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Lecture 5: On the Agonies and Ecstasies of Academic Acclimation

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ON THE AGONIES AND ECSTACIES OF ACADEMIC ACCLIMATION
"THE LAST LECTURE
"ON THE AGONIES AND ECSTASIES OF ACADEMIC ACCLIMATION"

This is a parable, of sorts, about petunias and people. It is a simple tale because I am a simple man, knowing very little about either petunias or people. Neither articulate nor eloquent, I am uncertain about most things. If one were to plot my level of certainty as a function of time, a maximum would appear somewhere between fifteen and nineteen years of age. Since then I continue to slide downward on the certainty versus time curve with the minimum nowhere in sight. This may be a consequence, to some extent, of the geometry of learning discouragement postulate which might be stated: As the circle of light increases, so does the periphery of darkness. It honestly bewilders me that I was invited to deliver this lecture, but I am sincerely honored to do so and grateful for the opportunity.

Each year the flower person of our family descends upon local garden stores to scrutinize and scorn; inevitably in the end dozens of potential petunias in various stages of development find themselves transplanted into patches of rocky soil near the Batty home.

Generally these petunias do remarkably well, considering the shock of transition from hothouse flat to a relatively hostile environment where they are exposed to battering by wind and sprinkler, blistering by sun, chilling by night air and unspeakable indignities by totally disrespectful canines.

Some plants just don't adjust to the imposed environment. Perhaps they do not develop enough root system or stem strength in the preparatory greenhouse experience, and so they die or remain
weak and sickly, failing to really thrive. Of course, there are many who do thrive and burst forth into full blossom reaching the full measure of their creation. These who make it go through a process of acclimation; they become tough and strong, able to cope with their new environment.

In this little flower fable we liken the petunias to people who are abruptly thrust into the sometimes inhospitable academic environment of a university. In this fable we consider both faculty and students to be people (although there is not always a mutual agreement on that point). Like petunias, members of the academic community must acclimate in order to survive. Our general topic then, deals with adjusting, toughening, coping, and even finding bits of ecstasy in the whole agonizing process.

It seems there are two major domains to this notion of academic acclimation. First, we consider those students and faculty who in coming to the university must either adjust to the academic atmosphere or strangle and become part of the academic fallout. Secondly, we will step back to observe the academic community acclimating in its environment, that of society at large.

Perhaps we could begin by a review of some things I wish I had known as a freshman.

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While I soon realized that the academic process is unfair as an idealistic freshman, I didn't understand that it can never be made fair. We should know that life in general is unfair. There are constant reminders. As an example consider two facts: (a) I am slowly going bald, and (b) in a painful but vain effort to make my face more socially presentable, I occasionally pull
hair from ears, nose, or between my eyes only to have hair return to the scene of the great rip out in prolific profusion. Is it fair for that same rejuvenating mechanism to fail so miserably only three inches higher on the head? Obviously not.

There is much frustration and unfairness about the classroom, but perhaps nothing more so than the grading process. To have one's efforts stamped USU certified F can be devastating, but it is often more traumatic if the expectation slippage occurs on the other end of the spectrum. Let me explain. A newsline caught my eye some time ago. "Amy was a straight A student until one semester Amy got a B. Amy hung herself, leaving a note which read, "If I fail in what I do, I fail in what I am.""

Many students labor under the same misconceptions as Amy, thinking it is they who are branded with that-engraven-for- eternity-on-the-transcript-grade rather than their performance in a certain highly specific classroom game. Unthinking professors often foster this destructive concept rather than the performance. It is vital that both students and professors who engage in this labeling game clearly understand what the label means. One whose performance is stamped F in a course in thermodynamics is rarely, if ever, an F person. In other things of equal or greater importance, such as whistling, that person may be superb. If I were to take a course in voice, my performance would inescapably be labeled nonredeemable F, but that, by itself, doesn't make me a failure as a person.

