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MINNESOTA-NORTH DAKOTA ACADEMIES OF SCIENCE, 1994[†]

ROLAND DILLE, PAST PRESIDENT, MOORHEAD STATE UNIVERSITY

A colleague, hearing Dean Judy Strong ask me if I was ready to speak on the future of education, said, "We had five speeches on that subject during winter quarter. Is there anything left to say?" Which is another way of asking, "Was there anything to say in the first place?"

A speaker who allows himself to be saddled with this topic must either pretend to be a prophet or claim the wisdom to prescribe the future.

I have a more modest goal than either of those. I want to suggest some fears I have for the future and to admit to some hopes.

I will begin, as I so often do as I get older, by a look into the past.

C. P. Snow, Sir Charles Snow, was born into a poor English family. With an early understanding of his abilities, he decided that his best chance of moving ahead in life would be as a scientist. He was only partly right about that. He became a physicist and then, in the 1930's, a particularly exciting time for physics, he began to take on the responsibilities of administration, explaining the needs and possibilities that would secure government funds, organizing research projects, dealing with temperamental scientists. It was a period of great discoveries and of an almost immediate transfer of the fruits of basic research into practical applications, a partnership that became more and more important as England moved towards war and then into the war. Snow played an important role in mobilizing scientists for the war effort.

But there was another C. P. Snow, and with the end of World War II he became a highly successful novelist, while still retaining his government positions.

He was to write a series of novels, eleven in all, about the academic life, a series with the over-all title, *Strangers and Brothers*. Critics have withheld from his novels their highest praise, but I must tell you that I have read his novels with great pleasure, the kind of pleasure that in a serious reader must include a sense of an increasing understanding of human nature and moral complexity.

He moved easily among scientists, on the one hand, and among artists, writer, scholars and critics on the other.

It was that duality in experience and outlook that led him, in 1958, to write a long essay entitled "The Two Cultures and the Scientific Revolution."

"The Two Cultures" begins with a statement of the lack of communication between scientists and literary

men, of their "mutual incomprehension". Literary people are certain that scientists are uninterested in the traditional values that are the province of literature, that few scientists have even read a play of Shakespeare. This Snow agrees is true. But, he says, to ask a writer to explain or even recognize the Second Law of Thermodynamics is to be responded to with hostility, although the Second Law has for the scientist the kind of centrality that Shakespeare has in literature.

But this balance of blame soon fades. It turns out that not only is the ignorance of the literary person more reprehensible than the ignorance of the scientist, in the scientific culture lies hope and in the literary culture lies despair.

Because, Snow says, the future is "in the bones" of the scientist. That is, the great problems of the world – hunger, pain, war, poverty – can only be solved by scientists, who bring to such problems not only minds that can provide solutions, but the scientists' buoyant faith that things can get done. Because, says Snow, the scientists of the West and the scientists of the Soviet all belong to the scientific culture, they can talk and it is to them that we must trust for the solution of what was, in 1951, the great danger, the confrontation of America and Russia. Writers and artists, on the other hand, deny the future.

The traditional culture, intent on individual tragedy, has little concern for the terrors of the human condition, is, indeed, dedicated to keeping things as they are. "It is," he says, "the traditional culture...which manages the western world". This is a very strange statement. It was a poet who said that "poets are the unacknowledged legislators of the world"; a radical poet, Shelley, who believed that the world was mostly bad and that the poet, with no real powers, could nevertheless touch the minds of his readers with the truths of the human heart, to the end that some, at least, would struggle for a more humane world. In reading Snow on "The Two Cultures" I am reminded of the story of the old Quaker and his mean cow.

I have no wish to re-open a quarrel dead now for almost forty years, but there are ideas and suggestions in the essay of Snow and in the responses of his adversaries that are worth thinking about as we look to the future.

Among other things, Snow is calling for a greater emphasis on science in the education of the young. The traditional education of the young in England,

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with its emphasis on the humanities, can be seen as the education of the aristocracies, that is, of the powerful; perhaps, as Snow says, those who manage the western world.

