

“Why Should We Maintain the Centrality of Liberal Education
in a Research University?”

Phillip Sloan

Program of Liberal Studies (Emeritus)

University of Notre Dame

sloan.1@nd.edu

(for conference circulation only)

The title of this panel presentation, “Conceptualizing Education,” focuses attention on some substantial issues within academia: first there is the distinction between “liberal” education and technical education--what we hear of often under the name of STEM--education in science, technology, engineering, and medicine. There is then the distinction between liberal education and professional education in business and law. Related to this is the intersection between liberal education in some traditional form, and the intensifying research model that is driving curricular reforms and teaching methods. This thrust toward research specialization, intense disciplinary formation, and graduate-level work is driven by the increasing demands for specialized knowledge, for research skills, and for education that has marketable value in a dynamic technology- and- market driven society.

Some of these differences in how we think of education have to do with matters of size. What is possible in a small liberal arts college, of which we have representatives here, is not practical in an institution of the scale of my own, except in a unique situation such as that in which I have lived my own academic life, teaching in the Program of Liberal Studies in which we have essentially a small liberal arts college imbedded within a larger disciplinary university.

But there are other issues that we must confront that do not have to do with matters of scale. One of these is the changed nature of our students. I will focus this by reference to the findings of the Report of the National Endowment for the Arts, *Reading at Risk*, issued in 2004.¹ This study presented some stark figures in the decline of reading by American adults.

¹ *Reading at Risk: A survey of Literary Reading in America*, National Endowment for the Arts Research Division Report #46 (Washington: Gov. Printing Office, 2004), available at [www](http://www.nea.gov).

The Report quantifies the impressions I presume many of us have gained from our students over the last two decades: they simply are not reading much, and particularly not reading what we might call “literary” texts, however we might define these. The figures given in this report indicate a decline of around 14% in literary reading between 1962 and 2002, with 9% of this decline having occurred since 1992. I am sure this has even intensified in the last decade. This matches my own anecdotal impressions, and this is in the context of teaching in an elite private institution with high admission standards. We are, it seems, talking about “liberal education” in a very different academic environment than the one I felt was in place in the educational world of the 1950s when I was an undergraduate. Even though I had a very narrow scientific education in my undergraduate years, I still read a great deal in other areas and there was a common fund of education encountered in even the ordinary state high school that could be presumed on most American college students— experience with a certain canon of plays of Shakespeare, readings from a group of American authors such as Hemingway and Faulkner, several years of English composition, foreign language study, including quite possibly Latin, and mastering a basic narrative of American and even world history. This is not true any longer for most American students.

Of course, if this survey were conducted with the aim of estimating the time spent by this same group in exploring the web, interacting on social media, and reading and processing information on-line, I am sure these figures would be considerably reversed. The skills needed for this new form of information management are considerable. We are teaching a generation that has always had the web and e-mail and computerization available, and now is deep into social media. This has many consequences. This itself means a very different relation to a text than we educated in a book culture have known.

My concern is not, however, to issue jeremiads. I simply describe some issues that we have to deal with creatively as educators, and to which I am not fully certain how to respond. We are in the midst of remarkable transformations in culture that are tied to technological change, perhaps only matched in the past by the transition from oral to print culture at the beginnings of modernity. Like the print revolution, the computer transformation profoundly affects how people transmit and process learning and information. It also makes those of us

committed to traditional ways of education anxious about learning and the transmission of culture. However we assess this, we have to acknowledge a fundamental change that requires new methods and responses.

This dynamic change transpiring around us necessarily renders problematic at least some of the rationale for traditional liberal learning. As scholars like Bruce Kimball and Otto Bird have developed in their different analyses of the history of liberal education,² the original form of learning that grew from antiquity, the Liberal-Humanistic ideal, which gave us the original meaning of liberal education, centered around the private reading of physical books, many of which required significant concentration to digest and assimilate. Along with this was the cultivation of the great arts of the trivium--grammar, rhetoric, logic, and a concern with eloquence of style.

My own educational program, dedicated to the reading and discussion of the classic works of the tradition in the sciences and philosophy as well as in what might be generally termed “humanities,” experiences this issue of communication with the past deeply. Our students soon run up against the fact that reading authors like Herodotus and Thucydides, let alone Aristotle, Ptolemy, Euclid, Newton, Kant, Adam Smith, and Darwin may not exactly be “enjoyable” reading. These works can only be done by shutting off the I Phone and computer and devoting prime time to a careful and slow reading of texts, annotating them as they go, and making summaries of the arguments. This kind of careful and patient reading may still be required for the reading of textbooks in mathematics, physics, chemistry and economics, but most students in the arts and letters college have not expected this in the world of the liberal arts.

What then is the importance of liberal education in our contemporary world, and the institutions devoted to it, when so much is currently demanded of specialized knowledge of the kind that is contained in the mathematics, physics and economics textbooks, or for expertise in STEM subjects? If the kind of liberal education sought by the historic liberal

² Bruce R. Kimball, *Orators and Philosophers: A History of the Idea of Liberal Education* (New York: Teacher’s College Press, 1986), esp. p. 228; Otto Bird, *Cultures in Conflict: An Essay on the Philosophy of the Humanities* (Notre Dame: University of Notre Dame Press, 1976). See also Bruce Kimball’s foundational

arts undergraduate college is something that requires this considerable intellectual effort, but has no immediate practical benefit, should it continue to occupy an important place at the academic table? What are the goals, and can these interface with those of the German-derived research university?