This may not be the most appropriate forum for a plea for a more rational grading system than we are presently using at USU, but trace with me the following not atypical procedure. The student comes to class and is informed that grades will be based
on a system in which points are accumulated during the course. At the end of the term, the instructor adds up the points and arranges the totals in descending order. It is required by official mandate to then divide the class into groups of A, B, C, D, or F. The instructor, cursed with a conscience, agonizes because most always there are students who receive "high" C grades whose performance is virtually indistinguishable from students who receive "low" B's. Similarly, there are those who receive C grades whose performance is barely distinguishable from some who receive D's, etc. The student experiences both anger and agony at the lame explanation, "We have to draw a line somewhere. If you had just made 90% instead of 89%--your cause is just, but I can do nothing for you." The grades are then delivered to the Records Office, and guess what they do with them. They convert them back to numbers, assigning four points per credit for an A, three for a B, etc., Then they have the audacity to compute the GPA to the fourth decimal place! It would remove some of the agony if the instructor, rather than the Records Office, were allowed to assign the grade points. No longer would we have to draw a line between two adjacent scores and assign one a C worth ten points for a five credit class and the other a D worth five points. The grade points assigned would reflect exactly what they earned according to the rules of the game. Evaluation of the transcript would be easier. At present the transcript gives no indication whether the D was a tightwad C or a generous F. Those who panic at greater precision in grading could simply award 4.0 points or 3 points or 2 points or 1 point, etc., per credit hour as is currently done by the Records Office. Then there's always the good old pass-fail mode for the super sloppy...
Here is something else many freshmen likely sense but aren't confident enough to say aloud: much of what is taught at the university as unassailable truth may not be true at all.

You might notice that graduate teaching assistants, instructors, and assistant professors often teach with a religious fervor, having unwavering faith in their discipline, but the old timers hedge a bit. (Well, most of the time anyway.) Remember how devoted homage was paid to Bohr's exquisite little model of the atom as the informed student dutifully visualized electrons spinning about a nucleus like tiny planets about a tiny sun? Even this beautiful, well-worshiped idol has suffered drastic and continual restructuring over the years.

We place nearly absolute faith in and balance industrial empires on the Second Law of Thermodynamics, but when applied to the universe as a whole there seems to be some fuzziness creeping into even that inviolable gospel. The list of examples of shifting truth is much too long to be tolerated here.

While there is good agreement that only part of what is taught in the classroom is true, a problem lies in deciding which part that is. It should be the mission of the university to continually examine and re-examine (search and research) the doctrine of the disciplines to find out which parts are true and which are not. We must never hesitate to submit our pro-mulgations to the most intense scrutiny; if something is true it should be verified, if not true it should be exposed and discarded.
Unfortunately, we often prematurely make a collective judgement as to the nature of truth and where it lies. Every effort is then made to prevent any further examination of other areas or what we ourselves view as the scrap heap. I probably cannot even broach the subject here without causing embarrassment in some and outright bristling in others, as it is not academically respectable to do so. I believe a striking example of academic myopia lies in the fields of geology, paleontology, and anthropology. The decision seems to have been made that only doctrines of the official state-sanctioned religion may be espoused in the classroom. Scenarios from the past based on a deep and abiding faith in the theory of evolution are routinely presented as firmly established fact. Theories that have even a hint of creationism associated with them are rejected without serious inspection. Science often takes a very closed-minded, unscientific approach, but it has always been thus.

Dr. Immanuel Velokovsky, who passed away just recently, became the focus of major conflict in the scientific world with the 1950 publication of his book Worlds in Collision followed by Ages in Chaos (1952) and Earth in Upheaval (1955). He suggested that immense interplanetary forces could cause convulsions in the history of bone and stone which we were overlooking. Because his work was revolutionary and rejected more than a century of developed thought, he was widely dismissed in the scientific world as a crackpot with little grasp of the real issues. An alarming number of his predictions regarding such apparently unrelated topics as the high thermal history of Venus, the wandering geographic pole of Earth, the chlorine shroud of Saturn seem to be justified as space technology allows the accumulation of hard
data. Of course, these can be dismissed as lucky guesses. Or can they?

I am suggesting then that as students we be wary of textbooks and teachers which present material in an absolute manner without prefacing the story with "according to our present model," "it seems consistent with available evidence," or even as Walter Cronkite put it "That's the way it looks tonight!" Those who don't "hedge" do us a terrible disservice; they tend to close our minds to alternatives. Universities have been accused of suppressing or even killing creativity. Perhaps this is one of the reasons why.

