Global villages, local villages and the futures of tertiary education

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One of the great things about being a futurist is that you get to give lectures on things you know nothing about in front of people who are experts on the subject.

I am no expert on tertiary education, and most certainly not in New Zealand, and neither I nor anyone else knows anything certain about the futures. Oh, sure, I grew up on a university campus where my parents, uncles, aunts and their friends were all university professors. I was Danforth Fellow and a spent many summers at Camp Minawanka in the company of the finest teachers and philosophers of higher education in the world. I have been employed fulltime as a university teacher for more than thirty years--and never had a sabbatical, by the way. I have consulted with a number of universities in the US, Canada, England and Japan about strategic planning and the futures of higher education. And I have spoken on those subjects at conferences of SCUP or AIR in Honolulu, Toronto, and Baltimore.

Indeed, given my own experiences, I find it hard to believe that everyone's daily conversation doesn't revolve primarily around questions of what to teach, how to teach it, to whom to teach it, how to balance teaching and research, and how to oust, or at least outsmart, your Chair, Dean, Provost, Board of Regents, and especially the institutional research staff.

But the more I observe, read, write, think, and talk about higher education, the more I realize I don't know much about it, except this: There is no way in the world I would rather live than the way I and most of my colleagues have been able to live for the last thirty years and the way my parents and their friends lived for so many years before me--AND I know that there is no way in the world that anyone is going to be able to live that way for the next thirty years, or ever again.

While, as I said, neither I nor anyone else can know anything for certain about the futures, in the sense of being able to say with certainy what it WILL BE, I feel completely confident in saying that any attempt to understand the futures of teriary education, here or anywhere else, on the basis of the near or distant past will be doomed to frustration and failure.

The rate, magnitude, and forces of social and environmental change are just too great, too multiple, and too ignored for me to feel very confident about any futures of higher education which take the problems and possibilities of the present or recent past and, casting them forward, seek to deal with them as though they were THE future. Indeed, because that is the way, as I understand it, that most of you do deal with the futures, the futures of higher education look even more problematic than they need to. If the public, politicians,

corporations, faculty, administrators, and the Association for Institutional Research took futures, and futures studies, seriously, as I think they all should, but do not, and probably can not, then I, and certainly you, might be able to get a firmer fix on the futures and to design and guide tertiary education more adroitly into them than I believe we are going to do. [For good, but insufficiently "futuristic" views of the future of higher education see: Altbach & Berdahl, Aronowitz, Bok, Eaton, Fogel, Gilley, Koepplin & Wilson, Miller, Pecujlic, Schaefer]

Almost everything that has happened over the past twenty years in education--or in politics, or anything else--encourages me to take this view. I don't even have to contemplate the futures in order to think we are unprepared to meet them. I can come to that conclusion simply by contemplating the pasts.

Education in New Zealand. For example, in preparation for this conference, I read a report on education in New Zealand prepared by a team of three OECD examiners from Australia, England, and Norway, published in 1983. The opening lines of that report were as follows:

"We found substantial satisfaction among nearly all the groups with whom we spoke about the current performance of the education system. There were, of course, criticisms. But to an extent perhaps greater than in some other OECD countries, the parents, citizens, employers and workers of New Zealand appear to be reasonably well pleased with what is done for them in schools, colleges, and universities. That some changes in emphasis and direction are needed is freely admitted. But existing means for decision-making and consultation are generally believed to be adequate for this purpose, and we did not get a sense of alienation from, or disenchantment about, the political and administrative channels by which such changes may be achieved." [OECD, p. 10]

Now, the snickers you hear in the hall are coming from our New Zealand colleagues and others who know that beginning in 1984, only one year after the OECD report, and still continuing, that "substantially satisfactory" educational system, and the generally "decent society" [But see Bedggood, and Pearson & Thorns] which surrounded and nurtured it, has been systematically and purposely destroyed by that wave of economic fundamentalism, now ebbing and sucking us all into its brakish backwash, known locally as Rogernomics, and elsewhere by the names of other national worthies, leaving us all, as that American presidential pretender, Ross Perot, repeatedly has said, in deep Voodoo.

