was not so much that a world beyond experience was proven not to exist. It was simply given less priority. Other things were deemed by the culture to be more important. This had a dramatic effect on the idea of rationality. If truth was immutable and, therefore, outside of nature, then reason as the road to the truth would be necessarily independent of experience. Because experience is tied to nature through sense perception it could not possibly be used to get at the truth in this classical sense. But if we are no longer concerned primarily with this kind of truth, but rather with practical truth, with truth about this world, about its practical operations, with truth that helps us get around in nature, however variable that might be, then we find ourselves committed to experience as the basis of our thinking. For not only is experience an avenue to practical truth, it is the only avenue. As the best way of knowing or getting at the truth, reason becomes a function of our experience.

The problem is that experience is a function of practical interests and needs, and if reason is a function of experience, it is tied irrevocably to irrational and limiting forces. Our reason would truly be **our** reason, created by us, or by our culture, for **our** sake, for **our** purposes, to promote **our** welfare. It would hardly be a way of transcending the particulars of one's life.

Gone would be the objective and universal perspective on the truth, the power of reason to liberate us from the accidental features of our existence. Reason, like knowledge and, ultimately, truth itself, would seem to be rather subject-dependent, not merely dependent or relative, but dependent on us, which is to say "subjective". Reason would seem to be no more than a clever way of getting what we want. As was recognized so clearly in the classical tradition, objectivity seems to imply universality, and if this is so, we give up the latter at the cost of the former. This applies to our concept of reason as well as our concept of knowledge. And it applies to each of these as forcefully as it applies to our concepts of truth, goodness and beauty.

In politics the consequence has been to regard reason as an instrument of the status quo, as inherently conservative. Thus, if one is serious about change, that is, revolutionary or structural change, one should not pretend to reason. The imperative is to transform as expeditiously as possible the material conditions and power relationships of group life, and then, and only then, to let reason evolve as a protecting agent for the new culture. The message is clear. Far from being liberating, reason always exists with an organism. We can think of the organism as biological or cultural, individual or social, but it is constituted as a teleological system that struggles to survive and extend itself. Towards this end it develops reason. Outside of the system there is only unreason.

### **Reason in education - adjusting to experience**

In education no less than in politics we reach a point where reason has no place. We operate instead on irrational self-interests, that is, on the perceived interests of the organism. These are irrational because they are neither universal nor objective. They are idiosyncratic. In the end they are defined by us. To teach or critique them we cannot use reason, not if reason exists merely in their service. Reason could not transcend them. It could not get beyond them as accidental controls on our lives. Education would have to assume them, not just in the relatively benign sense of taking them on, but in the deeper sense of accepting them independently of reason. The teacher could not use reason to teach them, and the student could not use reason to learn them. They could be neither understood nor evaluated by reason. They would have to be adopted and employed irrationally, without rational justification, which is to say through "imposition". They would have to be imposed in the most imposing sort of way, through indoctrination or conditioning, or just plain physical force.

If we think of education as transmitting a way of life, and a humanistic and democratic education as transmitting a humanistic and democratic way of life, then a humanistic and

democratic education - let us just call it "education" - would have two basic functions. The first would be an adjustment or socialization function that would inculcate group values and promote the general welfare. The second would be a liberating function that would focus on the dignity and betterment of the individual, that would free the individual from external constraints and internal compulsions and end with a responsible moral agent, a person who acted as a moral force in the world.

There is, of course, considerable tension between these two basic functions. It often seems that doing one negates doing the other, and this has led some to conclude that they are incompatible, that ultimately one or the other must be given up, or at least given less priority. In professed theory it is usually the liberation function that is considered most important, while in practice the adjustment function almost always dominates. While not trying to minimize this tension, the hope of most of us is that there is no need to choose or develop priorities between them, that, at least when we speak of a way of life that is humanistic and democratic, socialization promotes freedom and liberation is socially advantageous. If we might for now assume this, it must still be recorded that the liberation function is the source of the claim that education uses reason to promote reason. But what if reason is not liberating? What if it lacks the power to be liberating? Where does this leave education in a society that considers itself humanistic and democratic?

