THE UNIVERSITY AND THE COMMUNITY

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The M. D. Anderson Visiting Professorship, established at the Rice Institute by the M. D. Anderson Foundation, is a chair filled each year by a visiting scholar distinguished in some branch of humanistic studies. The M. D. Anderson Visiting Professor in 1954-55 was Dr. Theodore Meyer Greene, formerly at Princeton and more recently Master of Silliman College and professor of philosophy at Yale. The lectures published in this issue of the Rice Pamphlet were delivered at the Rice Institute on the evenings of March 29, 30, and 31, 1955.
LECTURE I. THE IDEAL OF A UNIVERSITY

President Houston, Ladies and Gentlemen:

I THINK, Mr. President, that you must be psychic; the last words of your generous introduction were almost exactly the opening words which I had planned to use. I had in mind to ask, at the outset: Why is the University a problem? What’s all the shouting about? Isn’t it perfectly clear that it is the function of the University to concern itself with higher learning; to offer professional training for the practice of law and medicine, engineering and agriculture, teaching and research; and to offer advanced instruction at the collegiate level for unusually able young men and women? Isn’t all this perfectly obvious and obviously desirable? We need well-trained doctors and lawyers, engineers and businessmen. We need scholars and teachers. That’s the University’s job—to prepare our abler young people for their respective tasks. What, then, is the problem? What is there to talk about?

As a matter of fact, there is quite a lot to talk about, as will be evident if we ask ourselves a few leading questions.

(1) What kind of professional man do we need in this country? Is it enough that he should have great technical competence? If not, what do we expect of him in civic vision and responsibility, and how can we help him develop these traits during his formative years?

(2) All who are engaged in professional training admit that “liberal education” is a “good thing” and that our young doctors and lawyers and engineers should have some of it—indeed, as much of it as possible. But what is this precious “liberal education” that is supposed to correct all the cultural deficiencies of the technically competent engineer? What are
these “liberal arts” that are counted on so heavily, even in very small and somewhat random doses?

(3) Why is it that, on every campus in America, we find far less motivation and far more indifference and loafing among liberal arts students than among engineers and architects, pre-medical and pre-law students? Why is our liberal education failing to arouse the intellectual curiosity and the social concern of our young men and women? Why should they feel impelled to ward off boredom by plunging into the frenzy of extra-curricular activities?

(4) We tend to take the American campus for granted. But what is the ideal campus setting for the life of a university? What, in general, are its building requirements? What is its ideal athletic, social, and hygienic program? Above all, what “climate of opinion,” what campus ethos, will best enable not only the students but the faculty to live the life which the University ideal suggests?

(5) Does a university have any religious and spiritual responsibilities? Should religion be left strictly alone on the score that scholarship is essentially impersonal and “objective” and therefore indifferent to matters of ultimate belief? Should a university leave this whole aspect of education to the churches and to the individual conscience? If not, how can a university deal with these issues in a way consonant with its high dedication to scholarly objectivity?

(6) What is the relation of the University to the larger community? Should it poll the desires of the community and obediently conform to its wishes? Should it yield to the dictates of generous alumni? Or should it presume to lead the community in all areas where it has special competence? Reversely, how well qualified is an American community to understand what a university is really about? For example, how
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well qualified am I, as a philosopher, to understand the inner workings of a great industry; what would those in charge of such an industry think of my concrete suggestions as to how that industry should be run? By the same token, most of the able men and women in a community, however well trained in a variety of ways, are not academic experts; how well-qualified, then, are they to understand the proper task and the proper objectives of a university? But, reversely, can a university hope to understand the larger community well enough to know what it will need in future years? What, in short, does a university owe the public, and how can it discharge its obligation? What does the public owe its universities and how can it best discharge its obligations to them?

The mere listing of these questions—and they, of course, do not exhaust the list—should suffice to make it abundantly clear that we are dealing here with a very complex, controversial, and fascinating set of issues. I need hardly add that they are crucial issues. A university concerns itself, or should concern itself, with the intellectual, esthetic, moral, and spiritual core of its culture. If we allow our universities to decay or grow weak we can be very sure that our whole Western culture, as it reflects itself in this country, will grow correspondingly weak. Dare we permit this to happen at a time when the mantle of world leadership has fallen on our shoulders?

I can think of no campus on which I would rather discuss these issues than the campus of the Rice Institute. Rice was, from the very first, dedicated to liberal studies—"literature, science, and art." It is already strong in some professional areas such as pure science and engineering, architecture, and humanistic research. It is already strong in most areas of undergraduate liberal instruction. But, fortunately, it
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is also young. It has a long future ahead of it. It is still growing, and creative. I can myself testify to its prevailing attitude of critical friendliness and friendly criticism—an attitude very apparent among the faculty and, so far as I have encountered them, among the students. I therefore feel free to sail right in and speak my mind, hopeful and confident that if I inadvertently step on any toes you will know that this is by inadvertence. It is my duty to raise crucial issues, formulate objectives, and suggest solutions. I may sound dogmatic from time to time but this is not my intention; I hope very much that you will have ample opportunity to criticize and discuss whatever is controversial in these lectures.

Let us start with a quick sketch of the history of the Western University, with specific attention to six contrasting ideals of a University. We can then, in the light of these six ideals, more judiciously and objectively construct our own ideal of an American University today. I am not delving back into the past merely for its own sake, but only in order to achieve the perspective which history alone can give us. We are, all of us, somewhat victimized by stereotypes. We can free ourselves in some measure from familiar academic conventions if, for a moment, we take the longer historical view and see how old our problem is and how variously it has been solved in other periods and by other nations.

I. The first great universities in our Western culture were the Academy of Plato and the Lyceum of Aristotle in Athens. These arose in an area and at a time of great intellectual ferment and artistic creativity, on the one hand, and of lively political experimentation, on the other hand. The Academy and the Lyceum were established by their founders to meet the urgent intellectual and political needs of the day.

The chief subjects taught and studied in Plato’s Academy
were mathematics, ethics, and metaphysics; all were dealt with in a highly speculative manner. Plato's disciples were encouraged to let their disciplined imaginations roam in mathematical exploration, in ethical probing and in metaphysical construction. But note that Plato was also concerned with practical matters. He did not hesitate to receive deputations from nearby city-states for practical advice on how to organize and run their states. As an older man, Plato twice risked the very hazardous journey to Sicily to try to help a young tyrant, Dionysius, to run his autocratic state more humanely and wisely. Dionysius finally repudiated Plato's unwelcome counsel and imprisoned him; Plato had a hard time getting back to his quiet Academy. I mention this episode to remind you that Plato was not merely a speculative philosopher; he was also keenly interested in practical affairs.

Aristotle, too, was first and foremost a speculative metaphysician, but he was also an assiduous collector of scientific specimens and the author of various practical treatises on how to be virtuous (ethics), how to run a government under different circumstances (politics), and how to write a successful drama (poetics).

In short, Plato and Aristotle were pre-eminent, as were their respective Academies, both in speculation and in practical concern. It has become the habit of late to suppose that any contact with the "practical" somehow contaminates the wondrous purity of the "liberal" arts. This notion was not shared by Plato and Aristotle; they were wise enough to realize that speculation and practice are not enemies but mutually helpful allies.

II. The second university experiment took place in Alexandria in association with the great library. Whitehead has recently called our attention to the cultural pre-eminence of
Alexandria for several centuries. The University at Alexandria inherited the factual, prosaic interest of Aristotle and emphasized what I shall, in this and subsequent lectures, call accurate "scholarship," that is, the orderly rediscovery, preservation, and dissemination of older human knowledge. Alexandria was famous also for its great secular and theological controversies, but it was not given primarily to Platonic speculation. This was its weakness. Its strength was its firm scholarly anchorage in well established historical "fact."

III. The third type of university worthy of note was the University of the Middle Ages. It arose in an amazingly homogeneous society, probably not quite as homogeneous as we tend to think, but still much more unified than most societies are today. It was a religion-centered, church-centered society. What was the basic pattern of the medieval university? It was primarily concerned with the basic "disciplines" and "skills" and with the problem of synthesis.

It put great stress on the fundamental skills and disciplines of creative, scholarly thinking, on what were called the *trivium* and the *quadrivium*. The *trivium* included the skills of grammar, logic, and rhetoric; the *quadrivium* included the disciplines of arithmetic, geometry, astronomy (conceived of not as an empirical science based on observation, but as a purely mathematical discipline), and music (conceived of not as an art designed to delight the ear but once again as a mathematical study of acoustical proportions). It was firmly believed that all learning was based upon the *trivium* and the *quadrivium*. This belief made sense in the medieval context. It makes less sense when it is transported, without significant change, over the centuries and rigidly applied to the modern American scene.

The second great concern of the medieval university was
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de synthesis of natural and revealed truth. It had at its disposal in the later Middle Ages the rediscovered corpus of Aristotle, by which men were so profoundly impressed, and in addition, the cumulative mass of Church doctrine. Hence Aquinas' mighty synthesis of Aristotle and Christianity. The medieval university excelled, therefore, in synthesis, secular and religious, based on certain fundamental skills and disciplines.

IV. The "modern" European University dates back to the beginning of the Renaissance and the break-up of the Middle Ages and persists right down to the present. What do we find here? A new emphasis on "experimental research." This type of research differs from "scholarship" primarily in being oriented to fresh observation and a concern for new knowledge rather than to the preservation and dissemination of older knowledge. It is essentially experimental and exploratory.

How, then, has the modern European university tackled its job? First, please note, by perching itself firmly on the shoulders of the "school" as the training ground of all the fundamental academic skills. A modern European University is unintelligible if it is divorced from the lycée in France and the Gymnasium in Germany, that is, the "school," which kept its students to the age of seventeen or eighteen. The University was intended only for the abler and intellectually ambitious students who could master the fundamental skills and disciplines by that age.

The University presupposed this training and this special ability and interest. It was itself, as a university, dedicated primarily to research. It revolved around a small group of research professors who didn't pretend to "teach" subjects; their lectures merely gave their students (if they had any students—a matter of considerable indifference to them) a preview
of their most recent thinking. One can still expect a Euro-
pean professor's lectures to emerge presently in print as a
contribution to new knowledge. These professors were as-
sisted by a group of younger men who apprenticed them-
sehves to them. These young scholars kept themselves alive
for years by tutoring students and, meanwhile, sought to de-
velop their own scholarship in the hope of someday being
appointed professors in their turn. These universities had no
campuses and no dormitories, but they did somehow gener-
ate great intellectual maturity and ferment. They went in for
very intensive specialization and were largely professional in
orientation and motivation. They took little interest in the
life of the community and exhibited no great sense of social
responsibility. The record, by and large, of the European
universities under the dictatorships of Mussolini and Hitler
was therefore not surprising. That very grueling test clearly
indicated the grave weakness of the typical European univer-
sity in the area of social and political concern.

V. What do we find when we move from the European
to the British scene? What was the political and cultural
background of the British University? A Britain that for
centuries had fought for its democratic rights and privileges,
its social and political safeguards; a Britain that had grown
into a great colonial empire. This is the explanation of Ox-
ford and Cambridge, the two universities which have set the
pattern for all higher education in England. Both universities
have stressed for centuries the role of humane studies for
civic leadership. They too have presupposed the prior ac-
quision of the fundamental skills in what the English call
their "public," and what we would call their "private,"
schools. These schools were ruthless in drilling their students
in the reading and writing of Greek and Latin. Their training
in mathematics and history was equally rigorous. But they were also very much concerned with the indoctrination of a life-long ethos or attitude. We make fun of all that has been said about the "playing fields of Eton," but these fields are a faithful symbol of something very crucial in British life. A man like Churchill is forever exhibiting his continuing loyalty to, and concern for, what he acquired during his school years.