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Here is something else many freshmen fail to grasp: I believe most of us are capable of understanding abstract theory, be it in mathematics, physics, or art, no matter how seemingly complex, provided we anchor it to something in our experience and let it expand from there. One of the ecstasies of teaching for me is to watch the eyes of a tired, jaded student light up with the realization, "Hey, I can actually understand this stuff. Maybe in this course I won't have to just memorize and fake it as best I can."

Again, a personal example or two. In graduate school I struggled to compete in advanced courses with students whose neurons simply flashed faster than mine. But I discovered that complexity was reduced by visualizing a related physical example with which I was familiar. In kinetic theory the behavior of heavy and light molecules was related in my mind to the goings on in a pen filled with fast flying hummingbirds and slow flying turkeys. In solid state physics, recollections of matinee movies showing Tarzan attempting a dramatic vine-swinging flight from
tree to tree during a violent storm helped describe the plight of valence electrons moving through a wildly oscillating crystal lattice at high temperature. A seemingly difficult dissertation problem in describing the chemical kinetics of gas-solid interface reactions was broken open by visualizing invading gas molecules streaking in to react with the surface as seagulls poised over a field of swarming crickets looking for a spot to land to take on a load. The key was in realizing that occasionally both hungry seagulls and invading molecules are forced to make false passes over the crowded field of action.

The take home lesson here I believe is: any theory or postulate simply memorized without root or anchor will either die or drift quietly away.

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In the context of our topic of academic acclimation, would you follow me through the next few thoughts and not reject them out of hand? I believe in education we need more emphasis on the nuances differentiating selfishness and self-respect, personal dedication and personal destruction.

We are bombarded by a vast educational effort via movie, T.V., the written page, and photographic essay encouraging us to embrace the philosophy of using whomever or whatever we will in search of kicks. Recently, "Me First" type best-sellers offering sophisticated strategies for ripping off your neighbor have streamed from the presses aimed at everyone from teenage entrepreneur to corporate president.

Professionally written essays on any subject are advertised for sale in campus newspapers. Flagrant cheating in the classroom is tolerated by weary professors who haven't the strength or the
time to fight the lengthy appeals process available to an accused violater of the academic code. Every generation has wrestled with moral issues at some level, but it seems lately we are afraid to even discuss "standards of conduct" at a state university for fear of being sued for attempting to impose our values on others.

It seems to me that the aggregate wisdom of the ages suggests selfishness never was happiness and in the long run users are losers. I believe, be it people or resources, if you use big you will eventually lose big.

We should understand it isn't selfish to take whatever steps are necessary to maintain our own emotional and physical strength. I see students irreversibly damaging their mind and body as a result of trying to accomplish too much in too short a time. Overload is sometimes necessary but sustained overload is stupid and will result in burnout.

The opposite approach is also destructive. You might regard your mind-body system as a dynamic but symbiotic duo. One is useless without the other. It makes little sense to come to a university to fine-tune your mind in the process and damage the total system. For a student to subject this dynamic duo to mind bending via the drug or alcohol route makes as much sense as trying to program a computer with a sledge hammer. Such behavior is at once selfish, self-destructive, and more than a little crazy.

While I believe selfishness is not a virtue, self-esteem is. Lack of self-esteem shows up in the darndest ways. I believe it is reflected in the student who is overly aggressive in the classroom, constantly attempting to verbally impale the teacher against the chalkboard. Such a person probably also enjoys
pulling the wings off flies and never knew love at home. The same kind of unhappy insecurity is seen in the faculty dissident who attempts to right perceived wrongs with the dynamite of the news conferences or the bludgeon of lawsuit rather than reasoned thought and persuasive argument. One might conclude such efforts are directed at inflicting pain on the institution rather than correcting its course and, unless the dissident considers himself totally estranged from the academic community, such tactics must be regarded as masochistic.

Our education should give us enough inner security that we need not be offended nor teach our children to be offended in the face of calamity such as hearing someone utter a prayer in a public place. We should strive for a level of self-assurance that will enable us to be concerned, but not hysterical, inspiring, but not inflammatory, skeptical, but not cynical, brave, but not foolhardy, constructive, rather than destructive, self-respecting, but not selfish.

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It may be helpful in the acclimation process for both faculty and students to occasionally consider the questions: What is honor? Who is honorable?