These questions bring focus on the most pressing philosophical problem in modern education. If we cannot escape linking reason with experience, how can we think of reason as liberating, as enabling us to transcend and objectively evaluate the contingent, irrational, and controlling forces to which all of us are subjected? There is one line of argument that seems especially promising. It requires us to rethink the distinction between appearance and reality. Traditionally this has been expressed as a distinction between things as they exist in our experience and things as they exist in themselves - in Kantian terms, "phenomena" and "noumena". But to the modern mind this distinction makes no sense. It has no rational basis and is, therefore, utterly unintelligible; for all we know we know through experience. For all we know, and ever will know, there are no noumena. The traditional distinction is unintelligible because the idea of a thing in itself is unintelligible. It makes sense as an ontological or substantive conception only outside of experience. But it is precisely experience that the modern mind cannot transcend, not when it is working for ontological or substantive understanding.

In these times if the distinction between appearance and reality is to be more than purely formal, it must be made within experience. Appearance becomes things within experience as they exist initially, our first impressions, so to speak. Reality becomes things within experience as they exist after we live with them for a while, after we handle them, think about

them, use them, love them - that sort of thing. John Dewey had at least two names for this, "intelligence" and "inquiry". Both were virtually synonymous with "reason". But this must be read "reason within experience", not "reason as opposed to experience". It involves searching for practical truth in the most rigorous and disciplined yet decent manner possible. For Dewey, reason is still the best way of knowing or getting at the truth. But it gets its power not from transcending experience *per se*, but from transcending myopic or short-sighted experience.

### **Critical reason a liberating force**

Another more recent expression of this view is found in the work of Jurgen Habermas. He too thinks we are unfree, and he places great faith in the liberating potential of education. Interestingly enough, he regards most of the debilitating restrictions we live under as self-imposed, as placed on us not mainly by external coercive forces, but unconsciously by ourselves. As he puts it in one of his books, *Theory and Practice*, it is only because the prevailing "relationships of power" in society "have not been seen through" that they manage to control us the way they do.

These relationships have produced a network of highly repressive institutions and practices that we erroneously accept as necessary. We are led thereby to uphold and participate in a gratuitously restrictive set of social arrangements under the mistaken impression that they are indispensable to our well-being. This not only results in frustration and anxiety, deprived as we are of many of the essential requirements of life, it also means we have imposed these conditions upon ourselves, since we owe them almost entirely to our own false consciousness.

To describe a form of consciousness as false implies first of all that the function of preserving coercive social arrangements has the inevitable effect of distorting our beliefs in such a way as to present our social world falsely; that is, as beliefs they are unwarranted. Second, it implies that the falsity of our present consciousness arises out of the manner by which we have acquired it; that is, it was acquired irrationally. When one social class dominates others to the point where it can project its way of seeing things throughout society, members of this dominating class can crush rival perceptions and make it appear that their own beliefs in fact serve to promote the general welfare. When this happens the result is what Habermas calls "an ideological form of justification" and, hence, an instance of false consciousness.

The only way out of this, Habermas claims, is through reason, and in particular through "critical reason". In its perfect, most powerful form critical reason is a function of the "ideal speech situation". This is that unique set of

circumstances in which it is alone rational to acquire our "legitimizing beliefs", the norms and attitudes that go into making up our "world picture" or "social consciousness". These circumstances must be those of ideologically undistorted - and, thus, "ideal" - speech. This means that our most basic opinions can be rationally formed only under conditions of absolutely free and unlimited debate. And in this process all parties to the institutions and practices being set up must be capable of recognizing what they are freely consenting to. The only constraints must be those derived from what Habermas calls "the peculiar force of the better argument," or reason itself. If potentially repressive institutions and practices are to be rightly regarded as legitimate, it must be possible to imagine their creation under conditions of freedom and equality, and also to imagine their acceptance by the unforced consent of all those subsequently liable to be affected by their behaviour. This is founded on something like C.S. Peirce's conception of truth as "the opinion which is fated to be ultimately agreed to by all who investigate" thoughtfully and empirically, and his conception of reality as "the object represented in this opinion." More than once Habermas has acknowledged this link to Peirce. We obtain objective access to the truth in the ideal speech situation. And its validity for everyone is guaranteed by the fact that it is itself free from local assumptions or cultural particularity.