Now don't get me wrong. I am not hear to pick a fight with much less to cast aspersions at your duly elected government. I am not, under the circumstances, inclined to utter any words which doubt their sincerely of purpose any more than I doubt that Lady Margaret and the Marlboro Man were acting out of the purest of motives when they too presided over policies which destroyed, respectively, the economies and polities of the UK and the US.

No. To the contrary. Since they were all New Zealanders, I am certain they were one and all--and especially those in the Treasury--decent, wise, and well-intentioned, servants of the people.

Given that assumption on my part, I have had to cast about to see if I could find some other reason why a system, apparently so successful and so well-loved

[But see Clark, ed.], could have been so quickly and startlingly decomposed. And I think I found it. A few sentences away from the ones I previously quoted from the 1983 OECD report are these words:

"If our impression...is correct, education in New Zealand is saved from many time-consuming and frequently unproductive arguments that beset societies elsewhere. At the same time, it may be deprived of the stimulus to examine fundamentals and to redefine priorities that such debate can sometimes produce. Intellectual ferment can be exciting. It generates visions of what might be and stimulates a desire for change." [OECD, p. 10]

Now I think I understand. Treasury took the OECD report as a criticism, or at least as a challenge. While many people act, or rather don't act, on the assumption that if it ain't broke, don't fix it, Treasury was perhaps stung by the allegation that New Zealand was "deprived of the stimulus to examine fundamentals and to redefine priorities." Thus, by abolishing the UGC and instigating user fees along with EFTS-based bulk teriary funding; fostering market-style competition among, rather than central, professional and longer-range planning for, the various deliverers of teriary education; tending to stress teaching over research; involving the surrounding community in academic governance while at the same time following a corporate management model of university governance; and in general turning the primary goal of university education away from that of national development determined and paid for by the state into that of individual investment in marketable skills paid for by the personally-profiting individual--by doing all this and more, the educational system which the OECD examiners praised so highly in 1983 was transformed into something quite different [According to Patterson, and especially Codd, Grace, and Lauder in Middleton, et al. To the contrary, see Kerr.]

And I wouldn't want you to think that it was only education that has been transformed over the past several years. [For example, see Baird, Bollard, et al., Crocombe et al., Easton, Lange] Policies were adopted here, as elsewhere, which had the consequence of destroying the economies and polities of many nations without creating a sustainable and controllable global (or local) political-economy in their place. In other words, relatively contained processes of post-industrialism which futurists have been tracking since the 1960s were intensified by political policies and economic activities following from them during the 1980s without other policies suitable for dealing with the consequences having been created, or even seriously being discussed. [Bartlett & Steele, Block, Dembo & Morehouse, Garson, Hacker, Scott]

So my hat is off to those brave lads here and worldwide who created the situation we find ourselves in at the present. They certainly generated "visions of what might be" and stimulated "a desire for change." Or, even better, they--no, let me be truthful about it--we (each and every one of us in this room and all outside on every island and continent in the world) we all have acted over these past ten, thirty--or two hundred--or two thousand (or, if you prefer, 20,000 years) so that we now find ourselves, as William Irwin Thompson almost put it, "standing on the edge of history with the winds of change blowing through our teeth".

Never have we had a better opportunity to create a better world--and a better educational system to help create and inform a better world--than we have

today, right now, right here. What a fantastic chance and challenge we have for each of us to unleash our highest powers of creativity, imagination, and courage. The old systems are gone, and the fragments left behind are unraveling all around us. Can we come up with something new and viable, and do it this week?

Let's try.

So what I want to do for the remainder of my little talk is first of all to make some comments about what I think is happening now; then take a look at the astonishing and growing agreement among people all over the world concerning what should be done about it; and then show why what so many people want is probably not possible and thus that we need to refocus our concern on what is possible and urgently required. And finally I will end with some cursory observations about what this all might mean for the futures of higher education.

Are you ready? Here we go!