Oxford and Cambridge, to repeat, presuppose this solid school foundation; their entire university program rests on this base. The two most famous programs in Oxford are what they call "Greats" and "Modern Greats." "Greats" are focused on the classics, and on ancient philosophy and ancient history. We find it hard to believe that such a program could prepare young Englishmen for the most responsible posts in the Treasury or in Parliament or in some remote portion of the globe, yet it did, in fact, produce many of Britain's most notable leaders. Even "Modern Greats" are not as modern as we might suppose. They deviate from "Greats" in their emphasis on modern philosophy, politics, and economics. It is possible in the modern British university to "major" in other subjects as well. But those students who are most ambitious, and particularly those who look toward governmental posts, still assume that the two humane liberal programs of "Greats" and "Modern Greats" are, par excellence, the best possible preparation for civic leadership. The British University, in short, still stresses humane studies, with a practical political orientation, for a few able students.

VI. This brings us, finally, to the American scene. What do we find here? In the Colonial period the first colleges—Harvard, William and Mary, Yale, Princeton, and others—were established to provide the colonies with educated ministers and teachers, doctors, lawyers, and statesmen. They
conceived of this professional training in the old fashioned way; they restricted themselves to the classics, to what they called “natural and moral philosophy,” and to Biblical theology. During the nineteenth century, more and more such colleges were established all over the land, following the original pattern but with increasing secularization and a continuing multiplication of areas of study. Not until the end of the nineteenth century did any authentic American Universities come into being. They started when some of the older colleges made scholarly research on all fronts their chief concern. Since then, the European ideal of research has become increasingly dominant in American higher education. In addition, vocational training in all fields has been pushed farther in America than in any other country.

To understand the most notable changes in American education in the twentieth century we must take cognizance of the tremendous increase in our population during recent decades and the rapid emergence of a new ideal—the ideal of as much education as possible for everybody! Hence the unprecedented increase in enrollment at the elementary school and high school levels; hence the need for new schools, first called “normal” schools and then “teachers’ colleges” and now “state colleges,” to provide thousands of teachers for this mass of students; hence also the demand that more and more students be taken care of at the so-called university level; hence, finally, the multiplication and fantastic growth of our great state universities.

What then, is the over-all picture of American higher education today, including our four-year college and all our graduate instruction? In general, we want our colleges and universities to be, so far as possible, all things to all men. More
specifically, we seem to have four major educational concerns which we are trying somehow to combine and synthesize. These can be listed as follows:

(1) *Liberal education*—as much as possible for as many people as possible. This is the primary concern of the private colleges and a growing concern of the state colleges. It is also the continuing concern of our universities, both private and public.

(2) *Teacher training.* This is the explicit concern of the state colleges and the schools of education in our state universities. It is also a secondary but real concern of our liberal arts colleges and private universities who hope that more of their students will wish to become teachers and will be qualified to teach.

(3) *Scholarship and research* are certainly a third concern in the graduate schools of our Universities and, I hasten to add, for all scholarly teachers in our colleges, even where the college does not explicitly demand productive scholarship and research of its faculty.

(4) *Vocational training,* both at the graduate and at the undergraduate levels.

Note the resultant task of American higher education. We are trying to do simultaneously what Plato’s Academy and Aristotle’s Lyceum, what Alexandria and the medieval university have done in their respective ways, *plus* all that is distinctly American. No wonder that we find ourselves faced with a multitude of problems and headaches, perennial and new! How, for example, can we possibly combine real research with our very heavy teaching loads? This problem is much less acute in those countries and universities where research is pre-eminent and where teaching is very secondary.
How can we combine vocational training and liberal education? This problem is urgent only in our American universities.

This must suffice to indicate how rich and complex is our university heritage—how much we have to draw on in the wisdom and folly of the past, in its mistakes as well as its achievements. In the light of this historical perspective let us now address ourselves to our main task. How can we, today, most wisely conceive of the ideal of a University?

A University is dedicated to the preservation, pursuit, and propagation of truth. Among all the institutions in our land and in other lands, the University is the one and only institution whose prime concern is truth—past, present, and future. Government will indeed get itself into trouble if it bases itself on lies. Business will be inefficient if it relies on ignorance. The church will be harmful or futile if it resorts to illusion and folly. Truth is essential in all human institutions and all facets of human life. But it is surely obvious that the University alone is specifically entrusted with the preservation, pursuit, and propagation of truth. What does this entail?

(1) First of all, it certainly entails “Alexandrian” scholarship. Unless we have libraries and all that they stand for and make possible, all our fresh speculation and research will be irresponsible and idle; we will fail to stand upon the shoulders of our predecessors. There is no substitute for accurate, painstaking scholarship; without such scholarship no authentic University is possible.

(2) But mere factual scholarship, divorced from a larger perspective, tends inevitably to become trivial. In the absence of basic criticism it tends to become dogmatic, which is the last thing it wants to be. Unfertilized by the creative imagination, it inevitably becomes prosaic and dull and rou-
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tine. Let me read you a few lines from a great scholar and philosopher, A. N. Whitehead. I quote from his _Adventures of Ideas_.

"A scholarly age," he writes, referring to the Alexandrian period, "works within rigid limitations. . . . Modern scholarship and modern science reproduce the same limitations as dominated the bygone Hellenistic epoch, and the bygone Scholastic epoch. They canalize thought and observation within predetermined limits, based upon inadequate metaphysical assumptions dogmatically assumed. The modern assumptions differ from older assumptions, not wholly for the better. They exclude from rationalistic thought more of the final values of existence. The intimate timidity of professionalized scholarship circumscribes reason by reducing its topics to triviality, for example, to bare sensa and tautologies. It then frees itself from criticism by dogmatically handing over the remainder of experience to an animal faith or a religious mysticism, incapable of rationalization. The world will again sink into the boredom of a drab detail of rational thought, unless we retain in the sky some reflection of light from the sun of Hellenism." (pp. 150-151)

In short, though scholarship is essential, it is not enough; it must be guided and redeemed by that ranging, probing, critical creative spirit which was so magnificently exemplified in Socrates and in Plato—the spirit of "speculation."

(3) Whitehead goes on to point out that speculation is an essential ingredient in all meaningful research. It is that process which is responsible for the formulation of fresh hypotheses which are able to guide new inquiries, produce new "facts," and thus lead to original and significant research. How does such research differ from mere scholarship? We tend to use these terms synonymously but it is justifiable, I believe, to distinguish them and give them very different meanings. I would like to define "scholarship" as a learned looking back, as the effort to recapture and consolidate, to recover and hold and use, as much as possible of our rich
heritage from the past. We would in sooth be barbarians without this heritage. But we will stagnate and die intellectually if we do not simultaneously forge ahead, and this involves the use of bold speculation. It is only the speculative spirit which can generate new insights, invent new frames of reference, create new thought models. Scholarship and speculation are the parents of modern research; it is their fruitful union which engenders that research to which we are so deeply dedicated in this country today.

These, then, are three essential components of the modern University—factual scholarship, responsible speculation, and, growing out of these, significant research on every front. Will they suffice to define an ideal American University? No, we cannot stop here, because each generation must prepare the younger generation presently to assume its responsibilities. A University also has the job of educating our future experts.

(4) What is our educational task at the graduate university level? It is the task (and here I use my words advisedly) of “professional education” in contrast to “vocational training.” Vocational training is essentially a training or conditioning in specific skills, for short-range application. A typical typing course which teaches girls how to type accurately is a good example of vocational training in a specific skill. What does such a course lack? It lacks, first of all, any kind of historical perspective, any attempt to set the discipline in the context of its own history. In short, it lacks the orientation of historical scholarship. There are many so-called “professional” programs in this country, conducted on university campuses, which are, in fact, merely vocational training programs; they are not ready for inclusion in a professional school worthy of the name.

May I pause for a moment to stress the importance of his-
torical perspective? Our ability to look ahead, profitably and responsibly, into the future depends on a kind of a cantilever principle. Some of you know how a cantilever works in architecture and engineering. It is a horizontal member that is not supported at one end. It maintains its horizontal position only by virtue of its vertical anchorage at one end. Given the requisite tensile strength of the material used, the more firmly you anchor a cantilever at one end, the farther can you project the other end out into space. Similarly, our understanding of the future can be only as firm as is our mastery of the past. The only way to escape sheer contemporaneity and to achieve an authentic modern outlook, with a lively and responsible concern for the future, is to develop a lively and responsible understanding of the past. The more effectively we anchor ourselves in the past, the better can we handle the present in the light of the future. Scholarship provides this anchorage. All “professional” education falls short of being what it should be and lapses into mere vocational training, therefore, in so far as the component of scholarship is left out of account.

Secondly, “professional” education involves due concern for the speculative interpretation of facts. This is a point which needs to be greatly emphasized in professional education today because the facts which have to be assimilated in medical schools and law schools, engineering schools and schools of architecture are so numerous and important. Experts in these fields are in ever increasing danger of being bogged down by scholarly facts and of neglecting the speculative component in which Plato was so pre-eminent—the ability to stand back and see things with a large vision, the ability to interpret facts with the aid of powerful, bold, revolutionary concepts. When we stop to think of it, we realize
that all the great advances in science, all the great achievements in art, history, and philosophy, have come from this kind of speculation. Man is a dull dog without it, and "education" is correspondingly dull without this speculative factor.

If I was right earlier in saying that significant research can emerge only from the marriage of scholarship and speculation, how can we educate our future experts for such research without due attention to both scholarship and speculation? We can, without them, train youngsters in the accurate use of instruments, in obedience to somebody else's instructions. We can teach them how to use a ruler and be tidy and neat. But we cannot help them in this way to achieve the informed and disciplined imagination which alone can produce significant research. There is, in short, a difference in kind between what I am here labeling "vocational training" and "professional education." Had the dinosaurs, who were so unadaptable that they became extinct, resorted to education they would have gone in for vocational training. This dinosaur kind of training has its place and value in our technological culture, but let us not confuse it with responsible professional education.

(5) Does this conclude our account of a University? Surely not, for we all share the widespread American conviction that higher education should concern itself also with able young men and women at the collegiate level. What kind of collegiate education, then, should a University undertake to offer? Let us remember that we have, in this country, all sorts of educational institutions and that we are concerned in these lectures only with the ideal of a University. We should, therefore, guard ourselves, above all else, against the threat of what is often hailed as democratic but what, in
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fact, is sheer Jacksonian egalitarianism. I refer to the popular belief that no institution is “democratic” unless it does for everybody what it does for anybody. But this is the death of all excellence and quality, and if a university does not stress quality and excellence, at the college level as well as at the graduate level, it ceases, I submit, to be a university. What a university should do for its college students is to make available to them, at their age level and without specific professional orientation, what it does for its more advanced graduate students—and there are lots of them in our country. It should recognize that a democracy, more than all other forms of society, needs able people educated for leadership in every walk of life. It should give these students the very best that scholarship, speculation, and research can make available to them. Here we have a really challenging ideal.

This ideal will not, I fear, appeal to some of our alumni who like to argue, “We went to college X; why can’t our sons go to college X too?” Yet what would these same alumni say, as honest and efficient businessmen, were we to ask them to give your son or mine a responsible job in their business for which he was not at all qualified? Should not their answer be: “Look, we’re in the business world of stiff competition. We can’t give people jobs out of sheer friendship or sentimentality. There are doubtless many suitable jobs for your son, but unfortunately the present opening in our business is not one of these.”

I submit that a university should follow a similar line of reasoning. It isn’t running its college as it should unless it follows the Jeffersonian principle of education for responsible leadership. It goes without saying that the special educational opportunities it offers should be open to everybody who is
able to benefit; race and religion, social background and economic resource should never be allowed to stand in the way. But if a university doesn’t insist on excellence at the collegiate as well as at the graduate level it reduces itself to the rank of the many educational institutions in this country which cannot achieve or maintain university standards; it simply fails to perform its distinctive and proper university function.

(6) There is one last responsibility of a University which I must mention before I close. Must we not agree that a university falls short of its high calling unless it is everlastingly dedicated to the highest welfare of the community? What does this involve? Not complete insulation from the world in a kind of an ivory tower, and not an eager peddling of its precious wares to an indifferent public. It involves an abiding sense of need for what the community has to offer, and a corresponding sense of its own potential contributions to the community. No university is, in the long run, going to do the significant job it has to do unless it has its feet firmly planted in the “market place,” at the cross-roads of cultural issues and world crises. Why did Alexandria prosper for so many centuries? Because it took cognizance of all the currents of culture which impinged upon it. The same can be said of Bologna and Paris, Oxford and Cambridge.