This lecture is sponsored by the Associated Students of USU and the Honors Program. The stated aim of the Honors Program is to give the superior students of the university an opportunity to read, discuss and write about significant facts and ideas. I ask those of you in the Honors Program—are you there because you consider yourself superior thus making it a falsely-based elitist organization, or because you truly hunger for extended opportunity for learning? I trust it is the latter. Remember
that no man ascribes honor unto himself but he that is recognized by society —— George Washington (for example).

Society has various ways of rewarding that which is honorable. Do we assign honor by tradition? To be a shoemaker has traditionally been a humble vocation but not so any longer. The designers and manufacturers of the molded runner are strictly big operators.

Do we assign honor by money? Sometimes we do. Consider someone who is reasonably proficient at directing a 24 centimeter sphere through a 44 centimeter hoop. It is not unusual for such a person to be paid ten or twenty times the salary of one who is proficient at directing the affairs of a major university, an entire state, or even the nation. Which is more honorable? Of course, we, on whom society refuses to shower wealth, rationalize about rewards other than money.

In selecting a career we should ask ourselves: is it honorable? Will it be rewarding both personally and to society? The trauma of selecting a career can be reduced by realizing that one can, and perhaps should, have multiple careers with each one branching out from the other. I ask your forgiveness again for using a personal example.

Within one ten year span of my life I was intimately acquainted with hog rations, lambing pens, fat calves, Holstein hooves, tails and udders, corn silage, hay leaves and sweat. I worked in a service station as a gas pumper, car greaser and people greeter, in the construction business as a hole digger, steel framer, concrete carrier and nail slammer, and in the oil fields as a roustabout, roughneck and bookkeeper. In the consulting
engineering world, I was a concrete tester, soil compaction
expert, sidewalk and subdivision planner, and city council
scapegoat. I designed municipal water systems, large irrigation
structures, bridges, and highways.

Shifting gears, I returned to the university environment to
teach 23 different subjects in a three year period, which exercise
nearly produced a mental hernia. Next came a period of exile for
me and my family while I acquired a doctorate emphasizing yet a
new area of endeavor. As part of the national response to
President Kennedy's directive to put a man on the moon and bring
him back alive, I worked for a couple of years on problems re-
lating to ablation rates of re-entry vehicles.

And then I turned 30.

The next ten years brought challenges which, to me, have been
equally exciting and varied but to endure the description of
another decade is more than can be reasonably requested of anyone.
I believe you have the point that learning should be an ongoing
life process that gives one ever greater freedom in vocational
endeavor.

Let's consider further some of the agonies associated with
choosing an initial career.

There is an undefined caste system at the university.
Students of certain disciplines tend to regard themselves as
superior to others for various reasons, but the nice thing about
it, I suppose, is that those considered somehow inferior often
have entirely reciprocal feelings. Please forgive this bit of
limericking; sometimes an irrepressible urge overpowers me and I
can't control myself. There's a point in the poetic travesty which follows - (I think).

The honorable student at USU
Asks what shall I study, what shall I do?
Perhaps philosophy
Would be perfect for me
Because I'm much brighter than you!

If that worketh not out and something else I must grab
At physical science I might take a stab
My intentions are pure
But can I endure?
That terrible odoriferous lab.

I might even consider the practical guys
For as I look around I do realize
With the weld or the grind
Quick money I'll find
But for brains there's no special prize.

Now what comes next? Could I ever fit here?
The very thought fills me with trembling and fear
As I contemplate
That most horrible fate
Of becoming another dumb Engineer!

At a university there are varieties of people but gradually
an awareness develops, even here at Utah State, that there are
two main camps. As identified by C.P. Snow in the famous
Cambridge Lecture of 1959. The Two Cultures, those camps are the
Technologists and the Humanists. Though the camps are apparently
more friendly here at USU than at Cambridge of 20 years ago, the
schism exists. One marked manifestation of that schism is
evident in the tone of the restroom graffiti in various sectors
of the campus. On the Engineering Building walls one can observe
algebra and calculus lessons: in various stages of completion,
evidence of frantic students using every available moment.
Occasionally, true desperation shows up as indicated by one memorable quote:

The world is a ratrace
and the rats are winning.
trudged "across campus" to seek aid and comfort in a crusade to establish a required course for engineers called Technology and Human Values. The notion of the course was well received but the idea that an engineer could be qualified to teach anything remotely connected with values caused severe inflation among the eyebrows of the highbrows. Eyebrows rose nearly to the ceiling in several of the offices I entered. I was invading sacrosanct territory. I mention this issue in connection with our topic of academic acclimation for reasons which I hope will become evident.