Economics. As I have already hinted, the end of industrial society and the long-heralded emergence of various post-industrial societies is now becoming too obvious to be ignored. Thus, though nothing works the way it used to work, and never will again, economists, money-grubbers, and policy-makers have been denying the obvious for so long (while acting so as to make the obvious inevitable) that few of us are able to take advantage of the substantially changed, and rapidly still-changing, situation. Levels of national, corporate, and consumer debt are stupendously high and growing almost everywhere in the world. Productivity in many places is unbelievably low. And, with the Cold War oh so regretably gone, R&D levels are now dramatically lower than the already low levels to which they had been steadily sinking for the past thirty years. In most cities, while towering monuments to individual poor taste, and empty wealth and greed, have sprung up over the 80s like grotesque mushrooms after a trickle-down rain, infrastructure of all kinds almost everywhere is dangerously decayed, and the housing (and other) needs of the world's rapidly growing poor utterly ignored. [Calleo, Reich, Rochell & Spellman]

The old middle class is continuing to be sucked away in one of two directions.Most are sliding down to swell the already swollen ranks of the poor and permanently unemployed, while others are moving up into the aviaries of the wealthy and over-employed. In fact, in some parts of the world, the absolute number and percentage of the wealthy has never been greater than it became in the 80s. This is one of the reasons we are so confused about what is actually going on with the economy. The large numbers of newly (and often only temporarily) rich have increased dramatically, and they are the ones we see on television, read about in the papers, and dodge as they hurtle about in their upscale foreign automobiles. Observing, and lusting after, the lifestyles of the rich and famous blinds many of us to the far greater number of the newly and permanently poor and empoverished.

And this is all happening in the so-called "developed" parts of the world. In much of the "developing" regions, where most of the world's population lives, needs are greater, resources smaller, and the future infinitely more threatening, hopes for a "Pacific Century" to the contrary notwithstanding.

Those of you who have encountered me before know that for years I have been saying that there would be a global depression in 1992. I am happy to admit that I was wrong. What we have instead of the sudden and disastrous worldwide collapse I forecast is a slow, prolonged, and deepening worldwide recession. While there certainly will be some upswings along the way, expect the decline of the official economy to continue throughout this decade and into the next unless, by some miracle, the Sleepers, Wake! [From Jones, 1990]

The Environment. I expect environmental awareness and environmental problems to increase substantially over the 90s and to replace commodified work and economic growth as THE major focus and concern of individual and community life. While no one can be certain of the characteristics of what is quaintly called "global change", no responsible person can say that nothing is happening or that we should not have long ago begun, and certainly therefore should not now begin, trying to slow and (since they are not likely actually to be slowed in time) actively to anticipate and prepare for some of the more serious and certain of the consequences of global climate and environmental change. [Brown, Evans, Mungall & McLaren]

Most people who correctly forecast the permanent end of commodified work expect to see either an increase in human leisure, or a return to what James Robertson calls "ownwork", which is craft and agriculturally-focused labor intensive, but ennobling, work. [Robertson. See also Henderson]

I don't doubt that ownwork might increase, but I don't see a bright future for leisure time. To the contrary, I would characterize the best possible desireable future in this regard as the emergence of a Caring Society, with the major focus of life being care for our environment, and a subsidiary focus being care for other humans who, because of our past and present evironmental and social neglect, require, and can expect, our love and attention.

As it becomes more generally understood that the reason for the death of Mother Earth is our irresponsible recent industrial, and before that agricultural, practices, activities and actors which seemed so natural and indeed praiseworthy in the past will turn out instead to be villainous. Somewhat the same fate lies ahead for them that poor old Christopher Columbus has enjoyed on this 500th anniversary of his misadventures. All short-sighted Captains of Industry too will be widely understood to have wrecked Space Ship Earth on the Shoals of the Limits to Growth, if not, indeed, taking us to the Reefs Beyond the Limits. [Meadows, et al.]

