

COURAGE TO CHANGE THE THINGS THAT SHOULD BE CHANGED

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"I am part of all that I have met;
Yet all experience is an arch, wherethrough
Gleams that untraveled world whose margin fades
Forever and forever when I move." Tennyson, "Ulysses."

To say that I am deeply honored would be an understatement. To say that I am proud would be obvious. To say that I am profoundly grateful can not be overstated. But, whom does one thank at a moment like this?

I must first thank my parents, who, in a world torn by war, guided me past youthful follies to my dreams, and brought me to the country where these dreams could be realized. I give thanks to my wife Patt, my love and companion, who laughed with me in good times and encouraged me in tough times for some 28 years. I thank our sons Michael, Theodore and Thomas for being my friends, tolerating my workaholic absences and accepting with great good humor my preference for sailboats over skiboats. Beyond my family, who have sustained me and nourished my soul, there were unique people in my life who stood at crucial crossroads and offered the chance to lead a rich and fulfilling life. It is also to these companions I offer my gratitude and whom I acknowledge today.

And so, to Neil Halpin, veterinarian, who gave a penniless immigrant a chance to pursue his chosen profession; to George H. Stabenfeldt, my mentor and friend, who taught me discipline, humility and the joy of research and discovery; to George again, and to Bill Lasley, who offered a helping hand during one of the blackest moments of my professional life, when I was told I was not worthy to be a scientist; and to Marie Joelle Thatcher without whom none of my research would have been possible -- to these colleagues I give a heartfelt thanks.

With that grateful acknowledgment of some the people who have helped shape me and my work, I would like to share with you my comprehension of the present and how it relates to what I hope will be our future. (Isn't it ironic? As we discover that age limits our personal future, we suddenly become visionaries of other futures?)

Will I surprise anyone if I say that our present looks bleak, if not desperate?

Our present personal and industrial practices are dooming us. We are being poisoned by our water, buried in our garbage and burned by ultraviolet rays. Governments seem to be reduced to paralysis or imbecility. Drug lords, rising to power over the bodies of countless victims, lead nations. Religious fanatics offer a \$100,000 bounty to would-be assassins for the head of an author (Salmon Rushdie), and bomb abortion clinics. Presidential candidates in a land founded on the Bill of Rights, promise to "fumigate the National Endowment for the Arts for supporting obscenity" (Pat Buchanan) -- can the sanitizing squads of "Fahrenheit 451" (1) be far behind?. In the light of these realities, the current infighting among politicians seems little more than a squabble for the deck chairs on a sinking Titanic.

This incoherence in political and social life is mirrored in personality disintegration: psychotherapist's calendars are filled months in advance; people join witch covens or rampage through supermarkets killing shoppers. The world is going mad -- Koyaanisqatsi (2).

But -- concurrently we have experienced the most profound changes for the good: in the wake of World War II, the first nonreligious effort to curb human cruelty was begun (Amnesty International), in the 1960's we saw the emergence of non-whites and women as wholly human, and the first successful protest of a people against the immorality of war. In the 1980's, after 70 years, began the disintegration of one of the most cruel and despotic governments of our time, the Union of Soviet Socialist Republics, thereby sounding the end of the Cold War. In the 1990's, the last white supremacist government was voted out of power in South Africa, and United Nations forces are actually keeping peace in Yugoslavia. Is this then also madness?

And so, we cheer the demise of Communism and the end of the Cold War. Raised as a son of an officer in the Russian Imperial Army, I watched with joy as the Russian tricolor was raised, replacing the hated Red Banner above the Moscow Assembly building. In my visits during 1991 and 1992 to Moscow, St. Petersburg, Kiev, I rejoiced at the openness and free spirit flowing from the people who were so frightened and withdrawn when I was there in 1975 and 1978. What glorious changes! But, one man's freedom may also be another man's license to steal, cheat, and grab personal power. To many citizens in that vast land, freedom has brought new suffering, civil war and deprivation --

"Russia has lost Russia in Russia....

...like an old woman madly stretching her hand in fog
searching with hopeless incantations for her lost milk cow."