I should like to stress this point more than any other. No aggregate of little academicians is ever going to achieve significant truth. Water can rise no higher than its source. What we need pre-eminently in a university are men and women who are not only “inspiring” teachers but who are able to inspire their students because they are existentially involved in all the strains and stresses, secular and religious, political and economic, and social, artistic and scientific, of
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their times. How else can a university avoid triviality and inconsequentiality? How else can it stay “on the beam” and address itself to the search of significant truths—not merely menial truth, but, out of the mass of all available truth, truth which is of genuine importance to mankind? I submit that close linkage with a living, growing, pulsing community is essential to a university. Without this linkage a university cannot itself be the living, growing, pulsing, agonizing, worrying, concerned institution it ought to be.

A university thus related to its community will learn from it. It will therefore be in a position to ask the right questions, to diagnose the basic needs of the community, and thus gradually to assume significant leadership in the community. How else should we define the role of the University in a democracy? In terms of political orthodoxy, or of correct propaganda, or of loyalty oaths? What is really important is that the University should make its own unique contribution to the democratic community to which it belongs. It can do so only by responsible dedication to significant truth—to truth nourished by the soil of human need and human endeavor. Then and only then will it have the courage and the initiative to lead the community as today, more than ever, the community so desperately needs to be led.

This must suffice as our preliminary sketch of the ideal of a University. We have defined this ideal in terms of two groups of objectives, three objectives in each group. We have insisted that a modern university, dedicated first and foremost to truth, must (A) cultivate (1) “scholarship,” (2) “speculation,” and (3) “research,” as these three terms have been defined. It must, in its own way, continue to cherish the University ideals of Alexandria, Athens, and modern Europe. It must also (B) engage in (4) “professional education” of a higher
order, (5) insist on excellence rather than mediocrity at the collegiate level, and, above all, (6) maintain a dynamic two-way relation with its community and its times. It must, in these respects, simulate the sense of social responsibility of the Greek, the medieval, and the British University.

In my next lecture I shall try to deal with the very vexed problem of the "liberal arts and sciences." What are they? How can they best be combined and made more effective?
WHAT are the nature, the function, and the value of the liberal arts and sciences? We all acknowledge their general importance. They are the chief custodians of our culture, the chief humanizing influence upon all our professions, the chief source of enrichment of our private lives. Only he who is indifferent to human culture and its manifold values will regard the arts and sciences lightly or carelessly. But what are they? How can we identify and assess them? How, if at all, can they be combined with the more “practical” disciplines in a well-rounded professional education? This is our controversial and many-sided topic this evening. If I sound somewhat dogmatic, please forgive me. I just want to express my ideas as briefly and explicitly as possible prior to your criticism and discussion.

First a general word about the phrase, the “liberal arts and sciences.” Please note the wording. The President asked me, just before the lecture, whether my title this evening was “The Liberal Arts and Sciences” or “The Liberal Arts and the Sciences.” Did I want the word “liberal” to qualify “science” as well as “art”? My answer was, “Emphatically yes, Mr. President! That’s the whole point of my lecture. I object strenuously to the notion that pure science is illiberal and inhumane.”

The liberal arts and sciences can be defined as orderly inquiries productive of new significant insights. Each word in this definition is important. (1) They are all ventures in inquiry and therefore never to be confused with trade school drills where memory is emphasized rather than critical analysis. (2) They are essentially orderly, not casual or intuitive, though there is always a crucial place in them for the flash
of intuitive vision. (3) To be significant, they must be productive of fresh significant insights over the years. I think this description of a liberal discipline will stand up under scrutiny.

This definition is obviously focused upon attitudes and procedure rather than on subject matter. Subject matter is introduced only indirectly. If the subject chosen for liberal inquiry is too small and restricted it fails to provide us with enough material to work with; its orderly study cannot produce significant truths or insights. Subject matter is not, therefore, unimportant. But subject matter cannot, per se, make an inquiry liberal. What is crucial is the attitude of the inquirer, the spirit of the inquiry. To take two sharply contrasting cases: I believe that engineering can and should be taught as a liberal discipline, whereas poetry can be, and sometimes is, taught in a most illiberal manner. I have picked poetry at random; any subject in the whole liberal curriculum, including philosophy, permits of illiberal treatment.

The term "liberal" is often contrasted with the term "applied"; we are forever contrasting the liberal arts and sciences with the applied arts and sciences. This is a valid, but a dangerous distinction. First of all, would it not be queer if significant truth resisted all effective application or became tarnished by application? In point of fact, we know what actually happens to significant truths. In science they are quickly put to work in various areas of modern technology. Political and economic insights are sooner or later put to use in the field of politics and economics. Genuine ethical insights are invaluable not only to the individual but for an evolving society. Sensitive esthetic insights guide the creative artist and enlighten the critic and the informed enjoyer or art. Sound theology is an aid rather than a hindrance to
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the service of God. In short, all significant truth invites and eventually enjoys application.

Nevertheless, there is a difference between the objective search for truth, for its own sake, and its practical applications. This distinction must be stressed; when it is blurred, we are tempted to rush too quickly to applicability. When this happens, the price paid is lack of adequate theory, that is, the loss of rich insights which might otherwise be available for application. Commercial concerns which have laboratories of their own are often wise enough today not only to hire pure scientists but to make a special effort not to trammel their research; they realize that the fettered mind will not, in the long run, produce what they are after. They have learned from bitter experience that what modern technology needs most is the scientific mind at its best, that is, as free and unrestricted as possible. The freely inquiring mind is no less essential in art and religion, politics and business.

The liberal disciplines can also be defined as the liberating and enriching disciplines. They are the orderly inquiries which liberate us from ignorance and error, from insensitivity and superstition and provincial bigotry. They are the disciplines which enrich the life of the individual and which fructify a culture.

How, then, can we identify these disciplines?

Let us start with a distinction between basic “skills,” and basic “disciplines.” A basic “skill” may be defined as a prerequisite for any liberal discipline and as equally valuable in all the disciplines. A “basic” discipline can then be defined as the orderly application of these basic skills to this or that subject matter.

This distinction has good precedent. The Middle Ages distinguished, we remember, between the trivium and the
The trivium included the three basic “skills” of logic, grammar, and rhetoric. The quadrivium included the four “disciplines,” of mathematical inquiry. I am harking back to this medieval distinction, but I shall presently propose a very different list of “skills” and “disciplines.” This distinction between “skills” and “disciplines” is also in line with our continuing concern in this country for the “three R’s,” i.e., reading, writing, and arithmetic, as prerequisite to all intellectual inquiry. The “skills” which I intend to recommend to you include these three and others as well.

Each of the skills in question is a dynamic skill, that is, it is the ability to act in certain ways. We use a skill, however, only when we are duly motivated to do so—when we want to put the skill to use, when one attitude is favorable to its employment. We must, therefore, in listing the basic liberal skills, indicate in each case the appropriate accompanying attitude. This is important because the total task of education includes not only the teaching of skills but, in addition, the inculcation of those favorable attitudes in the absence of which the skills will be put to very inadequate use. Education is currently described both as a “science” and as an “art.” Both descriptions are valid. It is a science in proportion as it can accomplish its task in an orderly rational way according to rules and precepts. It is an art in proportion as the teacher has to resort to more indirect and individualized devices. The teaching of skills can, in principle, become a science. The inculcation of attitudes is, par excellence, the art of the individual teacher—an act in which his personality, his enthusiasm, his knack or genius for quickening the curiosity and arousing the loyalties of his students are invaluable. A student can acquire the orderly skills of arithmetic by precept and drill; he can learn to think abstractly and precisely,
and to love clear thinking, only by example and contagion, by a kind of osmosis.

Before listing the basic “skills” and “attitudes” for the benefit of any of you who are teaching at the high school and elementary school levels, I want to emphasize this: these skills and attitudes should be of primary concern to all teachers at both these levels. They should, ideally, be pretty well mastered and inculcated by the end of high school. A university should be able to count on its entering freshmen having these skills well in hand and these attitudes well rooted, so that it can function as a university should and can concentrate on the disciplines which depend upon these skills and attitudes.

Here, then, is my own list of the basic liberal “skills,” and their relevant “attitudes.”

(1) The first is the linguistic-logical skill. Normally these two are separated from one another. I would like to bracket them, but each component must be defined separately. By logical skill I mean the ability to think straight—clearly, accurately, powerfully. The corresponding logical attitude is simply a love of clear thinking and a hatred of muddy thinking. Linguistic skill is the ability to use a language correctly and, so far as possible, felicitously. The linguistic “attitude” is what W. H. Auden has in mind when he discusses the prime prerequisite for the writing of poetry, i.e., a love of words, a love of language for its own sake, hence a hatred of loose, sloppy, inaccurate, infelicitous language.

Why, then, combine these skills? Because accurate thinking and, indeed, all thinking is essentially dependent upon “language.” Try sometime to think clearly without any reliance on any language whatsoever; you will find that it cannot be done. You may have heard of the woman who was
asked for her opinion on a political issue. She hesitated, and then explained her hesitation with, "How do I know what I think till I hear what I say?" This makes perfectly good sense. It is what an artist should say when he is interrupted in his creative work and asked what he is trying to create. If he is honest and intelligent his answer should be: "Wait and find out. I don’t myself know precisely what I am really trying to say' until I have said it." Or, to descend from the heights of creative art to the pedestrian plain where you and I live most of the time, we have all had the experience of getting halfway through a sentence in a letter or an essay and then being brought to a stop. What blocks us? What are we waiting for? The right words, or the right idea? When we resume our writing, what has happened? Have we found the right words, or have we come upon the right idea? I am myself unable to decide which comes first, the words or the idea. As my words come, my thought crystallizes; as my thoughts clarify, the right words come to mind and fall into place.

I continually encounter this linkage of word and thought in my teaching. My better students are soon eager to argue philosophically but, at the outset, they cannot help discussing philosophical problems clumsily because they do not have at their disposal the language requisite for mature philosophical discussion. They actually get red in the face trying to find words with which to say what they are not yet able to formulate and, therefore, conceive clearly. If I, as teacher, can suggest the word or phrase they are groping for they grab it and use it again and again. This is how their philosophical vocabulary grows and how, simultaneously, they learn to think more adequately about philosophical problems. In short, philosophical training is simultaneously linguistic training; the two cannot be divorced.
Let me try to make my point in reverse by means of another example. I wish you could hear how inarticulate I am when I am trying to tell the garage man what I think is the matter with my car. My technical vocabulary is so deficient that I must rely almost entirely on gestures and sign language. The intuitive capacity of most garage men is truly incredible. They somehow figure out what is wrong despite my inarticulate fumbling ignorance.

What I am trying to emphasize is that clear thinking and the happy use of language are absolutely intertwined. If only we believed this we would, once and for all, stop scolding the philosophy department for not teaching logic well enough to cure our students of incorrect thinking. We would also stop pointing the finger of scorn at the English department for not teaching English composition well enough. We would realize that the problems of logic and language are our common responsibility.

The term “linguistic” should be used very broadly here to include all the languages of human reflection and communication. Every well-educated person has at his working disposal several such languages. First of all, he has his mother tongue—a skill which is in grave jeopardy today. The chief “foreign language problem” in our schools used to be Greek and Latin. Then it became French and German. It has now become English. Many of our young people are entering college today unable to use English correctly, let alone felicitously, and some are allowed to graduate from college as linguistic cripples. Really to appreciate one’s own language, meanwhile, one needs to know at least one other verbal language; only thus can one sense, and relish, the distinctive characteristics of one’s own mother tongue. Many of us also have at our disposal one or more of the technical
languages of science, of artistic and literary criticism, or of advanced economic and political, psychological and sociological theory. These are the languages without which precise thought and reflection in these areas are impossible. Finally, there are the several languages of mathematics and of the fine arts—of music, painting, sculpture, architecture, the dance, and literature, each with its many different stylistic dialects. True cultivation entails, I believe, some familiarity with all these languages and special competence in a balanced assortment of them. Each of them can be used correctly or incorrectly, awkwardly or skillfully; in conjunction, they alone make possible the clear and effective exploration, expression, and communication of ideas.