But as Habermas began by insisting, this is not how our current legitimizing beliefs were in fact formed. Although our present consciousness prevents us from seeing it, they were formed under conditions of outright coercion and constraint. If only we could somehow be brought to a true consciousness of the situation in which our beliefs were actually formed, we would perceive at once that they are reflectively unacceptable; that is, we would recognize that the only reason they exercise any control over us is that we falsely believe them to have been acquired in an appropriate, rational way.

How can we ever hope, deluded as we are, to reach an unblinking recognition that our current legitimizing beliefs are indeed reflectively unacceptable? The role of critical reason - like that of the liberating function of education - is precisely that of emancipating us from our present state of bondage by enlightening us about the origin and nature of our false consciousness. In educational terms, the process takes place in three stages. The initial stage is to make us aware of the unconscious determinates of our present consciousness. We come to see that our current legitimizing beliefs have not in fact been rationally acquired, and thus that our present desires and corresponding patterns of social behaviour are out of line with our real or human interests. Next, this recognition brings us to a new cognitive state. In place of our earlier false consciousness, we rise to a true understanding of our social situation. In place of our earlier delusions we obtain an objective knowledge of the social world. Finally, this knowledge

sets us free. We come to realize that there is no good reason for us to accept our current beliefs and the social arrangements they uphold. This by itself releases us from the irrational constraints of our existing culture, liberating us from alienating pressures and allowing us to enjoy a more authentic life.

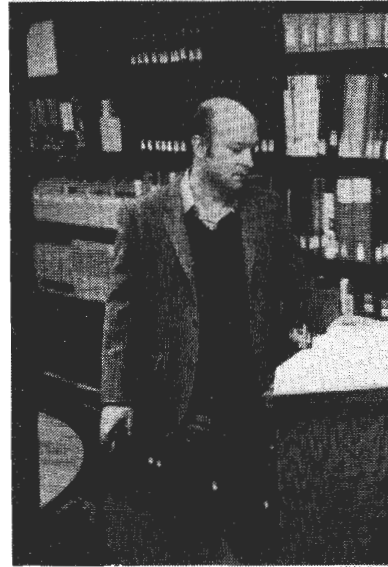
The assumption that recognizing the origins of irrational beliefs will free us from their grip should be seen as having a Freudian character. The effort to overcome repression is basically a struggle I wage with myself, a struggle to uncover and reshape my initial motivation. The only difference between Freud and Habermas on this score, and admittedly this is important, is that Habermas does not trace the root causes of repression to our physiology, but rather to institutions and practices we mistakenly regard as legitimate and, hence, impose upon ourselves. Still, reason remains the cure. The emphasis is on the "redeeming power of reflection". This was Dewey's faith too. We do not need to transcend practical interests and needs, only judge correctly whether they are real or rational.

### **Reason in the 20th century**

So, what does the commitment to reason amount to in the twentieth century? If we cannot defend reason as it was conceived in the classical tradition, and should not defend it as subjective, what are the alternatives? There would seem to be only one. Reason represents a commitment to talk, to think, wonder and debate under conditions that exclude the will to power. It is opposed to fighting, to arrogance and self-righteousness, and to the desire to deceive and dominate. One should never think that reason could be reduced to technique, or to formal, depersonalized logic, for these can function merely to impose our subjective and, therefore, irrational preferences. Reason is a conversation within ourselves, between people, or with nature itself, and it constitutes nothing short of a mode of living, which is to say, a distinct culture or way of life.

To reason is to negotiate seriously and fairly with as many concerned parties as possible. The power of reason in the classical sense is also its power in this sense. It is the essence of man and distinguishes human beings from beasts. It has intrinsic as well as extrinsic value because it is liberating. It may never be all there is to a person, and perhaps that is a good thing. But it remains an ideal worth working for - not only our obligation, but our inspiration and hope for a better future.

**Philip L. Smith** has published two books on thought and values in education, as well as numerous articles in journals like the *Philosophical Review* and the *International Philosophical Quarterly*. He is an associate professor in philosophy of education at Ohio State University, and presides at meetings of the special philosophy groups of the Midwest region and of the AERA. His books are entitled *Sources of Progressive Thought in American Education* (1980) and *The Problem of Values in Educational Thought* (1982).



## Book Review

**Roland Bartel.**  
**METAPHORS AND SYMBOLS: FORAYS INTO LANGUAGE.**  
 Urbana, Illinois: N.C.T.E., 1983.  
 85 pp. \$6.50.