E. Yevtushenko "The Loss" 1991

Our profession has not been exempt from this yo-yo scenario. There has been an unprecedented increase in public respect brought on by scientific advances and professionalism in

veterinary medicine overall and in theriogenology in particular. We can be proud of our contribution to new understanding of embryo manipulation, the use of computers in the management of dairy herds, to the studies in reproduction of endangered species. The growth and diversity we see in our Society and our College are clear testimonials to success. In contrast, we also see an increase of cheating in our schools, and apathy among young graduates who care more about days off than about opportunities to learn. In universities, we face a hostile administration that is more concerned with maintaining an image of excellence than about excellence itself. We face moral dilemmas about such things as the use of animals for food, and for research, and we feel a creeping loss of idealism. The pragmatism and materialism so prevalent in today's society are invading our own ranks, making us lose faith in our future.

What is happening to the world? What's happening to us? Why should we care about it?

Speaking metaphorically, I submit that we are in the midst of a parturition of a new age. The seemingly senseless events surrounding us are but the natural pains of dystocia. We are experiencing profound changes that are shaking the very foundation of our civilization. We need fresh ways to identify and deal with what is happening to us. The old ways, the ways that crises were handled 90 or even 40 years ago seem inadequate. As professionals, respected in our communities, we must provide leadership on a local scale because that is where the changes have to begin. We must not deny the changes. We cannot stubbornly insist on maintaining the status quo, bemoaning the storm that is destroying us. We must stand up, grab the tiller and guide our world to -- what?

Among the thinkers who have tried to understand our age I found two to be most rewarding: the first is Pierre Teilhard de Chardin, a Jesuit monk, paleontologist and mystic. The second is Alvin Tofler, the sociologist and author of "Future Shock" and "The Third Wave" (3). They were separated by some 30 years in their publication, and it is likely that Tofler was influenced by Teilhard. Be that as it may, both men write of humanity "entering a period of spiritual convergence" (4) and of our world "being on the brink of a quantum leap in history" (3). Teilhard is effervescent in his creative spirit as he envisions that our souls suffused by love will unite to form a sphere about our planet. This sphere of bonded love will keep our spirits alive, just like the sphere of air we breathe keeps our bodies alive. Teilhard's mystic vision is inspiring, but it is Tofler who delves into the realities of our lives and comes up with a positive plan of action.

Tofler speaks of history as a series of wave-fronts -- rolling waves of change that have shaped human social development and progress. The First Wave was the emergence of agriculture, about 8,000 BC. Although the First Wave had not totally

exhausted itself by the 17th century, it was then that the Industrial Revolution broke over Europe and unleashed the Second Wave of social change. The Second Wave spread rapidly across nations and continents. The First Wave is still predominant in some parts of the earth where the Second Wave has not reached (Amazon basin, Kalahari, New Guinea). Meanwhile the Third Wave, which is to replace the Second Wave and to be our immediate future, has already begun in the industrialized nations. It is the clash between the Second and Third Waves that we are experiencing today.

I would like to focus on a few aspects of this clash, aspects which I find most relevant to my theme. I believe that the lifestyle in a society is affected by some of the following basic items: sources of energy, kinds of tools, and means of communication and transportation. The lifestyle, in turn determines the social and cultural characteristics of a society.

During the First Wave, energy sources were for the most part renewable human and animal muscle power and the existing tools were designed to enhance that muscle power. The use of the machines and the knowledge of farming were simple enough to be taught by the father to the son, mother to daughter. Production of goods was not centralized. There was a lack of rapid communication and transportation, and a lack of universal education, but there was a strict division of classes according to birthright. These conditions resulted in xenophobic, politically inactive peoples who were selfreliant, not aware of time (punctuality) and were used to taking care of themselves and of "their own" through large families housed together.

When the Second Wave erupted over various societies, conflicts between First Wave Agriculture and Second Wave Industrialization brought on bloody protracted wars and social unrest -- the French Revolution, the Civil War in the United States, the rebellion of the Satsuma clan in Japan, the Bolshevik Revolution in Russia. "Primitive" peoples were either decimated because they were "not smart enough" to participate in the mechanistic rituals of industry, or they were paternalistically protected from their own naivite (the White Man's Burden).