Contrast the predicament of the average young American, whose linguistic equipment is so shabby, with the advantageous position of a linguistically well-equipped person. His only real verbal asset is the vernacular—often powerful and pungent for the expression of attitudes and emotions, but pathetically inadequate for the precise expression of clear ideas. No wonder that most of our young people explore ideas in school and college with so little relish; they simply lack the requisite linguistic equipment to do so. Their English restricts them almost entirely to practicalities and crude emotive utterance.

(2) The second basic skill may be entitled factual. This involves an understanding, first of all, of what a “fact” is and the realization that it is not an obvious static entity, like a marble, lying around and waiting to be bumped into, but an interpretation of evidence, a more or less well tested, more or less controversial, conclusion. When we say, “It is a fact—,” we are committing ourselves to a proposition which has been, or should have been, based upon a great deal of observation and critical reflection. The “fact” that “Caesar crossed the
"Rubicon" is not a simple, self-evident proposition; it rests on a mass of historical evidence and historical interpretation. In short, every "fact" invites challenge, and when a fact is challenged the speaker is under obligation to produce the sustaining evidence and to indicate the line of reasoning which logically led him to his conclusion. All "facts" are precarious and problematic.

The "practical" man in our society finds it hard to appreciate the nature of the facts he prides himself on knowing. I wish you knew how often the fathers of my students have come to me when, at the end of sophomore year, their sons gave evidence of becoming deeply interested in philosophy. "Professor," they have said, "I appreciate what you have done for my son and, believe me, I honor philosophy. But I can't let John waste his time majoring in philosophy. He is headed for business and we businessmen are practical. We deal with facts, not fancy ideas—and facts are facts! John is here in college to learn them; he'll need them in his business." It never occurs to these successful businessmen that there are no facts that are "mere" facts, facts divorced from all theory. Such thinking is hopelessly utopian; it is unrealistic to a degree. Practical thinking is not hostile to theory; it is truly practical if and only if it is based on sound theory and critical observation.

Factual skill also involves, of course, a knowledge of the criteria of factual reliability, that is, the ways in which all factual assertions can and should be tested. I will not weary you this evening with an account of these criteria and their responsible use. But it is our job as teachers to help our students to master these criteria and to learn how to use them on all relevant occasions. They also need to learn what many adults in every community—indeed, some members of every faculty—seem never to have learned, namely, that every area
of significant human concern is an area of testable fact. Factual assertions are testable not only in our practical dealings with nature and in science; they are no less testable in the areas of economic and political, esthetic and social, moral and religious belief and practice. Only he who really believes this and who acts on this belief is really factually minded. Only he can distinguish between responsible and irresponsible assertions in any of these areas; only he is equipped to transcend mere prejudicial opinion and to judge maturely and cogently.

A sense of fact will tend to express itself in a factual attitude, that is, a passion for factual accuracy and a corresponding hatred of error and illusion, bigotry and prejudice. A factually-minded person is, in this sense, profoundly "realistic"; he is radically opposed to all utopian dreaming and to all escapist wishful thinking. However grim the facts may be, he always prefers to know them than to remain in "happy" ignorance of them. Maturity, for him, means facing facts, all facts, and then dealing with them as competently as he can.

(3) The third basic skill to which I would call your attention is the normative skill and its corresponding attitude. The term "normative" suggests "norms" or "standards," that is, standards of value, of good and bad, true and false, beautiful and ugly, holy and profane. Normative skill can therefore be defined as a cultivated sensitivity to all the values which we encounter and use in our daily lives as human beings. All men have some capacity for normative response and evaluation, but most of our responses are crude and insensitive; most of our evaluations are largely unenlightened. What is encouraging is that all of us, young and old, can, if we will, make our evaluations far more sensitive, imaginative, and enlightened than they now are.

We respond normatively not only to concrete embodi-
ments of value—to this just man or act or law, this picture or statue, etc.—but to the values of justice and beauty, etc., conceived of as ideals which are only partially embodied in concrete individuals and events and which we feel, or should feel, ourselves obligated to actualize even more adequately. It is these ideals, potent and elusive, by reference to which we sit in judgment upon all our partial actualizations of justice and truth, beauty, goodness, and love. The normative skill is the acquired capacity for sensitive, mature appreciation of these values and for responsible response to them. The corresponding normative attitude is the attitude of profound respect for all these values, both abstract and embodied, and the ability to enjoy and honor them. It is, by the same token, a hatred of all crudity, coarseness, and vulgarity in all value situations.

(4) The fourth and last skill on my list is the synoptic skill, that is, the ability to see things in relation to one another, to pull things together into a meaningful pattern. It is the rare and precious ability to see life steadily and see it whole. It is the ability to transcend, at least in some measure, the many provincialisms and parochialisms with which we are all bedeviled. Note how strongly we tend to regard other portions of the United States with more or less patronizing disesteem, how we tend to look down on social groups other than the group to which we belong. Note our impulse to regard all religions other than our own with little interest and with less tolerance. Note how difficult it is for us to believe that other nations and cultures may, in their way, be as worthy and valuable as our own. I could go on indefinitely enumerating the provincialisms which, today as always, make for misunderstanding and hatred, war and death.

The synoptic skill, accordingly, is the ability to transcend these provincialisms at least to some degree. No one can do
so completely, but each of us can, if he will, do something to raise his sights, broaden his horizons, tear off his blinders, and see life more objectively and maturely. The more successful our effort, the more will we develop a truly synoptic attitude; we will increasingly deplore all provincialism and bigotry and increasingly love that genuine tolerance which springs from greater understanding.

These, then, are the four basic liberal skills and their accompanying attitudes which, in conjunction, constitute the prerequisite of a liberal outlook. They can, and should, be acquired in childhood in embryonic form; they invite cultivation until we die. Our children can learn from us how to use or misuse language, how to think clearly or confusedly, how to face or avoid fact, how to respond to values sensitively or insensitively, how to be either provincial or catholic in outlook. Their continuing education on every front involves the ever more effective mastery and use of these four skills, and their progressive adoption of the crucial attendant attitudes.

You may, at this point, be somewhat appalled by the difficulty of the task here envisaged. Is not the real mastery of all these skills completely beyond the reach of the ablest, let alone the average? I have, indeed, formulated an unattainable ideal; but it is, I believe, an ideal to which each of us can more or less approximate. It is a practical ideal because we can put it to practical use.

For example, it is both meaningful and helpful to ask: What kind of equipment should a university like Rice hope to find in its entering students who are not geniuses but who have good mental ability? We might answer, in terms of the foregoing analysis: a considerable mastery of his mother tongue; a partial competence in at least one foreign language; the completion of "elementary" mathematics (here
"elementary" needs definition); some real factual training, ideally in one or more of the natural sciences; considerable sensitivity to literature and to at least one of the "fine" arts; and, last but not least, some initial notion of, and hatred for, provincial bigotry, and some desire for a more synoptic vision. Were all its entering freshmen thus equipped, what a wonderful education Rice could give them in four years of real college work! And even granted that such is not now the case, is this not a reasonable and meaningful ideal worth striving for?

So much, then, for the four basic liberal skills. What, in contrast, are the liberal "disciplines"?

I have defined a "discipline" as a systematic or orderly inquiry, with the aid of our four skills, into a subject worthy of such inquiry. By "worthy" I mean "of sufficient scope to preclude exhaustion" and, in addition, "of major human concern." The subject matter suitable for a liberal discipline must, in short, be of considerable extent and complexity and of genuine human significance. Is there any way of enumerating these subjects or areas? I think there is.

Let me start by distinguishing an "environmental" area from a "tool" area. By a "tool" area I mean a complex skill conceived of as being itself a subject for advanced inquiry. I shall return to this type of discipline anon. By an "environmental" area I mean some major aspect of our total environment, that is, of the "reality" which confronts us all as human beings. This reality consists of (a) the world of nature, including ourselves as psycho-physical beings; (b) human society, with all its interlocking institutions; (c) all of man's artifacts, both "technological" and "artistic"; and (d) that dimension of ultimate mystery which religion and philosophy, in their very different ways, attempt to probe for our greater understanding and our more adequate response. We can, if
we like, visualize our relation, as individuals, to our total environment, by drawing, in our mind's eye, a small circle and, around it, four concentric circles. In this imagined diagram, each of us, as individuals, can be thought of as occupying the small central circle. Surrounding us is the nearest circle, representing society; beyond it is the circle symbolizing all human artifacts; beyond it, the circle of nature; and beyond it, the more or less indeterminate circle of ultimate significance and mystery. If these very rough and inclusive differentiations make sense, we can, then, conveniently and logically, list the basic liberal disciplines by reference to these four large areas of human knowledge and response.

The disciplines primarily concerned with nature in all its length and breadth are of course the natural sciences, both "physical" and "biological." Those that deal primarily with society are, equally obviously, the social sciences, or, as some people prefer to call them, the social studies, that is, economics, political science, sociology, anthropology, and social psychology. We have no commonly accepted term with which to designate the disciplines which deal with man's artistic creations in all the major and minor artistic media. I suggest the covering title "arts and letters," to include all orderly studies of the fine arts and literature. These studies parallel, in a way frequently overlooked, the technological studies which create and employ non-artistic artifacts to promote human welfare. Finally, the two great synoptic disciplines are history and philosophy, the former relating everything along the time axis, the latter concerned with the nature of everything in its logical relation to everything else. Both are essentially relational and both are unlimited in scope; each perfectly complements the other, and neither is replaceable by the other.
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This classification leaves one of the great disciplines unaccounted for, namely, the study of religion. It can be listed as one of the normative disciplines, along with the “arts and letters” and ethics, the study of the Good. Or it can be classified, along with philosophy and history, as one of the great synoptic disciplines, dealing as it does with man’s dynamic relation to Ultimate Reality, with the finite and the Infinite, fact and value, the holy and the profane. Or, at its mature and responsible best, it could even be conceived of as the queen of the disciplines, the theoretical and practical capstone of man’s efforts to understand reality and himself and to act as he should. In our society today the second of these classifications is probably the least misleading.

This enumeration of the basic liberal disciplines can be summarized diagrammatically as follows:

<table>
<thead>
<tr>
<th>Area</th>
<th>Discipline</th>
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<tbody>
<tr>
<td>a) Nature</td>
<td>The “natural” sciences</td>
</tr>
<tr>
<td>b) Society</td>
<td>The “social” sciences</td>
</tr>
<tr>
<td>(Artistic)</td>
<td>The “arts and letters”</td>
</tr>
<tr>
<td>c) Man’s Artifacts</td>
<td>Engineering</td>
</tr>
<tr>
<td>(Technological)</td>
<td>Medicine</td>
</tr>
<tr>
<td>d) Reality as a whole</td>
<td>History</td>
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<tr>
<td></td>
<td>Philosophy</td>
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<td></td>
<td>The Study of Religion</td>
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</tbody>
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It is these disciplines which should, I believe, constitute the “subject matter” of all collegiate liberal education. Since technological training at its best is, in the nature of the case, strictly pre-professional it should, ideally, follow and be based upon a sound four-year “liberal arts” course. It is high time, meanwhile, that our liberal arts students be at least “introduced” to the discipline and adventure of technology as our future doctors and engineers are today being “introduced” to various liberal disciplines. This is a proposal which I should like to explore further, but time forbids. Re-
stricting ourselves, then, to the four main groups of liberal disciplines, how might a college curriculum do justice to all four groups? Let us sketch an ideally balanced curriculum and then note the grave difficulties in the way of implementing such a curriculum.

