Lifetime Learning

President Shapiro, regents of the University, colleagues, ladies and gentlemen, my fellow students:

At the outset I wish to express my profound appreciation for the honor your University confers on me and on my work upon this occasion. Thank you.

I have sometimes tried to imagine what it would be like to live in a world without change, where century upon century one generation after another would live in the same area as their ancestors, follow their ways, face the same natural and manmade environment, act within the same social structures, mores, and rules, and at death depart from a world almost exactly like hthe one into which they had been born.

In some times and places our predecessors may have existed rather in this fashion. During the millenia when they lived as hunters and gatherers, as all human beings seem to have lived until about ten thousand years ago, for most people life probably rotated, generation upon endless generation, around a fixed and essentially unchanging orbit, for periods of time at least as long as the several millenia that separate us from Homer or Moses. Living in bands of several dozen persons, which may have coalesced into small tribes of perhaps five hundred people, their social world was small, intimate, familiar, and over many lifetimes essentially unchanging in technology, structure, rules, and practices. Under such conditions, one could, I imagine, live out oone's life without ever confronting the perplexing moral

choices, uncertainties, and doubts that seem to have become so burdensome to modern and postmodern men and women. I doubt whether many of these people ever suffered from an identity crisis.

Given the fact that human beings lived as hunter-gatherers immeasurably longer than in any other way, and in relatively stable and settled agricultural communities longer than recorded history, one might conclude that the natural - and possibly even ideal - condition of humankind is one of stable societies and small, indeed very small, intimate, tightly bonded, highly cooperative, consensual, traditional, and egalitarian communities.

It is easy to see, then, why many of us often yearn for such a world. Yet no amount of yearning will bring it about. For our world - or a great deal of our world, at any rate - is not, will not, and I am inclined to think cannot be stable, small, intimate, and familiar.

Let me explain why by reminding you of some of the important features of our own world.

First, ours is a world of constant and irresistable change. In historic times - as, no doubt, in prehistory - the rate of change has of course varied greatly at different times and places. The rate of change also differs with respect to the infinite variety of features of the world known to us. Technology, for example, changes much faster than political institutions. Yet I share with many others the crude but surely not unreasonable judgment

that with respect to many features of great importance to us the pace of change, pretty much over the entire globe, has picked up in recent centuries : in knowledge, particularly scientific knowledge, in technology, in institutions - social, economic, political - in ideas, beliefs, attitudes, outlooks, mores, practices.

Second, our world is extraordinarily complex. In important ways the social, political, and economic world may well be increasing rapidly in complexity. Because the notion of complexity is itself not simple, and for most applications we really have no adequate measures, much less any satisfactory data, I would be hard pressed to substantiate that conjecture at all rigorously. However, our global village has more inter-connected things going on in it than any of its constituent villages, for our global society includes not only all the small societies but in addition all the relations among them. And the relations themselves - trade, power, flow of techniques and technologies - also keep changing, thus compounding the complexity.

Third, and following in part from the first two features, many of our most important choices take place in situations of high uncertainty. Our knowledge is simply not up to the demands we put on it. Even the most sophisticated and intelligent forecasts, buttressed by impressive theory and methodology, often fail to foretell even the short-run future, as we see again and again, for example, in economic and political forecasts.

A fourth characteristic of our world is that most of it is

inaccessible to us by direct experience. We experience the world, but we don't experience much of it. consequently, if our knowledge were based only on what we ourselves perceive, we would be ignorant about most of the world. I am not making a grand philosophical point about epistemology. I am simply calling attention to an obvious and elementary fact of our existence. While this has always been to some extent true, today most of our knowledge about the workings of our social, economic, political, and physical world, not to say of the universe itself, is based on inferences that are well outside the grasp of direct experience. And the amount of such knowledge is infinitely greater, I think, than it has ever been before. The world is, so to speak, so opaque that we cannot see very far into it without instruments, both intellectual and physical, and often highly complicated, that intrude between ourselves and reality - whatever under these conditions the word reality may mean.

What are the consequences for us who live in this kind of world? One is the rapid obsolescence of knowledge. Given the effort and money that have gone into your education, you and your parents may not exactly welcome this thought. Yet it is a safe bet that in fifteen years much of what you have learned in classrooms, seminars, and laboratories in the last ten years will be in important respects out of date. Paradoxically, the most rapid obsolescence will take place in precisely the areas where knowledge is firmest: the natural sciences. The past fifteen years, for example, have witnessed a revolution in our understanding of the world both at the subatomic level and at the other extreme the level of cosmology and the universe.