Population. The early environmentalists of the 1960s pointed out that it is very difficult for most of us to understand what is happening because many negative forces are growing at a multiplicative rate, whereas most humans can understand only additive growth, if we can really understand, and effectively anticipate, the consequences of any kind of change at all. Nowhere is this apparent inability more dangerous than with population growth.

One of the earliest scientific forecasts of global population growth was that of Heinz von Foerster in the prestigious journal Science in September 1960. Von Foerster plotted historical global population growth rates, and extrapolated them into the future. According to the formula he used, if historical and then-current rates of population growth continued, the date when the entire planet

will be covered with humans, and their numbers expanding off the planet to infinity can be calculated. That date is, he said, Friday, November 13, 2026. [von Foerster, et al.]

That forecast was generally greeted by hoots of derision. More than showing the limits to population growth, it showed the limits to extrapolation, most people said. It just can't happen. Humans are too intelligent to let that come about. They will do whatever has to be done to slow and to stop population growth.

One of my colleagues, Stuart Umpleby of George Washington University in Washington, DC, revisited von Foerster's formula, and compared what had actually happened with global population growth between 1960, when von Foerster's figures were first published, to the mid 1980s--about twenty five years later. Much to his surprise, inspite of a quarter century of environmental propaganda and some well-meaning attempts at population control, the actual population of the planet exceeded von Foerster's 1960 prediction. Thus, if trends continue, Doomsday will arrive well before 2026. [Umpleby]

Now, I am not here to tell you that von Foerster or Umpleby are making an indisputably accurate prediction. But I am here to tell you that though "something" will cause population to crash before their forecasted doomsday, I urge you to take their forecasts more seriously than the rosy, but still extremely alarming, population forecasts made by various UN and other population groups. Most "responsible" forecasts expect the present population of 5 billion souls to double to 10 billion by the early 21st century, and to level off at 15 to 20 billion sometime thereafter. As frightening as these forecasts are, they still seem far too optimistic to me.

Now, let me look at population growth from another perspective.

While the population of the world is growing catastrophically, some parts of the world are already experiencing population stability or population decline. Generally speaking, the population in Europe, North America, Japan, and this part of Oceania are stable or declining. Thus, it is the so-called "Third World" that has the most dangerous rates of population growth. The so-called "First World" is instead in a possibly prolonged period of population-induced stagnation as the proportion of old people increase and the proportion of young people decline.

But there is a more interesting consequence of this difference in population growth, and it is this. Mahdi Elmandjra, from Morocco, and a former President of the World Futures Studies Federation, has pointed out that broadly speaking, in the mid 19th century, the population of the world was roughly equally divided between whites and nonwhites. At the present, given the population growth differentials, the white population of the world is about 20%, and the nonwhite population 80%. If trends continue, by the mid point of the 21st Century--if Doomsday doesn't intervene--the white population of the world will be about 1% to 5%.

Claims of equity and compassion aside, I can find no more compelling reason for white Europeans, North Americans--and New Zealanders--to extinguish their unfortunate feelings of racial superiority and eagerly to embrace,

literally as well as figuratively, the fantastic world of racial diversity which is already well around us, but increasingly rushing towards us from the future.

We can understand almost nothing important about the population of the world, or any part of it, in the future by understanding the characteristics of populations of the present and the past. Whatever might have been the glories of Western Civilization over the past several hundred years or so, the glories of other civilizations, new as well as old, will now demand and achieve their proper places beneath the polluted sun.

Welcome them.

New Technologies. In my opinion, the driving force behind everything I have mentioned so far is technology. I look at new technology as the major agent of social and environmental change. [Dator, 1982] Certainly, what has made such rapid population growth possible is nothing more than new technologies and practices which have enabled more babies to survive into adulthood, and more adults to live longer.