As we look into the future, we need to ask who it is who really manages the world. It is, I am certain, neither the scientific nor the traditional culture.

It is, if we need to give it a name, the mean culture, not much touched by the deepest faiths of Oxford, Cambridge, or Moorhead State University.

It is formed by movies, television, appetite, consumerism.

A shallow skepticism, a distrust of discipline, intellectual laziness, greed, and simple ignorance.

Struggling against those forces are the values of the family, the loosening tenets of religion, the occasional honest and brave politician, the expectation of community, the tradition of democracy, the selflessness of love.

And not always losing the struggle when one considers how much common decency one discovers in students, colleagues, neighbors, and in the kindness of strangers.

And then there is education, which must include the learning of both teachers and students.

What of Snow's description of the scientific culture do we want to find a place for in the education of the future?

First, if Snow is wrong, as I think he is, that scientists are more deeply concerned than others in making the world better, he is surely right in saying that scientists, with their long history of discovery, believe that something can be done. Let us pass over what seems to me to be a confusion in Snow's mind between pure science and technology, or other applied science, a confusion perhaps natural in a man who had given so much of himself to mobilizing science for military victory. The obvious example of scientific concern with the real world is in the ecology movement, the efforts to save the environment from the largely man-made forces that threaten to destroy it. We would expect the education of the future to continue what has become a kind of crusade to make ordinary citizens aware of dangers and committed to establishing actions and patterns of behavior that will avert such dangers.

Which bring us to the second aspect of Snow's scientific culture, a faith in reason. It is reason, and perhaps, especially scientific reason, with its gathering of data and its testing of hypothesis that will be the chief weapon in the struggle to save the environment.

More than that, scientific inquiry, the processes of proof, will need to be applied to all sorts of problems, some of which we are not even now aware of, so that we must demand of science education that it develop in its students the habit of scientific rationality, so that a hundred kinds of nonsense, inattention, and folly

will cease to capture the minds of those unable to think.

And, third, we must expect from science education what Snow only hints at, the arousal of curiosity and deep satisfactions of knowing. This will sound to some like science for the sake of science, learning for the sake of learning, and that is good enough for me, for I believe that not knowing and not wanting to know betray the human potential. That part of the universe and that part of human nature that science can describe and explain needs to be known, needs to furnish minds otherwise lost to ignorance. And here it is worth recognizing that that first aspect of Snow's scientific culture, that aspect that I illustrated with ecological studies, can become the enemy of the rest. For if we limit science education to, or distort it by overemphasis on, a single practical problem, learning only what we must know to meet that problem, both the habit of reason, however, particularly needs, and general understanding will suffer. If immediate horrors demand that the scientist become an evangelist, the scientist is not either only or primarily an evangelist, but a man or woman of knowledge.

Do we end, then, by saying that education in the future will be pretty much all right, thanks to science?

Hardly. And here let me say that C. P. Snow is deeply and dangerously wrong in what he says about the culture of the arts and humanities

The education of the future cannot be shaped by the misunderstandings of Snow.

I have lived longer in the world, I suppose, than any of you. The world that I have seen, since I have been old enough to know what was going on, saw the Depression of the 1930's, the rise of Hitler, the Second World War, the Holocaust, Hiroshima, the enslavement of eastern Europe, China's cultural revolution, Viet Nam, Yugoslavia.

In the triumph of evil, science has ever been its handmaiden.

But that is not really my point. For I must go on and say that every triumph of evil has called to its assistance values widely accepted, values corrupt and horrible, but values nevertheless.

But the revulsion that evil brings about, the struggles to end evils, these come from values as well.

Let me come to this very week (April, 1994). In my long life I have never been moved, my heart has never been stirred, my hope for the triumph of humanity has not been excited by anything as forcibly as the election in South Africa.

A Black man, older than I am, votes, tears streaming down his face.

Both the vote and the tears speak to the values of the human heart, to truths of the spirit, to the persistence of the imagination. And this is the realm of the humanities.

Two weeks ago, I was asked to give a kind of farewell address to a joint meeting of the Education Committee of the Minnesota Senate and the Minnesota House of Representatives.