Second Wave societies depended on irreplaceable fossil fuels to run the gigantic electro-mechanical machines that now did much more than augment muscle power. Massproduced consumer goods required rapid transportation, and management of giant complexes required efficient communication systems. Mankind had to fit into the system. Families no longer worked as a unit, and large extended families were no longer needed. Mom and Dad had little time to educate the children, and, anyway, they did not know enough about the increasingly complex world to prepare them for it. Schools built on the factory model for mass production, not only taught the three R's but also had to condition the child to Punctuality, Obedience and Rote. Although mass education clearly resulted in an improved standard of living and public hygiene, it

also produced a pliable, regimented personality prepared to serve the assembly line in the factory or office. Finally, the administrative needs of the colossal systems of production, distribution and merchandising brought on the oh-so-terribly familiar paper blizzard -- bureaucracy.

The overall result was dehumanization. Not only screws and bolts were standardized, but regional languages disappeared. A street in London looked like a street in Cincinnati, that looked like a street in Caracas. The demand for punctuality resulted in traffic jams, slavery to the clock and frayed nerves anticipating deadlines. Criminals were centralized in giant prisons, the sick were piled into hospitals, the emotionally disturbed were collected into lunatic asylums. "Big" became synonymous with "good", "growth" with "progress." The land was raped for what it could yield today, with little thought for tomorrow.

It is this world of the Second Wave, the world of the Industrial Civilization that is being challenged by the Third Wave, the Wave of the Future. More immediately, it is the struggle between those who wish to maintain the Second Wave society (for whatever reasons, be it greed, ineptness, or simply fear of change), and those who understand the need for the succession of waves to occur. For if we stay with the Second Wave, we will cease to exist as a species, and maybe even as a planet.

The needed changes must encompass the development of new energy sources and the development of technologies that use the new energy sources efficiently, and produce low amounts of waste. Above all the changes must free our personalities from the burdens of the First and Second Wave.

Four clusters of related industries are likely to become the backbone of the Third Wave: electronics and computers, the space industry, oceanics and aquaculture, and genetic engineering. Note that in addition to being miserly on energy use and low on waste production, these industries have an effect on civilization opposite to that of the Second Wave industries: central control becomes unnecessary and concentrations of workers in giant factories are dispersed into smaller units. The synchronized conveyor belt gives way to "flexible time" and while standardization in some instances will have to be maintained, the call for customized, nonstandard, clothing, food, appliances, cars is being felt in all industries.

As we deal with these changes, we need to be aware of attempts by various factions to discredit the Third Wave. We must not dismiss Third Wave advocates as naive dreamers, unconcerned with dollar realities and bedazzled by blue-sky technology. We must not confuse Third Wave advocates with remnants of First Wave supporters who call for a reversion to the pre-industrial past, a bucolic life of backbreaking labor and disease. And, finally, we must not confuse true Third Wave progress with dressed up

artifacts of the industrial age that use nonrenewable fuels, are inefficient and produce dangerous waste, for instance, nuclear reactors or coal gasification plants.

But the most significant changes coming with the Third Wave will be those in the social sphere. It is the new lifestyles already becoming accepted in socially advanced countries such as Sweden, that disturb and frighten those who are afraid of change, not tolerant of new mores, not ready to accept new ideas. These changes may be the hardest to face.

The nuclear family, traditionally defined as breadwinner husband, homemaker wife and two children, has all but disappeared. Many people choose to live alone. There is a growing number of single parents. Many heterosexual couples choose not to have children, while some homosexual couples fight in courts for permission to adopt.

Personal characteristics considered desirable in one's mate are changing: my grand-dad told me to pick a strong woman with wide hips and good teeth. In the 40's and 50's the operand requirement was "romantic love" as fed to us by the movie screen. What will the criteria be for tomorrow? As I watch my sons and my students, I see the emergence of desire for a partnership, a match in skills and intellect, making the couple of the future a multipurpose and not a narrowly specialized social unit.

Our own children have been forced to fit the mass production mold with compulsory, rigidly defined educational goals. Theoretically protected by Child Labor Laws, so necessary in the Industrial Age, today's youngsters have been molded into a nonproductive role, living lives which have no purpose but to sit and wait for "adulthood" (whatever that means). It is hoped that the future of education will be less standardized and more customized. Children, particularly teens, will be involved in meaningful learning and work at an earlier age.