Similarly, while some people still have doubts about the severity and timing of the various Greenhouse Effects, almost no one doubts that human activities, primarily those of the past two hundred years of industrialism, have increased the percentage of CO2 in the atmosphere, reduced freshwater levels, and drastically altered the landscape and the kinds and amounts of naturally-occuring flora and fauna everywhere. And no one doubts that these changes are due to the ever "new and improved" technologies of the industrial era itself. [Brown, Ellul]

Even the end of conventional economics which I discussed above is primarily because of new and emerging technologies. Although I did NOT mention this above, the reason anyone can imagine a future of material abundance coupled with a decrease in the amount of time people spend working and an increase in their leisure time is because of rapid developments in "labor-saving" technologies. Over the first one hundred years or so, these technologies generally reduced the need for human manual labor to produce goods and services. Over the last several decades, new technologies have reduced the need for much human mental labor as well, and the possible emergence of true artificial intelligence--long the dream of technocrats and other futurists--now may soon be realized. [Block, Burke & Rumberger, Glenn, Jones, 1990, Langton, Leebaert, Levy, Moravec, New Zealand Futures Trust, Rheingold, Simons, Zuboff]

Indeed, this is what is at root of our economic troubles now. We simply do not need the labor of many people in order to produce all the goods and services everyone everywhere in the world could possibly want. We have enormous material abundance of virtually everything. What we lack is an adequate system to get the goods and services to the people who want and need them. We have no good way presently to increase "effective demand."

The world was already faced with this dilemma at the end of the 1970s. In the West, we postponed addressing it by Reaganomics and all of the sister and brother "-nomics" around the world which re-ignited the Cold War, thus permiting the US to engage in an orgy of Keynesianism on behalf of the military-corporate welfare state and creating our huge and growing national

debt. We also vastly expanded and eased access to corporate and consumer--especially consumer--credit. This made it possible for "effective demand" to increase, without real income, productivity, or employment actually increasing proportionately. Thus overseas and often largely automated factories poured out goods which consumers obtained on credit. As a consequence, though seldom making headlines, in most countries, the consumer debt burden matches or exceeds the national debt. Levels of corporate indebtedness are equally astronomical. This is one reason why the great Reaganomic and clone economies have ground to a halt. "Free market" policies and practices were far less significiant in the 1980s than the rhetoric of the time implied. In many ways, the US was more nearly a temporarily successful "command economy" than an example of a sucessful "free market" economy.

Of course, in order for an individual to be "credit-worthy", she has to have a job, or be a dependent of someone who has a job, or act as though she is in school learning something that will enable her eventually to obtain a job. But everywhere, in all occupations, smart machines are replacing humans, dumb and smart.

This will continue.

And, as I pointed out before, just in time, because we need all the humans we can find to work with the new technologies to figure out how to survive the population bomb and all the greenhouse effects. It doesn't really take too much human intelligence to see that we don't need much more than 20% of the present labor force in order to produce all the goods and services the one hundred percent of humanity wants. We ought to be able to arrange that quickly, fairly, and effectively. [Block, Brown & Lauder, Bowles, Boyett & Conn, Coates (both), Jones, 1990, New Zealand Futures Trust] Addressing global change is somewhat more of a challenge.

But we had better do so, because the really dramatic technologies, the ones which will sweep away all institutions and values of the present and recent past, are emerging around us daily, with many more set to explode by the end of the decade and thereafter. These are the technologies based, not on the manipulation of the electron, but of genes and other molecules--so-called genetic engineering and nanotechnology.

The completion of the Human Genome project--perhaps by the end of this very decade, but almost certainly by some time in the next--will mean that we will eventually be able to identify the genetic component of every human physiological, psychological, and behavioral capability and expression. The implications of this are overwhelmingly numerous and staggering. It will bring changes to everything we know and do at present, and especially have known and done in the past--the definition and cure of disease; the understanding and limits of intelligence; and the meaning and modes of "normal" and "abnormal" behavior in all aspects of life from sports to criminality, from spirituality to politics, and of course education and training. [Kevles & Hood]