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A successful acclimater must anticipate and prepare for the future to the extent possible. Imposed change is so rampant in the university today that many of us are dying from future shock paralysis.

The business of predicting the future has graduated from the palm reading, tea leaves and crystal ball approach to becoming a semi-respectable academic specialty complete with meetings, journals, and books. One can read most any kind of scenario about the future ranging from absolutely optimistic to perfectly pessimistic. Listen to these examples quoted from an agenda for the 1980's by Edward Cornish as published in The Futurist, February, 1980, The Optimistic Scenario:

"New communication devices will spearhead a parade of new technological devices that will solve most of the pressing problems of the 1970's. Microprocessors will vastly increase the efficiency with which energy is used enabling people to keep their homes warm and drive their automobiles with far less expenditure of fuel
than is now required. Breakthroughs in energy production will substantially free the world from its enslavement of petroleum and natural gas. New birth control methods in the developing countries will curb population growth in the developing countries thus making it possible for them to advance economically. As the nations move toward the anticipatory democracy mode, with huge electronic town meetings involving millions of people, the world will move rapidly toward peace and prosperity." The Pessimistic Scenario by the same author:

"The world economy will deteriorate badly in the 1980's due to high population growth, the exhausting of natural resources, failure of nations to curb inflation, and soaring debt. The developed countries will face soaring unemployment; the developing countries will experience mass famine. Revolution is likely. As political chaos mounts many democratic regimes will collapse. Major wars—both civil and international will occur, and there is the possibility of World War III."

The plain truth is that the future probably cannot be reliably predicted by professional futurists. A few things like the reappearance of Haley's Comet in November of 1985 have very high probability of taking place, but in general when reviewing the track record of these prognosticators, one may indeed observe:

"Never have so many been so wrong about so much." Perhaps you recall the promise a few years ago that by 1980 electrical power produced in nuclear reactors would be too cheap to be metered.

As one wise man pointed out "on a clear day you can see practically nothing."
While it is extremely presumptuous to make predictions about the future, there are some monstrous forces at work in our society which we cannot ignore. Let me explain.

We live in a society where one can earn a quarter's tuition fees for a major university like USU in less than 40 hours of holding a stop-slow sign on a construction project. The balance of the cost of education is provided by the taxpayers. Such a system enables a large fraction of the population to enjoy a university education. In history this is unique. Simple probability suggests that among the billions, there have been minds more brilliant than Einstein or Socrates, more talented than Mozart or da Vinci; these minds were never heard from because they lived under oppression, without opportunity. As pointed out by J.H. Plumb,

"No one in his senses would choose to have been born in a previous age unless he could be certain that he would have been born into a prosperous family, that he would have enjoyed extremely good health and that he could have accepted stoically the death of the majority of his children."

Anyone who is into genealogy can observe that in Eighteenth Century Europe the average age at which people married was probably higher than the average age at which people died; the average life span was one third that of ours, and probably due to childbirth deaths, the average lifespan of women was considerably less than that of men.

The opportunity for higher education for so many of us comes about at least partly because our society has decided that education is important and partly because we are a rich enough nation that we can afford it without undue sacrifice. Unfortunately, these conditions may not long endure.
We are getting poorer. In 1979 we sent 65 billion dollars to the oil exporting nations in exchange for the oil we imported. We are so calloused by living in a Megabucks Media that such a statement requires further clarification. As Andrew Tobias points out, rather than sending 65 billion dollars we could have traded them 32.5 million acres of prime farmland at $2000 per acre or approximately the entire state of Iowa. This year we will trade them Wisconsin (or its equivalent value). To keep going we could the next year trade IBM plus RCA, General Motors, Hollywood, and the revenue from all our motion pictures. The next year we might offer them our total steel industry plus three or four of our smaller states. (Adapted from Inflation by Andrew Tobias, Esquire Magazine, Copyright, 1979.)

