

century ago's on-foot and on-horseback to our present around-the-world, jet-flown physical sweepout and around-the-world witnessing events through television—all emanating from the weaponry industry originating scientific technology.

Unquestionably, the old building arts will persist in many ways and in special tasks for a long time. Realization by architects and engineers, scientists, lawyers and artists that one hundred percent of humanity could be serviced at higher standards of living than any men have yet known by the total industrial resources of the earth, rather than the forty percent that are now so advantaged if man applies the high performance per pound capabilities of the aircraft industry to that task, is not only inevitable of discovery but inevitable of swift realization. If man does not apply this excess high performance capability to his livingry, the economic machinery of world industrialization will break down.

There will be many economic and political crises in the immediate future out of which it is safe to predict will emerge a world society intent upon converting its history-long experience and "survival-of-the-fittest-only" pattern to one of comprehensive physical success of man on earth. There will always be problems ahead—problems are the essential catalysts of growthful life. The problems of tomorrow will not be predominantly physical but predominantly problems of intellectual integrity.

17 The Future

All mature people are now aware of the constantly accelerating rate of evolutionary transformation engulfing all humanity. The speed factor, however, is only of relatively minor significance in the complex overall process of transformation of man's universal experience and the consequent regenerative evolution of man's day-to-day unfolding thought patterns, their induced new initiatives and realistically followed-through preoccupations. Not the least of the new preoccupations is that of dealing with historical-ly unprecedented magnitudes of multiplying wealth of productive capability.

In earlier yesterdays, the success of a nation meant personal economic success for only a few individuals. The immediate yesterdays' Western nations' joint prosperity, and particularly the economic success of crossbreeding world man on the American continent, has been historically phenomenal in the degree of its wide distribution of unprecedentedly high economic and technical advantage to the vast majority of its individuals.

The immediate yesterdays' most successful people are also those most humanly prone to stretch the after-image of the happenstance under which their success was realized beyond its economically

September 27, 1962. The original is an open letter from Fuller to "His friends amongst the university presidents, and deans and amongst heads of business and government establishments," which was to accompany advance copies of his *Education Automation* and *No More Secondhand God*, shortly thereafter to be released by Southern Illinois University Press. Deleted from the published version was the closing of the letter that addressed a comprehensive film documentation of Fuller "in development of these same thoughts" then being embarked upon by S.I.U.

valid limits. As a total consequence we now have world democracy potentially emergent at the historically highest level of economic and cultural effectiveness, yet momentarily becalmed in a doldrum stupor of mass-reproduced, world-around, split-second broadcast, news nonsense, serialized myths and obsolete local-focus hocus-pocus. Though Madison Avenue's advertisingly cherished, most desirable prototype of the U.S.A. citizen is purportedly the son of nine pioneering generations of an old and familiar local family and a permanent home-owning, geographically rooted fellow, today's typical Concord-Lexington, newspaper romanced minuteman resident is an M. I. T. professor, born in Budapest, high-schooled in Brooklyn, Ph.D.'ed at Stanford University, and off tomorrow for a post in Nigeria or a way station to the moon, and that new instant minuteman-American-crossbreed is indeed the prototype of tomorrow's scientist-world-citizen. With the exception of a swiftly dwindling minority of stay-putter residents, plus those who make a political business of staying put in order to exploit yesteryear's theoretically logical, and today's unrealistic persistence of a geographically based federal and state governmental representation of the democratic electorate. The widely ranging average U.S.A. family, as the federal census figures show, now leaves town *for good* every four years which is just about the time of the next election and will soon be leaving town permanently every three years. The average U.S. citizen's ecological acceleration is such that he will soon be disenfranchised for lack of adequate tenure of any fixed residence and that will make a "fine howdy-do"; out of it will finally emerge a dynamic, electronically articulate, constant world-democracy referendum whose computer-integrated voice and evolutionary wisdom will be stunning to all of yesterday's ignorant inertia and brilliantly competent in synchronized growth. Momentarily, democracy is walking, even running, in its sleep while minority-dictated political and economic world organizations push-pull it hither and yon. In concert with millions of other individuals, I am intent upon breaking out from our cocoon of impotence.

I am convinced that the breakout may only be effected by an intellectual reorientation and not by political revolution or world warring. *Ergo*, the following reconnaissance:

A half century ago the fundamental differences between Isaac Newton's universal norm of "at rest" and Albert Einstein's universal norm of "constant change" were only of academic interest. Today the economic significance of the replacement of "at rest" by "constant change" as the everyday normal condition upsets almost all of the traditionally practical stratagems of mankind. Yesterday the disruptive was abhorred; today it is welcomed not only by the intuitions of the young world, but also by the managers of mass production wheels. Yesterday's "square shooter" is today a boresome "square," which does not mean that our young world lacks or eschews integrity. It means that the young world's integrity is so trustworthy that it has been willing to jettison static security in favor of recognition of Einstein's dynamic norm. Yesterday's "rolling stones" who gathered no moss, meaning money, are today's big wheels receiving \$250,000-a-year³¹ salaries for keeping the changes in their corporate machines in constant evolutionary transformation at a rate anticipatorily synchronized with the generally accelerating total evolution of man's patterning in universe. Yesterday's moon shooters were lunatics. Today's lunatics have the highest academic standing and highest priority ratings in our regenerative investment economics.