If we presume a reasonable initial mastery of the four basic skills by the entering freshmen we can reasonably insist that, during his college course, he be enabled to meet and explore the basic liberal disciplines as follows. He can be given:

a) An introduction, at the college level, to the natural sciences. This would normally involve at least two year courses whose purpose it would be to teach the student how the scientific mind works and what, in large outline, are its most impressive achievements to date. Attention should certainly be given both to the “physical” and the “biological” sciences. These introductory courses should not be superficial, sentimental “surveys”; neither should they be merely the first rungs of each of two departmental ladders leading to the Ph.D. They should include both “fact” and “theory,” both technical manipulation of scientific instruments and historical-philosophical perspective. No courses which fully satisfy all these requirements have yet been devised; they remain a challenge for the inspired teacher of science.

b) An introduction, at the college level, to the social sciences. Here too the minimum course allowance would have to be two year courses; here too the contrasting approaches and distinctive problems of the several social sciences would have to be taken into account. The present practice of requiring a year’s course in any two of these disciplines is highly unsatisfactory: economics, political science, sociology, anthropology, and social psychology are simply not alternatives. Students must, somehow, be introduced to the essence of each of them. Most current experiments in amalgamated
courses in the “social studies,” however, are not satisfactory; they tend in the direction of superficial surveys or of a rag-bag aggregate of unrelated and meaningless “facts.” Here again the ideal pedagogical solution awaits the inventiveness of social scientists who are masters in their own respective fields, who are able to survey these fields imaginatively, in large historical and philosophical perspective, and who can be pedagogically creative.

c) An introduction, at the college level, to the arts and letters. However deplorable the failure of our college students to master their own mother tongue, their introduction to English literature is, on the whole, pretty satisfactory. What they so frequently fail to get in their courses in “English” is a sense of world literature, that is, of literature as such as it appears in many different languages and cultures. Their almost universal ignorance of the non-literary fine arts, meanwhile, is one of the pedagogical and cultural scandals of our age. This ignorance is especially ironic because the fine arts, including music, are, par excellence, the most eloquent expression of man’s basic values in every culture, and also because it is relatively easy to give a college student a real appreciation of these arts in a relatively brief course. For these and other reasons I would hold out for a minimum of three years of introduction to the arts and letters.

d) An introduction, at the college level, to the synoptic disciplines, including the study of religion. These can all be taught in such a way as to make them useless or even harmful—history, by undue emphasis on isolated “facts”; philosophy, by undue preoccupation with esoteric abstractions; and religion, either by evangelical appeal or by a too dispassionate and unconcerned treatment of theological systems and ecclesiastical facts. Each of these three disciplines should become, for the thoughtful college student, a dynamic ma-
trix for his significant orientation. In his study of them he should come to realize how dependent all our understanding is upon an imaginative and sound historical perspective, how essential is responsible philosophical interpretation, how invaluable is a mature and enlightened religious faith. Three year courses, one in each of these areas, would seem to be the bare minimum.

e) These “area” studies should be accompanied by whatever collateral mathematical and foreign language study the student’s talents and interests dictate. A minimal introduction to both mathematics and foreign language should have been had before college, and college credit should therefore, ideally, be given only for more advanced study in both fields. Above all, mere routine requirements should be avoided. Consider, for example, the hundreds of thousands of college students who struggle painfully through an additional year of mathematics or of a foreign language which they will never use. “Enough for effective use, followed by actual use” would seem to be a wise guide in both these areas.

f) A liberal education involves both “breadth” and “depth.” If the foregoing provisions for “breadth” are satisfied in the manner indicated there should still be enough time left for each student to undertake a significant “major” whose purpose it would be to give him a first-hand taste of real scholarly mastery, at the college level, of one of these great disciplines. Our collegiate education today excels in its handling of the “major.” Courses in the major are often well-planned and interrelated, and experiments in departmental essays and comprehensive departmental examinations are proving highly successful on many campuses. Most colleges and universities are failing, however, significantly to relate the work in the major to a larger liberal matrix. Here a variety of experiments in setting up interdepartmental com-
mittees and programs are worthy of attention and imitation; wise committee guidance and willing interdepartmental cooperation can, we are discovering, do a great deal to help the student to transcend departmental provincialism.

g) Most undergraduate majors are in one, or in a related group, of what I have called "area" disciplines. But there is another type of liberal discipline which I have already referred to as the "tool" disciplines. These include pure mathematics, linguistics (in contrast to the study of a foreign language and literature), and a variety of methodological studies pursued at an advanced level. These technical advanced disciplines are normally studied at the graduate level, but a few very able undergraduates should doubtless be allowed to major in one or other of them in the context of a well-balanced liberal college course.

A similar defense can be offered for a major in any one of the technological disciplines which lends itself to reasonable undergraduate mastery. I can see no reason why a branch of engineering, for example, should not be taught in an authentically liberal spirit and why it should not be given a meaningful liberal context in the kind of program just outlined. We must acknowledge, however, that most technological courses are at present not taught in this liberal spirit, that most of them are liberally oriented only in a very feeble and fragmentary way. It is also worthy of note that our best established professions such as law, medicine, and the ministry have long since wisely insisted on a full four-year "liberal arts" program before intensive professional study is undertaken.

The ideal liberal curriculum which I have here roughly outlined would be perfectly feasible on every campus in America were it not for three disturbing facts: the general failure of our school system to equip our college students
with the basic skills and attitudes which are the prerequisites for mature college work; the tendency of many professional schools to urge their potential candidates to anticipate part of their professional training in college; and the consumption of precious time by R.O.T.C. programs. Many a college student must today spend as much as a year of his four-year college courseremedying his school deficiencies. (Note that all American colleges and Universities are today offering courses in remedial English!) Many of our ablest college students are seriously curtailing their liberal education by electing a large number of technical pre-professional courses which they do not actually need to enter a first-class graduate school. No one can deny our need, as a nation, for well-trained young officers in all our armed services. But we should not forget or ignore the price which is entailed when a fourth of a student’s college course is devoted to military training. Combine these three pressures, and more than half of our ideal four-year “liberal arts” course is automatically squeezed out of existence.

No easy remedy is available. It is encouraging to note, however, that the better high schools are becoming more aware of their collegiate responsibilities; that the more enlightened graduate schools are today asking for more, not less, liberal education at the college level; and that notable efforts are being made to salvage, for the cause of education, some of the precious time which many of our students are today giving to military training.

Our resultant task, then, is both complex and fascinating. It involves, on the one hand, admitting to college all who are likely really to benefit from such an education, taking them as we find them, and educating as many of them as we can as liberally as we can. But it would indeed be strange if some of our young people were not both abler and better
trained at the high school level than most of their contemporaries. It would also be strange, and unhealthy, if some of our colleges and universities were not better qualified than others to give these abler students a more challenging liberal education at the college level than is available to them on other campuses. If this is the case, it is hard to see why, in a competitive “open” society such as ours, our “leading” colleges and universities should not strive for whatever excellence they can achieve, even if such excellence is beyond the reach of most other institutions. Here, or elsewhere, mediocrity has no value; here, above all, anything short of the best possible is surely a crime. It is easy to find support for this thesis in first-rate technological schools as regards their own technological studies. They already pride themselves on giving the ablest students available the best possible technological training. Our task, as a nation, is to esteem liberal studies as highly and to work as strenuously for excellence in liberal education.

It is also our very practical task to discover ways superior to any yet discovered to introduce our engineering undergraduates more effectively to the basic liberal arts. The problem is partly one of time; these students are today able to elect pitifully few “liberal arts” courses. The question should be raised as to whether this scant allowance of time for their cultural development is sufficient, or necessary. Less excusable, and more easily remediable, is a modern tendency further to impoverish their liberal studies by substituting “business English” for the study of English literature, “business mathematics” in some form for real mathematics, “professional ethics” for a mature study of morality, etc. But the most challenging problem is the reverse—the problem, namely, of how to make a single year of philosophy or religion, of history or literature, etc., just as valuable and, in the
best sense, as practical as possible for the engineering stu-
dent.

Meanwhile, we must all hope that the popular and grow-
ing disciplines of engineering will, before too long, be raised
to the level of scholarly perspective and cultural orientation
presently enjoyed by law and medicine. Surely there is noth-
ing in engineering as such that forces the teacher of engi-
neering to train rather than educate, to produce technicians
rather than scientifically educated thinkers, or to dissociate
an education in technology from a sound liberal education
at the college level. I prophesy that the time will soon come
when specialized training in engineering will parallel such
training in medicine, law, and the other established profes-
sions—when such training will be predominantly graduate
rather than undergraduate, and when it will be made to
*presuppose* a sound liberal education at the college level.

Above all, we must remember that we are living in a pre-
dominantly "sensate" technological culture whose ethos is
anything but sympathetic to all that the liberal arts and
sciences stand for. All of us who are teaching on a liberal
campus are continually aware of multiple illiberal pressures
upon our students—from home and playing field, from busi-
ness and even from the churches. We can hope to help our
students resist these illiberal pressures only by developing a
vital campus ethos of our own, one which is dynamic enough
really to affect their lives and which is socially oriented
enough really to command their highest loyalties. We can
develop such an ethos, in turn, only in proportion as we
clarify and justify, again and again, our basic academic goals.
Hence the pre-eminent importance of the issues which we
have been considering this evening.
ASK you to explore with me this evening the difficult and crucial task of actualizing our Ideal of a University in our American society today. Ideals can be useless in a variety of ways. They can be ill-conceived, that is, so defined as to be more or less irrelevant to actual human need and aspiration. Or they can be conceived in such utopian terms as to discourage man's serious endeavor to realize them. Or, finally, they can be envisaged so largely in terms of actual present-day accomplishment as to induce complacency and to fail to challenge us to our most resolute efforts. But ideals need not exhibit any of these defects. They can describe a state of affairs different enough from the status quo to invite reform, yet close enough to what we now have and know to be intelligible and approachable. They can be sufficiently related to man’s potentialities to justify our best efforts to actualize them as completely as possible.

It is my hope that the Ideal of a University which I have tried to sketch in the preceding lectures may recommend itself to you as valid and useful in this sense. I have not dreamed it up out of nothing. I have sought to incorporate into it essential ingredients of older, well-tested University ideals. I have urged that a university must be oriented, first, last, and foremost, to truth—to the truths of the past established by “scholarship,” to the disciplined “speculations” of the imagination which are so essential to the search for new truth, and thus to what we today conceive of as “creative research” at its responsible best. I have urged that it is the prime task of a university today not only to foster such research on every front but to educate its students, both
graduate and undergraduate, to the point where they not only understand the meaning of enlightened research but are somewhat equipped to practice it, either professionally, or more informally as laymen with open questing minds. Finally, I have urged that this entire enterprise must be significantly oriented throughout to the basic needs and tensions of the community. Is this an Ideal worthy of our allegiance? Is it progressively realizable? Will such progressive actualization really benefit us, individually and corporately? These are the questions which vitally concern us all.

Last evening I tried to focus our attention more sharply upon the vital core of all liberal research and instruction, that is, upon the liberal arts and sciences. I first distinguished the four basic liberal "skills" (the "linguistic-logical," the "factual," the "normative," and the "synoptic") from the basic liberal disciplines, defining the latter as the conjoint application of the former to specifiable areas of major human concern. There emerged from this analysis five groups or families of liberal disciplines, those related primarily to nature, to society, to the work of art, to technology, and, finally, to all of human experience and to Reality as a whole, in all its length and mysterious depth. I argued that it is these disciplines, especially the first three and the fifth, which properly constitute the "stuff" of a four-year liberal arts course. I also discussed the very vexed contemporary problem of how best to amalgamate our more technical and "practical" studies, e.g., in engineering, into a humanizing liberal matrix.

This analysis of a liberal curriculum raises a host of new questions. Are these, in fact, the crucial liberating skills and attitudes—the skills best designed to free men from illiteracy and inarticulateness, from factual ignorance and
insensitivity to values, from provincialism and bigotry? Are these the basic disciplines which, in conjunction, can most effectively relate us to our “world” and our fellows? If so, how can these skills and attitudes best be drilled and inculcated into our young people—to what degree at each age level, and by what means? How can our college students be so “introduced” to all these disciplines that they can get some first-hand taste of what each has to offer in enlightenment and joy? How can each student be enabled to delve deeply enough into one of these disciplines to give him some sense of authentic intellectual mastery without loss of wider liberal orientation? Above all, what would be the abiding value to each individual student and to our free democratic society were all our college and university students able to acquire these skills, adopt these attitudes, and really understand these disciplines? Is liberal education so conceived, an idle luxury for the abnormally inquisitive, or an absolute necessity for the self-realization of the individual and for the continuing health of a free society? These are the crucial questions which every thoughtful parent and citizen, every ambitious young person, every teacher, scholar, and academic administrator must ask himself with profound concern.