True "test-tube babies" with uniquely genetically-engineered characteristics seem highly likely, so much so that it is not far-fetched to imagine that any child NOT designed and augmented by its "parents" may bring suit against

them in a court of law on the basis that being "normal" is wrongful birth. At the same time, in anticipation of these and other developments, lawyers and genetic engineering firms are already trying to determine who gets sued by whom when a child programmed to have an IQ of 200 turns out to have one of 20, or when a nice 7 foot basketball player keeps growing unexpectedly until she is 15 feet tall. [Blank & Mills, Davis, Harris, Suzuki & Knudtson]

But the genetic engineering process is certainly not limited to, nor even at the present time primarily focused on, the manufacturing of new and better humans. Rather it is focusing on new and better ways to produce food (or, I should say, protein, minerals, calories, bulk, taste, visual and olofactory attractiveness, and all the other things "food" provides us at the present time). [Gaull & Goldberg. But see Doyle], Similarly, genetically-engineered and grown products of all kinds are emerging which will replace those which until recently had to be grown in the soil, harvested from the sea, ripped from the ground, heated, melted, combined, poured, molded and assembled in vast and labor-, capital-, and technology-intensive factories. [Foss & Rothenberg, Krimsky, US OTA "Biotechnology", Yanchinski]

Moreover, developments in microminiaturization, [US OTA "Miniaturization"] new synthetic materials, [Clark & Flemings], and especially molecular engineering, alone and in combination with genetic engineering, suggest the rather rapid demise of virtually all previously dominant processes, institutions, and values of industrialization and the emergence of the much more powerful, but essentially invisible and seemingly unintrusive processes (and institutions and values), of nanotechnologies. [Drexler, Drexler & Peterson]

Globalization. It seems also clear to me that the impacts of these processes are not restricted to one part of the world, though some parts of the world may presently lead in their development, and may sooner feel their effects than might some others. But these are global processes which I do not believe can be successfully avoided, or ignored.

The one thing that is not globalized at the present time, and does not immediately appear to be globalizing, is a way to anticipate and control these other global processes. That is why I and some other futurists tend to be concerned for the future, if not actually hysterical about it--and why I started out by tipping my hat to the local and global architects of Roger- and Reaganomics who so greatly contributed to the rate of increase in the past decade of, but certainly did not cause, the globalization of everything except a way to understand and control what is happening.

Localization. I certainly am not the only person concerned about the utterly reckless abandon with which we are mindlessly hurtling into an unknown but probably undesired future. At the same time the globalizing processes are proceeding out of control, more and more local people everywhere are trying to return to or, better, to refurbish and restore, ancient ways of doing things that have been insulted, abused, or at least neglected and marginalized over the past several hundred years.

This worldwide phenomenon--we certainly are seeing it in Hawaii--is nowhere more evident and pleasingly well-advanced than here in New Zealand. For one among many examples, in 1988, the New Zealand Ministry for

the Environment created a network of more than 300 persons as part of their Climate Change Programme. The report of the Impacts Working Group was 244 pages long and composed of 35 chapters, with several appendices. Preceeding all of these was a statement by the Chair of the Maori Working Group of the Programme. He reminded everyone of Article 2 of the Treaty of Waitangi and advised that "Western science should not override perceptions and values of Maori customary lore. Moreover, knowledge of the impacts arising from climatic change will be extended by Maori traditional forms of knowledge being recognised as valid as those of Western Science." "Recognition of, and provision for, a Maori values system in the climate change programme is essential for legitimising Maori attitudes to resource management and to the validity of the programme itself," the Maori spokesperson said. [New Zealand Climate Change Programme, p. 4]

Over the past decade or so, I have had the opportunity to survey most of the literature concerned with social change and the future from virtually all parts of the world. For example, in the late 1970s, I did some work on attitudes towards the future of the nation-state system. [Dator, 1981] Most recently--just a month ago--I completed a brief paper on attitudes towards the future of democracy which I presented at a conference in Islamabad, Pakistan. [Dator, 1992a]

My basic conclusion from both of those surveys, conducted more than a decade apart for very different purposes and based on very different resources, was essentially the same: When all is said and done, what every one thinks the future will be like is not what many people want the future to be like. Most people seem to feel, whether realistically or pessimistically, that nation-states, and the confrontational nation-state system, will continue, and that democracy will never be achieved beyond its present pallid varieties, while various forms of authoritarianism and fundamentalism (whether religious, political, or economic) seem to have a rather bright future.