The author deals with these powerful expressions of imagery in a clear and simple manner, including the final chapter in which he discusses the humanizing aspects of metaphor and symbol, echoing William Carlos Williams' belief that we should be able "through metaphor to reconcile the people and the stones". (p.vii) This material, more theoretical than what precedes it, Bartel considers "the foundation for everything else."

The book is designed for the classroom teacher. It is North American in outlook and tone though firmly rooted in the tradition of the English language. What is new about the work is the form in which it is assembled and its up-to-date examples (including mention of Watergate). Bartel demystifies metaphor by placing its poetic use within the popular domain of riddles, slang, humour, cliché, proverbs and folk-lore. From this background the poetic uses stand out sharply without detracting from the author's adherence to the concept of unity in life and language.

Metaphor, Bartel says, is "any comparison that cannot be taken literally", and starting from this basic definition which ignores sub-divisions into simile and other figures of speech the author sets out to examine and compare differences between literal comparison and metaphor, and to distinguish between metaphor and symbol.

Each chapter arrives at definite conclusions which are summed up neatly and are followed by specific teaching suggestions. Examples of metaphors in popular usage are drawn from classical, biblical, European, and South American sources as well as from England and the United States. One rich fund - that of Australia and New Zealand - is lacking; but any teacher of English will find the book helpful and can easily add examples from particular locales where needed.

If the book has a fault it is one that teachers will probably welcome, that is that to a large extent it avoids

complexities. The word "ambiguity" is not used in relation to metaphor and, in stating the difference between metaphor and symbol, the author ignores the fact that although symbolic significance may be planned it often grows naturally out of metaphorical "pictures". Elizabeth Drew writes, "At their simplest both simile and metaphor are visual... we see more intensely". (Drew, 1959, p.53) But she goes on to say that metaphors work best when fused with mind or emotion. It is these strong metaphorical images that may become symbols, and the "use of symbols by modern poets has been all in the direction of complexity such as Blake's." The conclusion drawn from this is that we are often left with as much a sense of mystery as of clarity. This seems to me to be an essential ingredient of true poetry: the fact that metaphors and symbols relate a form that is forever fresh simply because it avoids a final summation, resists a precise definition of meaning. Bartel deliberately simplifies - and rightly so.

Bartel makes the important statement that "an indispensable quality of poetic metaphors is that they are inseparable from their context," yet, when quoting from Emily Dickinson, he goes little further than making lists (for example, of the many metaphors the poet uses for the sun). He does not show how these metaphors illuminate the central meanings and feelings of the poems they inhabit, or how Dickinson's metaphors are vehicles for the powerful spirit that informs them. Bartel helps us recognize and understand the significance of metaphor and symbol, but does not make available the manner in which they work.

However, this criticism is perhaps not valid when made of a book that is a clarification, and which sets out to assist the harassed teacher of English and succeeds in revealing many strategies that aid analysis without damaging poetic essence. The author has done us all a useful service in showing the presence of metaphor firmly embedded in language itself.

The inclusion of riddles and humour is especially useful as a lively aid to young explorers of language and poetry, encouraging them to have fun attempting to discover hidden meanings and perhaps solve one or two delphic mysteries. Left to itself, language moves from the concrete and particular to the abstract and general, from the literal to the metaphorical, in what Bartel calls "the enticement of metaphor" which is difficult to resist. This movement results inevitably in cliché, and it is the poet who revitalizes language by embodying fresh ways of seeing in fresh comparisons - in what Coleridge calls "the streamy nature of association", which blends together unusual similarities in things essentially different.

In his final chapter Bartel deals with the possibly unlimited creative potential of language. There are, he says, three major miracles associated with language: "that we are born with the capacity to learn and perfect language... that language literally created us" (that is, as George Steiner puts it, "Logos, or 'speaking into being of the universe'." Steiner, 1967, p.55) and

that language has "the incredible power... either to accelerate the development of our humanity or to destroy our humanity completely." Bartel continues to set out briefly the constructive and destructive powers of language, and to hint at the unity of language and life: "the perception of a unity underlying and relating all phenomena". (Day Lewis, 1947, p.34)

To sum up, this book is excellently compact, well-ordered and fundamentally sound, and one that this reader thinks should be on the shelves of each and every teacher of English.