Yesterday's symmetrical poesy and ecstatically violined liltings have become today's "corn," not because the young world has lost one wave length from its range of receptive tunability to the evolution regenerating universal energizations, but because the young world has found asymmetry as stimulating as symmetry; and in fact, that the spectrum range of human tunability is considerably greater than had hitherto been operatively accredited by man. The

³¹ \$250,000 in 1962, adjusted for inflation using the Consumer Price Index (CPI), is \$1.79 million in 2009 dollars. http://www.bls.gov/data/inflation_calculator.htm (accessed July 15, 2009).

young world has found the strange radiation doings vaguely identified by the word love to be equally present in the minor mode of music as in the major mode, and equally as effective in African drum-beats as in Viennese three-quarter time, and as equally effective in blue jeans as in black velvet and lace. The young world's emergent language as well as its thought is far more universal than yesterday's. Our young world realizes that Rudy Vallee's "If You Were the Only Girl in the World and I Were the Only Boy" is not only exclusive nonsense, but that realistically sustained happiness and welfare for anyone is utterly dependent upon the sustained happiness and welfare of the many.

The major significance of all the evolutionary symptoms of youth is that almost all of yesterday's fundamentally held and practical everyday causes and their resultantly adopted stratagems are obsolete; therefore, it is reasonable to suppose that, despite their venerated status, a large part, if not all, of our educational institutions and their disciplines are obsolete.

Better than ninety-nine percent of modern technology occurs in the realm of physical phenomena that is sub or ultra to the range of human visibility—for example, the dynamically operating functions of the transactions of information-processing within the black boxes of visibly wired static circuitry are entirely invisible. The invisible transactions oftentimes result in visual transformation of our environment. We can see the telephone wires, but not the conversations taking place therein. We can see the metal parts of airplanes or rockets gleaming in the sun, but there is nothing to tell us how relatively strong those metals are in comparison to other metals. Aluminum alloys as structural metals are commercially available which vary in strength so widely that some varieties are twice as strong, some four times as strong, and some eight times as strong as one class of aluminum. None of these varieties can be told from the other by the human senses, not even by scientists skilled in metallurgy, when unaided by instruments. The differences are invisible.

World society has throughout its millions of years on earth made its judgments upon visible, tangible, sensorially demonstrable criteria. We may safely say that the world is keeping its eye on the unimportant, visible one percent of the historical transformation, while missing the significance of the ninety-nine percent of overall, unseen changes. Forms are inherently visible and no longer can "forms follow functions," because the significant functions are invisible. * *

That era of essentially visible "modernism" is over. The architecture of superficial "functionalism" is meaningless and dead. What usually we speak of as our everyday world is a stage set with visible props which are easily manipulated by ignorant people to exploit the equal ignorance of others. The unreliable, uninformative and often deliberately misinformative scenery of that stage is soon to be radically altered due to the inexorable trendings in the sub- or ultra-visible alterations of man's relationship to universe.

The alterations are being made by scientists who are specialists, each preoccupied only with his special local evolutionary events. There are very few men today who are disciplined to comprehend the totally integrating significance of the ninety-nine percent invisible activity which is coalescing to reshape our future. There are approximately no warnings being given to society regarding the great changes ahead. There is only the ominous general apprehension that man may be about to annihilate himself. To the few who are disciplined to deal with the invisibly integrating trends it is conceptually probable that man will not destroy himself. Instead, it is increasingly readable in the trends that man is about to become almost one hundred percent successful as an occupant of universe.

As a consequence of fortunate circumstances, I found myself exploring in comprehensive anticipatory design science as a generalization of weapons systems design science to which I had been exposed at the United States Naval Academy almost a half cen-

tury ago. Weapons systems and their subordinate arts of logistics, ballistics and navigation are founded both separately and jointly upon the sciences of incisive prognostication. I have invested the last third of a century of my time in that scientific inquiry and have had enough success in comprehensive trend analysis to make major predictions without fear of misleading those who listen to me.

As I am not a professional entertainer, I do not make predictions just to provide "conversation pieces." I will only make predictions to those who take the trouble either to read or to listen to the logic which leads to those predictions and thus may assess capably their validity.

If my education-automation's trend analysis and prognostication holds good, those university architectural departments that have the foresight to organize their capabilities in such a manner as to implement the general trends cited will find their departments going from the bottom rungs of the university's budget-priority ladder to the topmost rung. This transition will be as sudden and as swift as it is surprising.

The utterly revised education of the architect will be such as to adequately prepare successful students to operate on their own initiative and not as the economic slaves of technically illiterate clients; and on their own initiative to deal both comprehensively and in effective depth in mathematics, chemistry, physics, biology, geology, industrial tooling, network systems, economics, law, business administration, medicine, astronautics, computers, general systems theory, patents and the whole gamut of heretofore highly specialized subjects.

The revised architectural education will fit the graduating architect to take over in due course the functions of yesterday's patron despots and economic dictators and, on the architect's own initiative, to effectively integrate and develop the significance of all the information won by all the respective disciplines of the specialized sciences and humanities.

The successful architectural training of that period soon to come will be such as to ready the architectural graduates to convert all the subjectively harvested and integrated information into objectively operating, technical advantages for world society in completely tooled-up and well organized comprehensive, anticipatory livingry systems. Up to now killingry systems, or weaponry systems, alone have been advantaged by the totally integrated, highest physical and scientific capabilities of man and his economically organized world energy, materials and money resources.

Weaponry systems consist of vast complexes, such as battleships, cruisers, destroyers, submarines, aircraft carriers and the carried aircraft, guns, ammunition, and the supporting line of supply ships and the whole of the weapons and ammunition-manufacturing industry—all supremely commanded by one highest authority—the commercial or political masters of the moment, the prime architects of the successive chapters of history. In a manner similar to the past evolution in weaponry systems the new, architect-designed, world-around, livingry systems will be realized in progressive, economic-industrial-plan increments predicated upon pyramidal reinvestments of the forward years' regeneratively amplifying and progressive techno-economic advantages.