I ended my second lecture with a brief reference to the obstacles which tend to block our academic progress towards this liberal ideal—the considerable failure of our school system to provide our entering students with the skills and attitudes they need in college, the tendency of our professional schools to usurp college time and energy for technical professional training, the complications entailed by the R.O.T.C., and, above all, a wider community ethos which, in many ways, is indifferent or hostile to what we, on
the University campus, should be trying to accomplish. It is here that we come up against human nature in all its sensate crudity, its love of things and of comfort, its hunger for social approval and prestige, and negatively, its disinclination to take seriously the so-called "higher" values of our culture. We also come up against human nature in academic dress, that is, against the powerful tendency of the academic mind to prefer lesser to greater academic values, to fear all radical re-examination and re-orientation, to persist in routines whose limited benefits are often outweighed by the harm that they have come to do. Hence our many-sided practical problems. How can a university today best serve the larger community? How can it make its own program of research more vital, its liberal instruction more dynamic and meaningful? How can it take steps to remedy its present considerable failure really to educate most of its "liberal arts" students?

Some of you may challenge the legitimacy of this latter charge. By what standard, you may ask, do I presume to say that we are, to a considerable extent, failing to accomplish today what we can and should accomplish at the college level? This is a fair question which deserves an honest answer. I base my charge upon (a) my conception of what a university should seek to accomplish, (b) our very notable success with a few students who are not mavericks or geniuses, and (c) our failure to transform most of our "liberal arts" students into the kind of persons we believe they might be and should be.

Let me be specific. How much genuine and lasting intellectual curiosity, social concern, and spiritual humility do most of our graduating seniors exhibit at and after graduation? My own honest and rueful answer is: Not very much!
And how effectively might these basic liberal attitudes have been established in most of them had we teachers and scholars addressed ourselves more wisely and energetically to our combined scholarly and pedagogical tasks? My own optimistic answer would be: *Far* more than at present! What I would counsel, in short, is unceasing self-criticism and perpetual reform rather than complacency or despair. What we *have* done for a *few* of our students we *can* do for *many* more; what some of us as scholars have so magnificently exemplified more of us can more effectively emulate. We will never perfectly attain our ideal—no ideal worthy of our greatest efforts is ever completely attainable. But we can surely approximate it far more closely and rapidly than at present.

It is in this spirit that I would invite you this evening to consider what I shall somewhat fancifully entitle the “Seven Deadly Academic Sins” which, in conjunction, delay our progress and lessen our effectiveness. We could, with equal propriety, list the “sins” of our community, that is, the many ways in which our society complicates and resists our efforts to vitalize and propagate our highest cultural values. To do so, however, would be less profitable because a society can hardly be expected to reform itself; it must await the reforming efforts of its major institutions. It is, accordingly, fully justified in demanding of us, on the college and university campus, to clean our own house and to make every effort to discharge our proper obligation to the community we exist to serve.

I hope that none of you will think that, in my enumeration of these seven academic sins, I am presuming to sit in judgment on any specific institution such as Rice. What I have to say is said in the light of my own undergraduate experience.
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at Amherst under Alexander Meiklejohn, who, in my judgment, has been the outstanding pioneering educator in 20th century America; in the context of thirty happy and profitable years at Princeton, Stanford, and Yale—all admittedly first-rate universities; and, last but not least, in the light of visits to over a hundred American college and university campuses during the last two decades. In short, it is my intention to analyse the present national academic scene, not any specific campus. If anything that I say seems to you here at Rice to be cogent and applicable I must ask you, on your own responsibility, to risk such concrete application and to devise whatever remedies you can.

The “sins” I am about to list are “deadly,” if my diagnosis is correct, because each, if left to run its course unhindered, constitutes a mortal threat to the liberal spirit, to liberal research and education, and, eventually, to the real freedom of the individual in our free society. I designate them as “sins” because I am impelled to take them very seriously in the light of the composite ideal which I have been at pains to outline.

(1) The first of these sins is the tyranny of factual scholarship. I am not condemning responsible scholarship. Such scholarship—accurate, precise, objective, meticulously documented, closely reasoned, correct in every detail—scholarship such as this is the absolute sine qua non of all intellectual achievement and progress. Without it our cultural heritage could never become explicit for us and could never be available to us as the reservoir of all that men have thought and felt, believed and done in the past. Scholarship is, in the life of the mind, the only antidote for amateurism and sentimental superficiality. Without it no responsible speculation, no significant creation, and therefore no meaningful research would be possible. Sound scholarship is the only possible
basis for everything that a real University should seek to accomplish at both the graduate and the undergraduate levels. I trust no one will accuse me of lack of respect for factual scholarship at its responsible best.

The scholarship whose tyranny I fear is a scholarship which is narrow and unimaginative, therefore pedestrian and trivial, and therefore, almost inevitably, complacent and self-righteous. What I am here urging is a realization that isolated “facts” are always dull and meaningless out of theoretical context; that some facts, however minute, are much more significant than other facts, some theoretical systems of interpretation more meaningful than others; and that it therefore behooves us, as researchers and teachers, to make every effort to concentrate our attention upon the more, not the less, significant facts and theories, for our own sakes and for the sake of our students and our society.

The crucial dependence of “fact” on theory can be illustrated very easily. Some years ago a colleague of mine in Princeton, an astronomer, called me up late one wintry night to tell me that a conjunction of two heavenly bodies was momentarily visible through the telescope and to urge me to hurry over and have a look. I did so, with some grumbling, and I was never more disappointed. For what did I see? Two tiny pinpricks of light! All I could do was to gaze at them a minute or so with simulated enthusiasm and then ask, by way of compensation, for a quick look at the craters of the moon. I need not labor the moral of my misadventure. It goes without saying that the failure was wholly mine, not my friend’s. He brought to the telescope a wealth of astronomical theory, a cumulative understanding, in the light of which these pinpricks took on great astronomical significance. It was my ignorance of astronomical theory which made the self-same observation so hopelessly dull for me.
All isolated "facts" are dull when they are divorced from illuminating theory. A theory, in turn, is dull apart from a wider theoretical context which finally relates itself to some major human concern. In other words, mature curiosity is basically selective, not indiscriminate. Many ascertainable facts invite the query, So what? and provide no satisfactory answer. It might, I suppose, be worth knowing how many grains of sand occupy a specified volume, but such information as this is, you will agree, very unlikely to be significant in any conceivable context. Many instances of Ph.D. "research," so-called, could be cited whose significance is quite as dubious. Labor of this type is dull, pedestrian, soporific, soul-destroying—not only a waste of time but an academic crime.

It is also all too easy, alas, to reduce what is itself highly significant to the status of factual meaninglessness. Witness, for example, many an undergraduate course in the history of philosophy which is a weary catalogue of dates, names, and philosophical tags or clichés; many a course in poetry which entirely neglects or kills all spontaneous response to poetic quality in its single-minded attention to the mechanics of versification; courses in any of the liberal disciplines which emphasize memory at the expense of reflection, correctness at the cost of imaginative comprehension.

What, then, is lacking when pedestrian scholarship becomes tyrannically mind- and soul-destroying? What is lacking is that capacity for "speculation" in which Plato so excelled—the ability to think creatively, boldly, embraceingly, synoptically, to stand back and see not just the individual trees, or branches, or twigs, but, in addition, the woods, the larger patterns and relationships in terms of which alone a detail takes on meaning and significance.
A teacher submits himself and his class to the tyranny of pedestrian scholarship whenever he is so interested in “covering the ground,” that is, in dealing with all the isolatable “facts” in his course, that he finds no time to pause and survey, to speculate and argue over controversial issues. Nothing could be more illiberal than teaching of this type. It condemns the student to passivity and frustration, to memorizing and periodic regurgitation of undigested facts, mechanically “learned” and quickly forgotten. It commits the unpardonable sin of refusing to hear and answer the intelligent students’ inevitable questions of Why? and Whither?

This tyranny expresses itself also in our very prevalent practice, especially in the natural sciences, of “introducing” students to a major discipline by forcing them to climb one or two rungs of the long professional ladder leading to the Ph.D. Imagine, if you will, a grove of trees against which are leaning several ladders from the top of any of which a fine view is available. Could anything be more stupid than for me to shout down to you, from the top of my ladder, “The view is fine up here. Why don’t you climb up two rungs of my ten-rung ladder!”, and then to scold you when you complain that all you can see, two rungs up, is the thick foliage of the lower branches? I am fully aware that each of us, and the natural scientist in particular, faces a very difficult pedagogical task in trying to figure out how to introduce a student to a discipline in which he is not going to major. But I cannot believe that the task is hopeless. The very ingenuity which has enabled the imaginative scientist to make his discoveries will surely enable him, in time, to devise ways of making them available, in some significant form, to the eager and intelligent non-specialist. What such a non-specialist will get will not, indeed, be identical with what the specialist has
attained as the result of years of study and research, but what he should get, somehow, should certainly be more illuminating and rewarding than what many beginning courses in the major disciplines now make available to him. We must, and I believe we will some day be able to, devise some sort of academic periscope which will give our liberal arts students not, indeed, a mastery of modern knowledge but a meaningful glimpse of it in all its exciting variety and scope. We will be able to do so, however, only in proportion as we free ourselves from the tyranny of factual scholarship, the fetish of "covering ground," the sin of compulsory memorizing for its own sake, and the sacred cow of the Ph.D. ladder.

(2) The second deadly academic sin is a variant of the first. It can be labelled the sin of misconceived research at the college level. Authentic research is genuine discovery of significant new truth. Sad as it may be, research today has reached the point, at least in most of the liberal disciplines, of being possible only at an advanced stage of rigorous professional training. It is literally impossible for a beginner in any one of our developed disciplines to indulge in original research that is really objectively significant. The best he can do in history is to unearth a few new "facts" too trivial to have merited the attention of mature historians. The same is true in all the social sciences, in the arts and letters, and, a fortiori, in natural science and in philosophy and religion. It is only the very unusual undergraduate who, as a major in a natural science, can, toward the end of his college course, perform some meaningful experiment under the constant supervision of his teacher. In other areas such undergraduate research is even rarer if not wholly impossible. In our day real research is, to all intent and purpose, possible only at the doctoral or post-doctoral levels.
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Indeed, our insistence upon “originality” in the doctoral dissertation is open to serious question. I well remember going years ago to Professor Norman Kemp Smith in the University of Edinburgh for counsel regarding my Ph.D. thesis. My opening remark accurately reflected the American expectation, then and now. “I suppose,” I said, “that I must try to be original.” I shall never forget his reassuring answer. “Good God, no! If you prove to have a very good mind, and if you work very hard, you may have an original idea in philosophy worth publishing by the time you are forty. Meanwhile, select a major philosopher and do what you can do to comprehend and restate some of his key ideas.” No Ph.D. candidate in philosophy ever got better advice. As a result, I apprenticed myself to Immanuel Kant; I struggled to comprehend the depth and breadth of his philosophy; I focused my attention as critically as I could upon some of his basic ideas. In the process I learned, in some measure, how to think philosophically. What better philosophical training could I have received?

I say this not in wholesale criticism of current practice at the graduate level. Genuine research is certainly within the reach of graduate students in many fields, perhaps even in philosophy where wisdom is, or should be, at a premium. What I am pleading for is an honest and realistic appraisal of significant research and of the student’s actual ability to undertake such research at the college and graduate levels. I am protesting against our making a fetish of originality, even at the graduate level, that is, of insisting on originality at the price of triviality.

However valid this protest may be in the graduate school, it is surely valid at the level of undergraduate and particularly underclass instruction. The case is clearest in laboratory
work in underclass courses in science. Such work is today, almost of necessity, a sham whenever the “experiments” of the neophyte are thought of, and spoken of, as authentic “experiments.” They are, of course, nothing of the kind. They consist, at best, of the student’s effort to repeat, by himself and under supervision, what others have done before him countless times. His is no probing into the unknown; it is no more than a traveling along familiar paths whose destination is certain and familiar to the initiated.