**Paddy Webb-Hearsey**  
McGill University

## REFERENCES

- Day Lewis, C. *The Poetic Image*. (Cape, 1947).  
Drew, Elizabeth. *Poetry: A Modern Guide to Its Understanding and Enjoyment*. (Dell Publishing Co., Inc. 1959).  
Steiner, George. *Language and Silence: Essays on Language, Literature, and the Inhuman*. (Atheneum, 1967).



**"Ismo"**  
Wendy Curtis



# Le McGill Journal of Education

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**Educational Heresies**

J.D. Jefferis

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Les membres du Collège canadien des enseignants qui ont assisté à cette conférence au mois d'octobre dernier se sont peut-être dits pour comprendre leur joie que pour une fois, on leur exposait la vérité sans fard. Mais, bien qu'elles suscitent au plus profond de nous-mêmes une reconnaissance joyeuse et spontanée, les vérités premières ou hérésies de Jefferis ne sont pas si premières qu'elles le semblent à première vue sur la scène de l'enseignement contemporain, au milieu des grands nuages de retombées linguistiques pas si volcaniques que cela où elles sont enfouies. Et elles ne sont pas exprimées si simplement que cela. La langue de Jefferis peut sembler simple à première vue, mais cette simplicité exprime une élégance (doublée d'une grande sensibilité) qui est le sceau d'une érudition classique qui n'en est pas à ses premières armes.

**Two Wrong Steps for Curriculum: structures of knowledge and stages of development**

Kieran Egan

118

Rien ne semble plus naturel que de recourir à l'un ou l'autre des deux modes d'enquête courants lorsqu'on soumet l'enseignement à une étude sérieuse. Après tout, on peut toujours jouer sur les mots lorsqu'on nous interroge sur ce que l'on enseigne. Certains répondent par le nom de leur discipline; d'autres, qui sont plus provocateurs, répondent par le mot "enfants" ou d'autres mots du même genre. C'est pourquoi l'élaboration des programmes est souvent basée sur l'analyse de la structure des connaissances ou sur le dépistage des stades de développement chez l'être. Kieran Egan n'est pas assez poli pour le dire (il pense que les deux méthodes sont une perte de temps pour les spécialistes de l'éducation) et il cite à titre d'exemple les programmes d'histoire. Pis encore, ils ne permettent plus de réfléchir aux programmes d'études, et empêchent de tirer parti d'idées pédagogiques aussi fructueuses que celles de Whitehead, qui pensait que le "charme" précédait la "précision". Les stades psychologiques sont hors de propos dans un processus essentiellement culturel comme l'éducation. La quête de structures de connaissances est moins préjudiciable

comme influence, mais seulement du fait qu'elle est moins influente.

**Design and Curriculum Design: Graeme Chalmers 133**  
**An architectonic view**

Il est des gens qui frémiraient à l'idée d'appeler un programme d'études une oeuvre d'art et pas des moindres. Et pourtant, ces mêmes gens ont sans doute toujours accepté le dicton selon lequel l'enseignement tient autant de l'art que du métier. Chalmers établit certaines analogies frappantes entre les travaux d'architecture et l'élaboration d'un programme d'études et il exploite délibérément l'existence de toute une variété d'idées et de pratiques dans le domaine hautement perfectionné de l'architecture pour suggérer des créations fructueuses dans la conception des programmes d'études, domaine qui devrait aspirer à un perfectionnement et à une productivité semblables. Faut-il s'étonner que dans un article sur la planification des programmes d'études, des mots comme "imagination", "flair" et "esthétique" reviennent constamment? Cela est en fait normal et il est suprenant que nous nous en étonnions.

**Madness With a Method: Geoffrey Milburn 149**  
**On humanistic metaphors and educational research**

Lorsqu'on emprunte des métaphores aux arts pour les appliquer aux études sur l'éducation, cela peut avoir un effet déconcertant et grisant sur ceux pour qui les sciences sociales semblent n'avoir rien compris. Ne disait-on pas autrefois que l'enseignement était un art? Et une métaphore (avant qu'elle ne devienne un cliché) a toujours le pouvoir d'apporter à un sujet les avantages de la clarté, de la force et de la grâce. Mais Milburn nous prévient que ces effets rhétoriques ont leurs tentations et leurs dangers, comme en témoignent les quelques écrits sur les programmes d'études qui se servent de métaphores humanistes. Certains polémistes ont déjà succombé à la tentation; quant aux autres, il faut qu'ils prennent conscience des dangers des nouvelles métaphores tant du point de vue logique que pratique, car les praticiens sont particulièrement réfractaires aux idées qui émanent des beaux-arts.