But what so many, though not all, of these same groups and individuals in every culture in every spot of the world want for the future is their right and ability to express their own cultural uniqueness within some kind of a loose but effective system of global and truly democratic governance over all the global processes which the nation-state-based industrial system has set in motion. [Costanza, Daly, Eakins, Etzioni, Robertson, Rohter]

The almost universal agreement on what people want and what they fear will-be is amazing to me. More than anything else, it suggests a defining focus for education, and for politics, now and for the foreseable future. [Dator, 1992b, Orr]

But I regret to say I believe there is more to it than that. What people want may neither be what people will get, nor yet what they need. I am in complete agreement with the notion than modern science, as generally understood and practiced, doesn't have a clue what is going on and what to do about it. Indeed, at one level, "science" and the "scientific method" are the major culprits in the rape of the future. It is rare indeed when the rapist can offer much solice and comfort to his victim much less have anything approaching a genuine understanding of her situation.

But I regret even more to say that I do not know of any traditional culture which understands what is going on and what can or should be done about it any better than modern science does.

We are all aborigines living in a strange new land. No one has ever been where we are now, much less where we are going. [Drake & Sobel, Dyson, Finney & Jones, Wagar] Nothing in our formal educational system or in traditional ways of knowing can provide us with the wisdom and peace of mind we need now. This, however, is NOT an argument for rejecting either science or traditional ways of knowing. It is rather first a plea for all the help we can get, and secondly the acknowledgement that because no one can know for sure what to do, we need to listen to and try out as many different suggestions as possible.

In other words, the true value for the future of rising and increased cultural diversity, as I see it, is the same as the argument for the value of ecological diversity among plants and animals: the greater our cultural responses to the rapidly changing environment of the future, the greater the chance that some kind of human life might survive and prosper.

Let me make it clear why I feel that way. As I look over the globalized economic, environmental, demographic, and especially technological forces I summarized only briefly above, I come to one absolutely clear conclusion: Nature, in the sense of processes uninfluenced by human activities, does not exist anywhere any more. As someone must have said, because of agricultural and industrial processes of the past, there is no longer any place on, in, over, or under the earth where the hand of man has not set foot. Walter Truett Anderson has documented one aspect of this in his important book, To govern evolution. [Anderson, 1987] I tried to tie together some other strands in a paper I wrote a few years ago titled, "It's only a paper moon." [Dator, 1990] Economic, environmental, demographic, technological, and political/cultural developments since both of those things were published have only greatly reinforced our basic perspective, in my view. As the title of Walter Truett Anderson's more recent book says plainly, Reality isn't what it used to be. [Anderson, 1990] In that volume he has added to the biological evidence of the death of nature, the general post-modern argument about the death of "truth" and of socially-agreed upon "objective reality."

I take these views very seriously. And I hope you will as well.

Implications for education. But what, if anything, does this all mean for education, especially teriary education?

For one thing, it might mean that we inmates and custodians of the present forms and substances of higher education are at best utterly obsolete, and that our continued destruction by the invisible hand is ultimately going to be lamented by no one but ourselves. A darker interpretation would say that we are the cancer in the Belly of the Beast which is the primary cause of all that is evil in the world anyway.