But, you may say, is this not desirable? Indeed, how else can a student learn what scientific experiment is all about? How else can he savor at first hand the excitement of man’s quest for new truth? The answer, surely, is obvious and crucial. All these procedures are good and valuable provided that the emphasis falls throughout not on objective novelty but on what is new for the student. The academic sin I am protesting against is our widespread pedagogical confusion of two very different things—authentic research productive of knowledge which no man has ever had, and the young student’s discovery and critical assimilation of familiar well established truths. What I plead for it that we concentrate our attention, as teachers, upon his experimental, exploratory venture into what, for him, is unknown or unfamiliar, upon such “originality” as will inevitably express itself in his thinking as he, being what he is, encounters new challenges and seeks to assimilate and use in his own way new facets of his cultural heritage.

This is, indeed, what we all profess to do in our teaching. What concerns me is that we so frequently, and inadvertently, shift gears, as it were, from a type of pedagogy which is realistically student-oriented to a type of instruction which is, in fact, primarily a reflection of our own mature research
interests. Valuing real research as we do, we tend to believe that a student should be able to benefit from a small dose of what we relish in large doses, forgetting that his task, as a student, is primarily to catch up with his culture and to equip himself for later authentic inquiry of objective significance.

The attitude I am recommending is in no sense an attitude of approval of undergraduate uncritical and uncreative passivity. What is sorely needed is more of the very opposite attitude. What our students most need today is a mastery of the basic liberal skills and attitudes and the first-hand experience of how to put them to use in this or that discipline. But this they can learn not by imitating our most mature research but only by tackling, as honestly and critically as they can from their own individual perspectives, material which is familiar to us but new to them. This is why their questions, however naïve, their speculations, however crude, their ideals and doubts, however adolescent, are of such crucial importance to them, and why they should therefore be of crucial importance for us.

(3) Our third besetting sin is our recurrent failure to recognize and do justice to the uniqueness of each of the liberal disciplines. This might be labelled the sin of disciplinary egalitarianism. It, too, takes many forms.

There are those, for example, who argue that because any one of the major areas of study can be studied in a liberal spirit, it follows that an exclusive, or nearly exclusive, focus upon this area will suffice to constitute a liberal education; or that a scholar is himself a liberally educated person merely because his own research is open-minded and undogmatic. The fallacy of this argument should be patent. It is as though one were to argue that, because spinach is nourishing, an
exclusive diet of spinach is a balanced diet.

Faculties are today prone to "solve" the ever present problem of the overcrowded undergraduate course schedule by stipulating that a student shall elect mathematics or philosophy, political science or economics, psychology or religion, etc. I do not deny that this procedure may, in fact, be the lesser of two evils, the greater evil being the complete neglect of one or more families of disciplines. But I do protest against the assumption, too frequent and too complacent, that the disciplines thus bracketed are, in fact, meaningful alternatives. Each discipline has its own unique contribution to make to a rounded liberal education and to a balanced liberal perspective; each has its inescapable limitations. It is indeed impossible for any student, or indeed for a mature scholar, to do full justice to all of them. But each discipline should be assessed on its own merits and elected or omitted on that basis.

May I cite mathematics as a case in point, despite the fact that I am myself very ignorant of mathematics? No discipline can rival mathematics in abstraction; none can equal it in conceptual precision and purity; nowhere else, in our secular experience, can we hope actually to encounter absolute perfection, unless it be in the field of art. This is the unique precious ineffable quality to which all students of mathematics should, if possible, be introduced. This is the chief reason for studying mathematics for its own sake. Its practical value, in science and technology and business, is, of course, also real, but from an educational point of view it is secondary in importance.

Or consider the natural sciences. Not only is there no substitute for them since they are, in conjunction, our only way of investigating nature in an orderly fashion; each has
its own distinctive methods and concepts which render it significantly unique. Biologists, for example, have tried in vain to reduce vital phenomena to non-living mechanistic elements; life and growth, whatever their physical conditions and concomitants, demand recognition and investigation with the aid of concepts and methods peculiarly adapted to them. Meanwhile, the natural sciences as a group are unrivaled in quantitative precision and methodological objectivity. Nowhere else can a student encounter these characteristics so vividly or conclusively.

A similar case can be made for the social sciences. They too are irreplaceable as a group; how else can we study our society and its institutions in an orderly manner? Each of them, in turn, has its unique perspective, methods, and insights. Economics and political science are not interchangeable. However profoundly they complement each other, each has its special contribution to make to human knowledge. The same is true of social psychology, whose problems are no less distinctive. Of all the social sciences, sociology and anthropology are most alike; yet they too differ greatly in that the latter is focused upon primitive cultures, the former, on our own infinitely complex society. Hence the importance of introducing a student to all of these disciplines and of helping him to see them fairly in their subtle relations to one another.

These social disciplines provide the informed teacher, meanwhile, with a special opportunity. Just because these disciplines are less advanced and precise, the thoughtful student can more easily come to grips with major frontier problems with which the experts are themselves struggling than is easily possible in the natural sciences. And just because these disciplines all deal with man as a purposive
evaluating being, they provide an ideal setting for the discussion of many problems of value in very concrete contexts. For example, economists and political scientists are being increasingly consulted by business and government on questions of policy, and policy necessarily involves an appeal to some norm or standard. Here many problems arise quite naturally which are of great human importance but which are far less germane to the natural sciences.

The arts and letters, in turn, all deal with the work of art—its creation, its nature, and our evaluative response to it. Any of the relevant disciplines can introduce the student to the crucial aspects of the total “esthetic transaction.” But only first-hand acquaintance can give him a real insight into what most significantly distinguishes one art from another and into the power and limits of each. Nowhere else, meanwhile, can he actually encounter so sensitive and poignant an expressive interpretation of human values; nowhere can he be helped so powerfully to understand human nature and human need and aspiration. It is indeed tragic that the “liberal arts” programs of so many of our college students are so sadly deficient in this crucial area of the “fine” arts.

If the more restricted disciplines are all non-interchangeable, the synoptic disciplines are even more so. Philosophy, history, and the study of religion provide, in combination, the inevitable matrix for all cultural understanding and appreciation. There is no substitute for, and no escape from, history. Everything natural and human transpires in time and falls into its appointed place along the time axis. Everything we can encounter and know has a character of its own by virtue of which it is related to everything else; everything has therefore its appointed place in any philosophical account of experience as a whole and reality as a whole. Nor can we ever
escape the perennial issues of religion—of time and eternity, of sin and salvation, of freedom and necessity, of the Infinite and the finite, the sacred and the profane. How pathetically restricted, then, must be a student’s outlook whose knowledge of history is limited to the American scene, or whose knowledge of philosophy is restricted to what he can derive from haphazard bull-sessions, or whose knowledge of religion is limited to the dogmas of a single church? He is entitled, I submit, to all the help we can give him to place American history in the wider context of European history, and European history and culture in the still wider context of world history and world culture. Historians like Toynbee have given us a perspective of which no undergraduate should be ignorant. Philosophers like Whitehead can clarify our synoptic vision with unparalleled power. Theologians like Tillich and Barth can give us an invaluable understanding of religion and its significance for man today.

I am not, of course, recommending any kind of indoctrination, any regimentation of man’s free spirit. Our concern should be, rather, to free our students from the tyranny of provincialism by introducing them to alternative interpretations of human history, to variant philosophical systems, to the rich variety, past and present, of religious belief and unbelief. Only as he is thus presented with alternatives is he in a position to make his own responsible choice and to believe what he freely wishes to believe.

My plea, then, is that we professors give due honor to all these disciplines and that we make every possible effort to help our students to taste and savor each for himself. Only in proportion as we succeed in this effort will we have introduced them adequately to their rich academic heritage.

(4) The fourth deadly academic sin is the fetish of scholarly
objectivity. It was commonly supposed twenty years ago—and this belief still lingers—that a true scholar deals only with proved and indubitable "facts" and that he has no business, as a scholar, to entertain or express "mere" opinions on controversial issues. Some years ago I was asked by the American Council of Learned Societies to be the chairman of a committee to investigate and report on the status of the humanities in this country. When we submitted our report we were roundly censured by several eminent scholars of the Alexandrian School for taking sides on many controversial issues in the area of the humanities and for urging resolute remedial actions to correct what we believed to be current weaknesses in humanistic scholarship and teaching. This, they felt, was so "unscholarly" that they refused to publish our report; we had to publish it on our own responsibility.

I am also reminded of the Dean of a famous School of Education who, not long ago, gave the following advice to a large class of prospective school principals and superintendents. "My advice to you is to forbid, in the school system for which you are responsible, all discussion of sex, politics, race, religion, economic issues, etc. All these topics are dynamite. Leave them alone." What was there left to discuss in class? Mathematics and the weather!

In fact, of course, all the problems and issues which most deeply concern us as human beings are, of necessity, controversial. None can be solved finally and definitively. What is most needed in our unhappy world is the ability not to dodge these issues but to reflect upon them and to discuss them with mature objectivity. What greater responsibility have we to our students than to teach them, by precept and example, how to take part in the discussion of these controversial issues in a mature and responsible way, and then
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how to make up their own minds and act with resolution and with tolerance for the divergent convictions of others? No teacher should waste his students' time teaching them indubitable trivialities; in every discipline he should focus their attention, so far as possible, on the essentials of his subject. But these essentials are always, in the nature of the case, controversial. He has no right to discuss these controversial issues, in turn, unless he is able and willing to take sides, with as much enlightenment and conviction as possible. If he shirks this responsibility he simply lacks the stature of a first-rate teacher and scholar. Finally, if he has these convictions it is patently dishonest for him to refuse to declare them or to try to hide them. His students are entitled to know where he stands, and why, so that they can agree or disagree with him for good and sufficient reason. Incidentally, a teacher is fooling himself if he thinks he can hide his real convictions from his students. Sooner or later he is bound to reveal his true stand, and then, when he does so, he will stand condemned as a hypocrite or a coward.

In short, it is our bounden duty to show our students how a man of integrity and humility can believe something with all his heart and still be genuinely tolerant of conflicting convictions; how a position can be held both firmly and critically. Our greatest single cultural need today is for reflective commitment. Blind dogmatic commitment is easy and widespread; witness most of our political and religious belief. Endless reflection never issuing in decision and action tends to be the occupational disease of the scholar. That too is relatively easy. The mark of maturity is the ability to combine reflection and commitment, to decide and act not on the basis of logical certainty but informed moral certitude. Our richest gift to our students is such help as we can give them to attain.
this rare and precious art of mature reflection, decision, and action.

(5) The fifth deadly academic sin is the acceptance of a spurious hierarchy of academic values. There are scholars who value their scholarly research so highly that they actually begrudge time spent on graduate students. All undergraduate teaching is, for them, a necessary but unmitigated evil. Others take pride in their graduate instruction but do what they can to spend as little time on undergraduates as possible. Then there are those who enjoy and value undergraduate teaching but who feel that only their upperclass courses and their work with the departmental majors is really worthy of their talents. This pattern of academic snobbishness actually extends down to kindergarten. We college teachers tend to look down on high-school teachers as an inferior breed; they tend to think of elementary teachers in a similar way.

What could be more spurious than this scale of values? All these activities, pedagogical and scholarly alike, are essential, invaluable, non-interchangeable. Each has its proper limits and its golden opportunities. The elementary school teacher can do for her young children what can never later be done or undone; never again will they be so impressionable. The high-school teacher has his unique opportunities, and so does the college teacher at the freshman and at every succeeding level. No one of us is equally equipped to do his best teaching at all these levels—this is obvious. There are those whose genius is the wise teaching of the very young. There are others who should indeed restrict themselves to pure research or to research and graduate instruction. Some of us, thank God, are at our best at the college level. What alone is vicious—and what could be more vicious?—is the
smug assumption that research is somehow more honorable
and valuable than teaching, or that advanced instruction is
more dignified and worthy than elementary teaching.

This snobbish allegiance to false values expresses itself
also in other ways. There are those, for example, who, even
in a "liberal arts" program, insist on speaking only as narrow
specialists; they actually pride themselves on refusing to ex-
press any opinion on issues which they cannot assess as
experts. This attitude, when we reflect upon it, is the very
antithesis of the attitude favorable to wide liberal orienta-
tion; it is, in essence, parochial and authoritarian. A collect-
ion of expert opinions differs in kind from a mature philos-
phy of life which, for any given individual, must include
opinions, less than expert, on crucial issues which the indi-
vidual in question has not been able to explore at first hand
with scholarly competence. Press this illiberal position to the
limit and you will kill what is most precious in our culture
and our free society; pushed to its logical conclusion, it gives
the lie to all claims for the value of a liberal education.