The culture of our colleges, in its history books, in its novels taught, in its political science classes, traces, indeed celebrates, the struggle to find order in chaos, the affirmation of human dignity, the sacrifices of heroes, the creation and change of institutions devoted to the public good. It celebrates the great ideas that have moved us, however slowly, forward, and the great works that have inspired us, moved us, given us serenity. It testifies to the good that follows the choice of reason over impulse, of the long view to the short view. It makes us skeptics and gives us faith. It helps us to recognize our common humanity even as it teaches us to take joy in our diversity. Perhaps it makes us, finally, by awakening in us a sense of possibilities, good citizens.

This is what a college can do. It is what teachers have done.

Education is to be valued because it redeems the young. Those who pass our laws, who establish our institutions and support and direct them, have a special responsibility to the young. That responsibility goes back beyond memory, beyond records. Not to accept that responsibility is to condemn the young to early death, to wasted lives, to bleak existence. No matter how hard we try, we can never assure that all young people can be all that they can be. But we can try.

A college would be foolish to promise happiness, but it can teach a student to seek fulfillment. As for freedom, that is what a college is all about. To be free of unexamined and second-hand ideas, to have the capacity to make decisions, to be delivered from the tyranny of impulse, to have some power over ones future, to be able to shape a thought and to put it into words, to know who you are – in all of this resides freedom.

And how about fulfillment, so much more worthy a goal than success? To have a mind well-furnished with knowledge, and to have the discipline to reflect on that knowledge and the will to act on your conclusions; to know the pleasure of the imagination and the joys of the spirit – these are not the fruits of mass culture, with its drooling engagement with sex, its snickering embrace of violence, its enthronement of triviality. They are the fruits of study, of broad reading, of the serious conversation of the classroom.

These, then, are the aims of education. To sacrifice them to mergers of doubtful value, to political purposes, to efficient transfer policies, to yield to the arguments of those who would have the colleges serve their purposes – this is a betrayal, not of colleges, which themselves need redemption, but of the public good.

I have time to end with a poem. It is not a very good poem, but it is one of my favorite poems for the simple reason that I memorized it when I was about fourteen.

"The Man With The Hoe" was written by Edwin Markham about the turn of the century, after he had seen Millet's painting of the same name, of a man wearily leaning on his hoe.

I memorized that poem – years later I hasten to say – and would recite it, declaim it really, as I hoed weeds in our cornfield on a hot summer in the 'thirties. I do not think that I felt much put upon, that I identified myself with the man in the poem. Indeed, I remember a kind of sense of power as I fitted the rhythm of my arms to the meter of the poem, and raised my voice above the unalien corn. The sound no doubt floated, for our farms were small, into the yards of our neighbors, providing, if not relief, a counter sound to the whistling of one neighbor, a persistent but not virtuoso performer, for though he whistled all day, he had a range of only two notes.

Bowed by the weight of centuries he leans
upon his hoe and gazes on the ground,
The emptiness of ages in his face,
And on his back the burden of the world.
Who made him dead to rapture and despair,
A thing that grieves not and that never hopes,
Stolid and stunned, a brother to the ox?
Who loosened and let down this brutal jaw?
Whose was the hand that slanted back this brow?
Whose breath blew out the light within this brain?
Is this the Thing the Lord God made and gave
To have dominion over sea and land;
To trace the stars and search the heavens for
power;
To feel the passion of Eternity?

Poetry and glittering generalities, you will say. But every worthwhile generality glitters a bit. I would, however, insist that somewhere in all of this, truth lies. For human beings are creatures of infinite capacity. That capacity shrinks under the impact of a mass culture, and a society uncertain of its values and natural inclinations. That is surely inarguable. There are those who regard that shrunken capacity as no great loss. Those who care, who are troubled by the prospect of the young being lost in a twilight world of ignorance, have nothing to offer except education.

Perhaps it is enough. We must believe that. We must go on believing that as we re-shape education. I hope that the education of the future is shaped by those who believe as I do, in what Snow dismissed as the traditional culture.