**Surrealistic Tendencies in John K. Olson 159**  
**Educational Thought:**  
**Sources and implications**

L'ennui avec la liberté apparemment sans fin que confère la qualité d'intellectuel (comme cela semble être le cas de la plupart des professeurs d'université) est que les tenants de ce genre de liberté ont tendance à croire que la confiance et la rapidité avec lesquelles ils jonglent avec les idées importent plus que la validité de ces idées. Il est vrai qu'un jongleur a

besoin d'objets dont il est sûr pour pouvoir jongleur; il est peu probable qu'il préfère des oiseaux vivants à des pommes et à des oranges. Pour rendre ductile l'idée d'un oiseau afin de pouvoir la juxtaposer à celle d'un serpent ou d'un feu, il est nécessaire de la figer à un moment de sa réalité, comme dans une photographie. On peut alors jongler avec ces photographies (ces interprétations fidèles de la réalité) en les plaçant comme on l'entend dans toutes sortes de rapports incongrus et en suscitant toutes sortes d'intérêts sans précédent. Pour reprendre les mots de Susan Sontag, on a alors affaire au surréalisme. Olson estime que bien des choses que l'on dit sur l'éducation sont surréelles et il démontre la totale inutilité de ce phénomène.

**Current Thinking on the Model of Education**

Nagy, Aikenhead, 168  
Common, Ryan, Yackulic

Les articles ont été présentés à l'origine sous forme de colloque à l'assemblée des Sociétés savantes canadiennes qui a eu lieu à Vancouver en mai 1983. Ils sont remarquables en ce sens qu'ils ont été rédigés par des sommités dans plusieurs domaines qui prétendent toutes à la même conclusion radicale. Chaque article ne sent pas seulement la lampe à pétrole mais également le feu follet; quiconque parvient à trouver le sens de ces articles est probablement dans l'erreur. Mais laissons la parole aux auteurs puisqu'ils l'ont demandée.

**Development Versus Liberation**

John Warnock 181

Comment se fait-il que de toutes les sciences, ce soient celles qui étudient le comportement humain qui semblent le plus inhumaines? On a souvent l'impression que les objets étudiés n'appartiennent pas à la même espèce que ceux qui les étudient; il est douteux que ces derniers veuillent plaisanter sur leur sort commun. Warnock nous entraîne vers un petit théâtre où il cherche à nous présenter une pièce sur les deux thèmes qui dominent aujourd'hui les conversations sur l'éducation; la pièce est jouée par marionnettes qui miment leur rôle de manière symbolique; la conclusion se veut comique. Pourquoi comique? Parce que c'est l'une des manières réalistes de concilier des différences, lorsqu'il s'agit d'êtres humains, notamment des différences de thèmes, et, à notre grande surprise, nous nous apercevons que nous avons embarqué un peu trop spontanément à bord de ce bateau; ce ne sont peut-être pas vraiment des marionnettes que nous voyons sur la scène.

**The Evolution of the Idea of Reason  
And its educational consequence**

Philip L. Smith

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## Collaborateurs

**Glen Aikenhead** enseigne au département des études sur les programmes à l'université de Saskatchewan à Saskatoon (S7N OWO). Il s'intéresse surtout aux phénomènes paranormaux et à l'enseignement des sciences. Il a publié de nombreux articles dans *Science Education*, le *Journal of Research in Science Teaching* et la *Saskatchewan Mountaineering*.

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**Dianne Common** est professeur agrégé à la faculté des sciences de l'éducation de l'université Lethbridge. Elle s'intéresse beaucoup au ski et à la théorie des programmes d'études. Elle a publié des articles dans le *Canadian Journal of Education* et dans *Curriculum Bandwagon*.