Here one of the gravest weaknesses of our whole educa-
tional system at the university level stands out in sharp relief.
We university teachers still tend to think of ourselves as,
first and foremost, experts in some special discipline. Well
and good! If this were not true we would indeed not be fit to
keep our jobs. But we also—and here's the rub—tend to feel
no obligation to acquire and use the very liberal education
which we are trying, conjointly, to make available to our
students. In short, we insist on believing in a first-rate miracle
—the miracle of having our students achieve a liberal per-
spective from an aggregate of teachers most of whom them-
selves lack this perspective. Most of us shrink from the labor
and risk of trying to acquire such a perspective for ourselves;
yet we expect our students to acquire it by themselves, in all their ignorance and immaturity, without our explicit help and guidance. Yet most of us find many or most of the Biblical miracles too incredible to accept!

The sin of bogus academic values expresses itself in still another way worthy of mention. There are many college and university teachers on every campus who, understandably but, I believe, unjustifiably, feel that their responsibility to the student ends when class is dismissed. What the student thinks and does out of class is, they believe, his affair (provided he doesn’t run afoul of the Dean); and what the teacher does with his time out of class is wholly his affair—here the student has no lien on his interest, energy, or time. All hard-working teachers will understand this attitude and will tend to share it. Teaching is exhausting; the teacher must indeed have his own periods of rest and relaxation, of association with his contemporaries, of family life, of quiet scholarly study. By the same token, the student must be left to himself; he must be free to live his own life, make his own friends, work and play as he chooses.

But this, surely, is not the whole story. For liberal education is nothing if it is not the education of the “whole man,” not only of his reason but of his imagination and his emotions, his feelings and his will. This means that, if we are really serious in our liberal professions, we must concern ourselves in all appropriate ways with the total life of our students. Their campus life is, for better or for worse, our concern. I am not recommending any sort of paternalism or regimentation; we must continue to honor their proper autonomy and privacy as well as our own. But we do, I must insist, owe it to them to enter into their extracurricular activities and their personal and corporate problems whenever
and howsoever we can do so to their benefit. How and when this is to be done is of course very difficult to decide. Here we need all the tact and sympathetic unsentimental concern we can muster.

(6) This brings us to our sixth academic sin, the sin of *indifference to the campus ethos*. A campus ethos—itself prevailing climate of opinion, expressing itself in prevalent attitudes and mores—is a very curious, subtle, and intangible thing, but no less real and influential on that account. Those of us who have visited many different campuses have learned to detect the prevailing ethos very quickly, and all teachers and administrative officers who are in close touch with students appreciate its profound significance. It tends, on any given campus, to endure from one student generation to another; it may also change, sometimes slowly and sometimes with surprising speed. It is a function and expression of tradition; it is only partly and indirectly susceptible to administrative or faculty legislation. It cannot be quickly changed or abolished by any presidential edict, yet it is modifiable in many ways.

What are some of the chief factors which, on the average, combine to determine the dominant ethos of a campus? The smaller the institution, the more influential is the attitude of the president and his administrative officers. But even in a large university, the cumulative decisions of the administration become profoundly influential. A president can, over the years, do a great deal to encourage or discourage research; he can promote significant rather than trivial research; he can strengthen or weaken various kinds of teaching; he can help to build, or he can discourage, the growth of a unified friendly academic community.

A president can do very little, however, without full
faculty support. A faculty can develop an ethos of its own, one which is narrowly departmental or significantly interdepartmental in orientation, one which is autocratic and hierarchical or democratic, one which is responsible and cooperative or individualistic and more or less anarchistic, one which is more or less student oriented. A faculty which is, on the whole, deeply concerned to help the student in every way will make it possible for a teacher with limited endowments to do fine and useful work; the most valiant efforts of an inspired teacher will achieve little on a campus noted for faculty indifference to students. No campus can hope to develop an ethos favorable to the rich and rounded liberal education of its students without strong faculty support and the time-consuming concern of many of its members. Many teachers who prefer to devote themselves primarily to research are unaware of how deeply they are indebted for the attentive attitude of their own students to the patient labors of their colleagues who think it worth their while to help mould a campus ethos favorable to mature undergraduate study.

The student body itself is, of course, the chief factor which determines the ethos of a campus. Young people are notoriously conservative and imitative; they have an understandable urge to be alike, not to be queer or out of step. But campuses differ greatly in the extent to which this conservatism is tyrannical and cruel. On some, the slightest deviation from the norm of dress, interest, and behavior is condemned so sharply as to stigmatize and practically ostracize any deviant individual or small minority group. On many campuses a serious student is branded as “queer” and held suspect; on a few, any form of “collegiate” or “athletic” enthusiasm is taboo. Some campuses are notable for a healthy
intellectual ferment; public lectures are well attended and
good discussion is the rule, not the exception. On others there
is little evidence of genuine intellectual curiosity. Some are
favorable to artistic interest, others are monolithically hostile
to the arts. Campuses differ also in the extent to which they
reflect, often tyrannically, the prevailing ethos of the larger
community, of typical families and local churches and evan-
gelical business leaders. Athletically fanatical alumni, for
example, can do much to encourage an overemphasis on ath-
etic prowess; alumni who are themselves liberally cultivated
can, by the same token, do much to support and encourage
life of the mind among undergraduates.

It is, then, these three groups—the administration, the
faculty, and the students—with a potential "assist," for better
or for worse, from the alumni—who, conjointly, over the
years, set the campus ethos in any specific college or univer-
sity. What is so essential for the cause of liberal education is
that the ethos be as favorable as possible to all that liberal
education should seek to promote. The stronger and the more
illiberal the ethos of the larger community, the more im-
portant it is that the campus ethos be strong enough to resist
subversive influences from without, whether they be religious
or secular, economic or political, social or athletic. What is
needed is a community of younger and older searchers for
truth, a real community, cooperative but free, whose ultimate
dedication to truth will, so far as possible, express itself not
only in class but out of class, not only in thought but in atti-
tude and action.

(7) The seventh and last sin on my list this evening may,
for lack of a better term, be called inadequate concern for
student motivation. Many administrative officers and some
teachers are acutely aware of this problem; most of us teach-
ers ignore it more than we should. The facts in question are obvious and not in dispute. On all university campuses the pre-professional students tend, on the whole, to be strongly motivated to "get ahead" and therefore, usually, to work hard. But this motivation of theirs largely reflects the dominant tendency of our society in being highly competitive, utilitarian, and practical. Their chief goal is not scientific knowledge, technical skill, or even the chance to contribute to human welfare; their dominant goal is "success," defined in terms of money, power, and social prestige. On the same campuses most, though mercifully not all, of the liberal arts students show a grave lack of motivation, perhaps because, in their heart of hearts, they cherish the same ambitions but see no close relation between academic effort and later worldly "success." It is primarily this group that does most of the undergraduate loafing and that throws itself with such frenzy into extra-curricular activities. Both groups, in short, lack to a notable degree the kind of motivation which a healthy university ethos should foster. What, if anything, can be done to correct this unhappy situation?

The problem is much too complex to diagnose in the few minutes still at my disposal. It is also, I am free to confess, one for which neither I nor anyone I know of has a distantly adequate solution. The problem is nation-wide in extent and of absolutely major pedagogical importance. It can, I feel certain, never be solved by experts in any one of the disciplines or by any solitary effort. It is a great pity that one of our great Foundations does not set up and underwrite an extensive study of student motivation particularly at the college level, drawing, as it might, on all our complementary resources—sociological, psychological, psychiatric, ethical and religious, secular and academic—which, in combination
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and in time, might help us to understand and help our young people far better than we do now.

Meanwhile, there are some factors now within our reach and control which might well, in combination, improve the situation on any given campus. A more enlightened liberal-arts curriculum and the more enlightened and enthusiastic teaching of all our students in all their courses, “practical” and “liberal” alike, should do much to infuse into our abler students a greater zeal for the “higher” values. Wholehearted cooperation of administration, faculty, and students in the creation and strengthening of a campus ethos favorable to these values might help immeasurably, since students are so very prone to get their motivation by contagion from their fellows and from the ethos of their community. Something, possibly a great deal, might be accomplished by continuously following the lead of some recent experiments to make collegiate liberal education and postgraduate professional education more nearly coterminous, so that the normally strong but misdirected motivation which now often accompanies professional study might be more wisely directed by being more closely associated with the liberal studies.

It may be, however, that we should rely primarily on a more indirect approach to the problem. It does seem to be true that the only thing we can really “teach” our students in the strictest sense of the word “teach” are the “skills” and “disciplines,” and that the only way we can help them to acquire the basic values and attitudes which it is the chief purpose of these skills and disciplines to foster is by indirection—by contagion or osmosis. We can “teach” a student the “mechanics” of mathematics—the axioms and postulates and methods of demonstration—but how can a teacher of mathematics instill in his students a love of mathematical precision
and elegance save by the unspoken contagion of his own attitude? We can teach the structure of a sonnet and the rules of versification, but only our own love of poetry can arouse an echoing love of poetic quality. This is true, I am sure, throughout the curriculum.

It follows that that faculty will tend to arouse the greatest intellectual ferment and the most abiding sense of social responsibility in its students which is itself exemplary in both respects. It must be hard for an engineering student not to get excited about engineering if his professor is himself deeply involved in various socially significant engineering projects. An economist who is actually advising government, or some business concern, should find it easy to quicken his students' imagination and fire their interest in concrete social problems. A teacher of art who is himself a creative artist or who is at least in actual touch with contemporary artists and their work should be able to make his teaching of art not merely academically sound but humanly significant to his students. Genuine religious commitment and practice on the part of some of the faculty might well be more eloquent testimony for a living religious faith than much learned discussion.

In short, as we individual members of the faculty manage to pry ourselves loose from our several academic ivory towers, so seductively comfortable and safe, and as we, in our several ways, venture into the actual world of affairs, into the turbulent eddies of our living culture with all its stresses and strains—in proportion as we actually assume some of the responsibilities of our community and share in the drama of life of our fellow citizens, we may well become increasingly able to arouse in our students some of our own enthusiasms, our own sense of vital rootage for which I pled at the end of
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my first lecture. Thus and only thus can a university draw strength from the community and vitally relate itself to its life. Only as we in the university are an authentic part of our community can we, individually and corporately, hope to help not only our students but our fellow citizens.

I have of course raised many more questions in these lectures than I have been able to answer, and such answers as I have ventured to offer are all, I fully realize, open to criticism and discussion. This is as it should be. I have, of necessity, dealt solely with generic academic problems and possible generic solutions to these problems. May I conclude with an urgent reminder that every university and college must, if it is to be as vital and useful as possible, work out its own solution in line with its own tradition, its own unique characteristics, its own special genius! By the same token, every president must administer as best he can, his background and temperament being what they are; every teacher must teach and probe and write as his talents and interests dictate; every student must, in the last analysis, work out his own academic salvation or damnation.

Granting this crucial fact which must never be forgotten, may I very briefly recapitulate my own deepest beliefs in this academic area? I feel very sure that no academic institution can prosper unless it is existentially rooted in the rich soil of the local, national, and world community. I am sure that a university must, to be worthy of its name, be dedicated to all truth, secular and religious, scientific and artistic, philosophical and historical, Western and Eastern—and not merely to truth but to significant truth, that is, to wisdom. I am sure that though a minority group on a faculty or in a student body can accomplish much if it is sufficiently dedicated, a university can really come into its own only if administration
and faculty, trustees and alumni, students and their families, all cooperate, wholeheartedly and devotedly, to make of it what it might and should become. I conclude with my opening remark, that the problem of the University in our culture is a problem, and that it is one of the most crucial problems which our culture must face and try to solve. Our whole culture depends essentially upon the health and wisdom of our schools, our colleges, and, not least, our universities. All of us who are in any way connected with a University like Rice have a great opportunity. May we all rise to the challenge!