I mean, the only reason politicians were able to convince 19th and 20th Century tax payers and philanthropists to part with their money to create institutions of higher as well as lower education is because we were supposed

to turn peasants and lords into factory workers and managers. [Fagerlind & Saha. See also Aitken, Codd, both in Clark, ed, and Middleton in Middleton, et al] While some crazy faculty member or two might have believed that he was being paid his miserly pittance to pursue truth and pass on to the next generation the wisdom of the past, the naked truth is that we were supposed to provide the human and technological grease that would turn the wheels of the mighty factories of industry which then would pour out the weapons of mass destruction and mass amusement of modern civilization. Whatever bespectacled professors might have thought, no student, no parent, no politican, and certainly no businessman every assumed otherwise. And for a while--for most of my lifetime and that of my parents--those of us in the ivyed halls of academe got away with pursuing our own ideas of truth at our own leisurely pace, protected by those incredibly selfish, precious, and fragile notions of tenure and academic freedom. We could do that because some of our colleagues were producing enough scientific and technological goodies to keep the industrial state going. We lived on their surplus, a surplus which was so magnificently squandered in the past decade, never again to be accumulated for our benefit.

Futures of education. Fred Rossini has said that the university of the future will be a network and not a place. Clearly, the old agricultural extension agents, the current colleges of continuing education and of distance education, the "open universities of the air" and the "global electronic universities" knit together by satellites and cable are the waves of the future. [Clark & Wawrytko, Fisher, Fratkin, Homann, Jonsen & Johnstone, Keegan, Koul & Jenkins, Nickerson & Zodhiates, Rossman, Saettler, Schuller, Thomas, Verduin] The old centralized college campus, where information resides in the print of books and journals, and, somewhat more hazily, in the minds of professors, such that for the information to get to the students, the students had to come to the professors and the libraries--these will soon be gone foreover. The one-two punch of economics and technologies is killing them. [Not that we need much help. See Sykes]

How do you feel about that, if it is true? Well of course, first of all, you don't believe it IS true. Or at least you hope so much it is not true that you might no be able to see evidence that it might be true. Or that it might be a good, positive, development, as well as one that, having more than a few dark sides,needs to be foreseen and anticipated, designed and shaped, instead of ignored in the hope it will not happen.

And what will people learn in such a world? What will they want to learn? What will they need to learn?

Here, too, the answers seem clear to me. In the intelligent networks of interactive virtual reality I see emerging, you learn whatever you want to learn, in any order you happen to encounter something about it. There is no set of key introductory courses which "everyone" has as the "mark of an educated person." There are no "advanced courses" which only the properly documented can access. You start wherever you happen to start and keep going for as long as you can stand it. [Dator, 1992c, Benedikt]

Years ago, Marshall McLuhan, reflecting on the effect of television viewing on young children, remarked that a child's education was set back six years when she entered the first grade. The various movements towards educational

fundamentalism in the 1980s have done little to change that. As John Goodlad said about American public education, after years and years of attempts at reform, your grandmother--by now, your great grandmother--would feel right at home in any classroom in the US. [Goodlad] What is taught, how it is taught, and why it is taught has basically not changed in the 100-150 years of public education. [Jones & Smith] Meanwhile, nature has died, and, if you believe some people, which I do not, history has come to an end as well.

Thus, I agree profoundly with Walter Truett Anderson that the most urgent task facing humanity is deciding to assume the responsibility for governing evolution, and then attempting to learn how to do it. As I see it, neither the industrialists nor the environmentalists, for the most part, have got it quite right. The environmentalists are correct in being concerned about the disastrous consequences to earth of industrial, and earlier agricultural, processes. But they are wrong in assuming that everything would be OK if we would just stop doing the things we have done over the last several centuries. They are wrong first of all because we will not stop doing them, and then, even if we do stop, the deadly effects will continue to be felt for some time into the future. Thus we need all of the talents and determination of the industrialists and many other people, most certainly including indigenous peoples everywhere, in order to invent and create a liveable and wholly artificial world. If we do not, we cannot expect to hope to survive.

It may be true, but it is not a useful argument against my position to say, that humans don't know enough about "nature" now to design and create a new, artificial one. Too bad! Why then did we act so irresponsibly in destroying her? We have no choice now. We cannot wait until we know enough. We have to do the best we can with all the forms and styles of knowledge we can muster.

I cannot imagine a greater challenge for education, at all levels and modes, to embrace. I cannot imagine the present system of education, especially the present system of tertiary education, accepting it.

Can you?

I very much hope you can, and if you can, that you will make your dreams come true.

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