Every elite society has had slaves in one form or another and ours are machines and the oil which drives them; our slaves are becoming anemic and we are growing poorer. In truth, our economic jugular is laid open and we are hemorrhaging! Only time will tell if this national hemophilia will be fatal. Many nations have prospered on substantially less resources than we yet have in this land of the free and home of the brave, but maintaining prosperity on reducing resources requires increasing productivity—not just hard work but harder, longer, more creative work by more people.

But that doesn't seem to be in the wings, as we have been conditioned to educating longer thus delaying entry into the work force, retiring sooner, and working shorter weeks. Increasing productivity is both a social and technical problem of monumental challenge.
But what does our getting poorer have to do with a talk about academic acclimation. The answer I believe is plenty.

Let's go back to the petunia-people analogy that we started with. What happens if the water and nutrient supplies to the petunia patch are drastically reduced? What will happen to the petunias in this situation when the water no longer automatically flows down the pipeline and through the sprinkler, generously showering the entire petunia patch with life? Even though the gardener loves all of the petunias there are, of course, some varieties that are perceived to have greater value than others. At first the weaker, more reluctant bloomers are eliminated, but as the situation worsens there may even be some heart-wrenching uprooting and discarding of rather lovely plants in prime condition. To save the favorites it must be done.

Then comes the agony of deciding who are the favorites. Which varieties have the greater value to the petunia patron who now carries water to them in a thimble.

Each variety might rationalize: "surely I have the greater value. The water should come to me." There may even be a tendency for one variety to impugn the virtues of the other variety saying surely we can get along without them.

If you are still following this entangled tale of intrigue perhaps there is no necessity for explanation, but could we specifically apply the parable to the two broad camps we have looked at earlier—the technical and the humanist camps.

The technically-oriented person feels justified in saying: "It would be idiotic to quit pouring money on me and my program. We offer the only possible hope for finding solutions to the immense problems of energy shortages and providing food and medical
care for the world."

The humanist feels justified in saying: "You have suicidal inclinations to even consider reducing my money supply. The great challenges of political and economic stability and avoiding war, are basically humanistic-social problems and can be solved only by those who have truly a panoramic awareness of history, literature, psychology, and the arts."

Hopefully it is not a "them" or "us" situation. Perhaps one solution lies in the realizing that if the different varieties of petunias were brought closer together they might both be nourished and the essence of each would not only survive but a stronger, more hardy hybrid variety might evolve.

In today's highly technological society, it is often the person with technical training that scrambles to the top of the executive ladder because of the technical nature of the company and its product. We desperately need those people to be exposed to the thinking of great humanitarians. It would be a national tragedy if decisions were made which would reduce the impact of humanities, arts, and social sciences on the technically oriented manager.

There is a determined cry from the taxpayer for what is termed greater real-world relevance in education. Graduates of liberal arts curriculums armed with diplomas costing twenty or thirty thousand dollars are frustrated to find almost no one willing to pay for an in-depth interpretation of Victorian poetry. One has much greater viability in the market place if one could also solder a connection, thread a pipe, program a computer or design a solar engine.
There may be a feeling that to be vocationally-oriented is somehow demeaning and precludes the pondering of weighty esoteric matters. But examples to the contrary are many.

Russian human rights activist Andrei Sakharov, is also a nuclear physicist. Eric Hoffer earned his living as a stevedore. Thomas Jefferson was a planter, and Leonardo da Vinci a craftsman. Jesus of Nazareth was a carpenter.

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We must wind this "Last Lecture" down. You have had ample opportunity to observe that for Batty's cup the spigot on the barrel of profundity refuses to open. I know full well that these words will be neither noted nor remembered. None of us should take ourselves or our own words too seriously. I sincerely hope, however, that these remarks have pointed out a few ponderables. Despite the overwhelming evidence found in letters to the editor section of the Statesman to the contrary, the university experience does go beyond surviving such heart rending poignant episodes in human drama as where to plant the flowers and park the cars, what brand of shuttle bus to buy and where it should make stops, or how to allocate shelf space in the bookstore.

In summary it is a grand privilege to attend a university and while many of us are a little short on brains, we are all very long on opportunity. We are not particularly elite, just particularly lucky. But as has been observed before, "the times they are a-changing" and we must change with them if we are to survive.

Successful acclimating to us all!