The standardized, controlled image of the world presented by the monopolistic mass media of the Second Wave era is crumbling. Now we not only have the benefit of networks like CNN and TNT but also a plethora of customized ways to spread information: electronic mail, computer-linked access to libraries and news services, simple photocopied news letters. Did you know that in the former Soviet Union photocopiers were kept under lock and key? Can you imagine why? According to a Wall Street Journal article, the populist response of Russian people to the attempted coup was possible because one young Russian had access to a photocopier. And so Vanya next door and Sasha down the street learned from the copied fliers for the first time that they were not alone.

Tofler believes that the Third Wave arrived in 1955, its arrival signified by the emergence of the white-collar worker, the computer and the birthcontrol pill. I believe that the sign

of the Third Wave was the unprecedented, extraordinary movement towards social, political and psychological liberation that occurred during the sometimes maligned Hippy-Flower Child Era. With the beginning of the Age of Aquarius we questioned authority in the broadest and in the most personal sense: we demanded rights for our brothers and sisters, we ripped open the mantles concealing the corruption and baseness in the sacred cows of society -- religion, government, parenting. We refused to fight in a war in which we did not believe, and did so not as cringing cowards but as proud dissenters, willing to lay down our freedom and sometimes our lives for our ideals. Most importantly, we sowed new seeds of personal dignity and self-determination, of personal freedom, of unity among all mankind, and of a spirit of mutual support against oppression ("We shall overcome..."). I believe the seeds sown then, were responsible for the wave of self-determination that swept across the globe bringing on the challenge at Tianamen Square, the crumbling of the Berlin Wall, and the triumph at the Moscow Barricades.

It may be just possible that we have in store for our children and grandchildren something more than a "Mad Max" or "Terminator" world, something better than the "1984" scenario. Through all the turmoil and confusion, through the violence and fanaticism and corruption, there shine beacons of human caring that have appeared relatively recently in the fog: nonviolent refusal of peoples to suffer abuse by their rulers, the growing acceptance of differences in race and culture, the disillusionment with fanatic religions, the emerging respect for the dissenting opinion.

Our profession is deeply involved in the changes that are shaping the world of the Third Wave. We must deal with problems of animal rights and of the preservation of vanishing species. We must deal with fears of lay people who are frightened of science, and of the new biotechnologies. We must address the problems of dangerous waste, to which we as scientists contribute our share.

We must face the fact that our planet is shrinking and that what we do today will be felt across the oceans tomorrow. I have collaborated with colleagues and taught in Mexico, Venezuela, Sweden, Russia, and Germany. Through my personal experiences I have become convinced that the changes and challenges which I have described are occurring worldwide. Everywhere I looked, I saw some people recognizing the need to change their lifestyles, and I saw others insisting that yesterday's world was better. The conflict between the Third Wave advocates and proponents of maintaining the status quo rages around the world. Some interesting paradoxes have resulted from this conflict: did you know that in today's Russia Communists are considered the conservative right wing?

The Third Wave world is a world of the individual. The pigeonhole society of the First and Second Waves is coming to an end. It is as individuals that we will have to think, evaluate

and act. It is frightening to be an individual; to give up the luxury of being told what to do and the comfort of being able to blame someone for failures. It is difficult to accept others as individuals rather than as members of a certain class; to dismiss yesterdays stereotypes of success and failure and admit to oneself that color of skin, gender, or length of hair have nothing to do with ability and integrity.

Thus, all across the world we face a storm of changes and of resistance to changes. You and I face it as scientists, as theriogenologists and as private citizens. If we refuse to change, we may doom ourselves to selfdestruction. If we accept the change, we must be strong enough to change ourselves and wise enough to choose the correct changes. Can we do it? We must.

"....the deep
Moans round with many voices. Come my friends,
'Tis not too late to seek a newer world.
Push off, and sitting well in order smite
The sounding furrows;..." Tennyson, "Ulysses"

Various Sources Used, Quoted and Misquoted.

- (1) Bradbury, Ray : Fahrenheit 451. Bantam Books.
- (2) Coppola, Francis Ford : "Koyaanisqatsi." (A world out of balance -- Hopi Language) Film by Pacific Arts Corp. Inc. 1982.
- (3) Teilhard de Chardin, Pierre : The Future of Man. Harper & Row N.Y., 1964
- (4) Tofler Alvin : The Third Wave. William Morrow & Co N.Y., 1980.