Much of what may not be partly obsolete in ten years, you will have forgotten. A melancholy thought, on which someone, like me, who has spent his mature life in teaching prefers not to dwell, is that you will not only have forgotten must of what we have said and written but our very names. Sic transit gloria mundi. A rough translation of that phrase might be: "My students will not only forget what was in those dazzling, brilliant, informative, and unforgettable lectures of mine but even the fact that it was I who gave them".

Another consequence of the nature of our world is that willy-nilly, we are all theorists. We are ever more dependent on judgments that are based less on knowledge gained from direct experience than on theories. To paraphrase Keynes, we are often most in the grip of theory when we are least aware of it. Important as practical knowledge is, and I do not wish to be understood as minimizing it in any way, its place in our total sum of knowledge is increasingly outstripped by theoretical knowledge.

Consider some familiar questions like these: Are barriers to competitive imports likely to harm the American economy in the long run? Should the Federal Reserve Board reduce interest rates? What are the fundamental causes of poverty? Of crime? Should we proceed with the MX missile? With the Star Wars program? What limits if any should be imposed on genetic transplants? Or consider how we understand our universe and our place in it. What is our universe made of? How and when did it come into existence? What is its future?

If the nature of our world is as I have described it, then learning ought to continue throughout our lives. Of course that always has been so, even, I suppose, in the more stable world of the hunter gatherers or their agricultural successors. But for the reasons I have mentioned the urgency of lifetime learning is infinitely greater than it has ever been.

That learning is a task one can never complete should by no means be regarded as discouraging. For one thing, it allows full scope for expressing the curiosity that is innate in human beings. One of the worst effects of formal education, whether in the primary grades, college, or graduate and professional schools, is sometimes to weaken rather than to strengthen our natural curiosity. If, as a result, one's marvelous capacity for intellectual wonder and excitement may be a seed buried beneath the snow, yet that capacity is still there, waiting to be cultivated. In a changing and complex world the opportunities for exploration are endless.

You may well ask, however, whether a world in flux and uncertainty does not leave one helpless, subject to implacable and inscrutable forces beyond one's control, and thus with little or no space in which to act as a free and morally responsible human being. I strongly believe that, on the contrary, a world of change presents us with many opportunities for influencing the direction of change. With the aid of our knowledge, we can help to determine whether the changes will move us toward the better possibilities, or instead toward the worse.

It is, I know, tempting to seek an escape from a world that is changing, complex, uncertain, and opaque. Two escape routes are particularly inviting. One is by flight into despair and paralysis of will. One can choose to retreat into the comfortable cowardice of believing that in a world like ours, reasonable and responsible moral action has become impossible. We are all victims, not responsible for what happens in the world around us. Consequently it is foolish and futile to try to act as a reasonable, responsible, moral being.

The other escape, which today is less common among younger people than a generation ago, is a flight into Utopia. No longer mere victims, we are now omnipotent. We see ourselves as weightless beings, capable of rising instantly and effortlessly beyond the confines of history and the human condition.

In the first view, because as victims we are utterly without freedom we are also incapable of moral action and without moral responsibility. In the second, because our freedom and power are boundless, we can reasonably expect to create a brave new world the day after tomorrow.

Both escapes are, I believe, illusory. As Tocqueville wrote at the end of the second volume of Democracy in America

> Providence has not created mankind entirely independent or entirely free. It is true that around every man a fatal circle is traced, beyond which he cannot pass; but within the wide verge of that circle he is powerful and free: as it

is with man, so with communities.

In the spirit of Tocqueville's conclusion, I would add that if we cannot bend the world to our heart's desires, neither are we enslaved by fate or destiny. A world of change and uncertainty provides all of us with some space within which to exercise freedom of choice. For those of us at this ceremony today, that space for freedom of choice may be substantial: perhaps far greater than it ever was for our ancestors. And freedom of choice, as I see it, entails responsibility for our acts.

Even if our world is forever changing, even if it is complex, uncertain, and rather opaque, we may still act, then, as beings who, because we can excercise a certain freedom of choice, are also morally responsible for the consequences of our own actions. Whether we choose to act freely as morally responsible beings, or instead choose to be indifferent to the consequences for others, is a choice that our world still allows us to make. If we do choose to act as morally responsible beings, how well we make our choices will depend, in part, on how well we understand the world in all its ceaseless change and complexity. And as I have said, to understand the world as best we can means a lifetime of learning.