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a été professeur des sciences de l'éducation de 1944 à 1968. Après des études à Christ's Hospital à Londres et par la suite, à Bishop, à McGill et à l'université de Toronto, il a enseigné les humanités dans plusieurs écoles et universités de l'Ontario et est devenu professeur d'humanités à l'université de Western Ontario avant de revenir à l'université Bishop. Ses "plans actuels" (en février) sont de relire les trois premiers tomes d'Hérodote avant Pâques.

**Geoffrey Milburn** s'intéresse à l'étude des problèmes qui ont trait à l'éducation sociale et à l'évaluation des programmes d'études. Il a publié des articles dans diverses revues et il est actuellement rédacteur-superviseur au service des publications de la faculté des sciences de l'éducation de l'université de Western Ontario où il occupe le poste de directeur des programmes des deuxième et troisième cycles.

**Philip Nagy** est professeur agrégé au département de métrologie, d'évaluation et d'applications sur ordinateur de l'Ontario Institute for Studies in Education. En raison de sa nature extrêmement violente, on le garde isolé au bureau de Kitchener en Ontario. Il s'intéresse avant tout à l'analyse des données. Il a publié des articles dans la Review of Educational Research et dans le National Enquirer.

**John Olson** étudie actuellement la façon dont les professeurs se servent des ordinateurs en classe. Il envisage de lancer une étude à grande échelle à Ottawa dans le cadre de son année sabbatique durant laquelle il bénéficiera d'une bourse du CRSHC. Il s'intéresse passionnément à la manière dont les professeurs se débrouillent avec l'informatique. Il est professeur agrégé à la faculté des sciences de l'éducation de l'université Queen's à Kingston en Ontario.

**Alan Ryan** est professeur agrégé au département des études sur les programmes à l'université de Saskatchewan à Saskatoon. Lorsqu'il ne travaille pas dans son jardin ou qu'il n'écoute pas de la musique, il rumine sur l'évaluation des programmes d'études. Il est rédacteur en chef du CSSE News.

**Philip L. Smith** a publié deux ouvrages sur la pensée et les valeurs en matière d'éducation ainsi que de nombreux articles dans les revues telles que la Philosophical Review et l'International Philosophical Quarterly. Il est professeur agrégé de philosophie de l'éducation à l'université d'état d'Ohio et il préside aux réunions des groupes philosophiques spéciaux de la région du Midwest et de l'AERA. Ses livres ont pour titres "Sources of Progressive Thought in American Education" (1980) et "The Problem of Values in Educational Thought" (1982).

**John Warnock**, professeur agrégé d'anglais et de droit à l'université de Wyoming, dirige les programmes de rédaction

universitaires et les projets de rédaction de l'état destinés aux professeurs d'école au Wyoming depuis 1974. Sa publication la plus récente est un essai critique bibliographique, "The Writing Process", qui doit paraître dans *Research in Composition and Rhetoric: A Bibliographic Sourcebook*, aux presses Greenwood. Durant l'été 1984, il dirigera un séminaire d'été s'adressant aux professeurs de collège, parrainé par le National Endowment for the Humanities, et intitulé "The Writing Process: A Humanistic View".

**Alan Yackulic** est professeur adjoint au département de psychopédagogie de l'université de Saskatchewan à Saskatoon. Il s'intéresse avant tout à la psychologie cognitive et aux politiques accessoires. Il contribue régulièrement aux éditoriaux de nombreux petits journaux des Prairies qu'il signe de la manière suivante "Un contribuable en colère".

Intending authors should realize that the **Journal's** readership extends well beyond the ranks of academics and professionals in education to which they are likely to belong. While the content of an article is expected to stand up under the scrutiny of specialists in its field - during the process of review before its acceptance for publication - its language and tone should **not** follow the conventions of scholarly writing in such a way as to shut out the non-specialist. (Unless they are of exceptional clarity, the **Journal** does not normally accept articles intended for specialist audiences alone.) The terminology employed should be accessible to intelligent lay readers; and notes, tables, and other apparatus of the formal paper should be omitted or else kept to the minimum necessary for the purposes of an interested reader. In short, the **Journal** asks for the lucidity that is a hallmark of the expert.

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All such contributions should be addressed to the Editor, McGill Journal of Education, 3700 McTavish Street, Montreal, Quebec, Canada H3A 1Y2.

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