So initially, what do we mean by liberal education today? For a textual source I will refer to the definition given a few years back by the Association of American Colleges and Universities, a major networking organization dedicated to liberal education in all its manifestations:

Liberal education has been a philosophy of education that aims to empower individuals, liberate the mind from ignorance, and cultivate social responsibility. Characterized by challenging encounters with important issues, a liberal education prepares graduates both for socially valued work and for civic leadership in their society. It usually includes a general education curriculum that provides broad exposure to multiple disciplines and ways of knowing, along with more in-depth study in at least one area of concentration.

By its nature, liberal education is global and pluralistic. It embraces the diversity of ideas and experiences that characterize the social, natural, and intellectual world. To acknowledge such diversity in all its forms is both an intellectual commitment and a social responsibility. For nothing less will equip us to understand our world and to pursue fruitful lives.³

There are several themes in this definition that seem important to tease out. Initially I highlight the terms “empowerment,” “liberation of the mind,” “broad exposure to multiple disciplines and ways of knowing,” along with the now-familiar themes of “liberation,” “breadth,” “pluralism,” and “diversity.” The definition expresses the need to acquire multiple perspectives, and there is a presumed lack of closure on any one set of truths or conclusions. We also see how easily this definition can then sanction the development of

documentary history of liberal education, *The Liberal Arts Tradition: A Documentary History* (Lanham, MD: University Press of America, 2010).

expressly post-Enlightenment, post “encyclopedic” goals for liberal education falling in the broad category of “post-modernism.”

But we also see interwoven in the AACU statement references to the “cultivation of social responsibility,” and the “preparation for socially-valued work and civic leadership.” This maintains continuity with the moral goals of a much older tradition of liberal education, one that reaches back to the classical tradition of *artes liberales* of Antiquity, characterized by Bruce Kimball and Otto Bird as the “Literary Humanistic” ideal that viewed education in the liberal arts to be directed to fashioning the citizen for practical life in the city.

I highlight these tensions in the exegesis of this text, because they disclose a fundamental incoherence in how we might conceptualize the meaning of a liberal education. Space does not allow me to develop here a systematic argument in favor of one specific form of liberal education over the others. But I am committed as an educator principally to an *artes liberales* concept and I advocate a renewal of key components of that tradition in our modern context.

One of the major transformations in the concept of liberal education that I have experienced in the past forty years has been the shift from a concept primarily based upon reading and writing about a canon, or at least a general collection, of works of the western tradition which have been esteemed as exemplars of style, argument, and persuasion, to that in which issues of methodology and critical analysis have become the emphases, with a great pluralism in the approach to what is actually taught. By implication this tends to entail the conclusion that there is no positive *content* to liberal education, but only a set of *methodologies* that give it some unity.

I do argue that if genuine liberal learning is to survive in the modern academy, there needs to be something more to liberal education. And I would go so far as to claim that this can connect with some of the positive goals of the classical Liberal-Humanistic tradition—character development, civic virtue, and preparation for life in the *polis*.

Of course we all know that there is broad disagreement about any specific goals that might be articulated: whose goals? which rationality? what about the competing claims of

³ Association of American Colleges and Universities, www.aacu.org/pres-room.media-kit/what_is_liberal_education.cfm. Accessed May 16, 2005. Entire statement.

different civilizations and cultural subgroups? has liberal education been sufficiently attentive to the experience of the marginalized, the oppressed, or to differences in opportunity? I recognize all of these as issues, and it is here that most all discussions of curriculum and educational goals tend to break down. These discussions also can take different configurations in schools with a strong religious tradition, and those in which the agenda must be secular.

But in spite of these difficulties, I would suggest that we can pursue a set of goals at least in the form of what we might term, to use the language of Immanuel Kant, “regulative” ideals. That is, ideals must be formed as demands of reflection and reason. But they serve us not as abstractions to which the world must be made to conform, but as guiding principles by means of which we can analyze and interpret our experience. These are ideals we can, and I suggest even must, pursue *even if* we do not expect to realize them in concrete practice. These serve as purposive ends that lead us beyond the merely empirical situation in which we find ourselves to seek some further ideal of education of the whole person based upon reason and reflection.

The immediate question is, of course, whether even if we could agree on some ends, it would be at all possible or practical to try to realize these ends in curricula. Except for a few programs—my own, that of St. Johns College, and a few others which historically owe their origins to the great books movement, or to the small liberal arts colleges with specific identities, very often religious, that provide some agreed-upon answers to these questions,—it is unlikely that most any American university with its traditional departmental structure could entertain establishing a curriculum like my own in the present educational world. And if we then factor in to this mix the goals of the research university, the problems become even more severe.

II: The Liberal College ideals and the Research University:

This brings me to consider in this second portion of my talk the tension between the aims of liberal education as I am at least conceiving it, and those of the research university. I should note that my ability to locate in both worlds at Notre Dame has been one of great intellectual satisfaction to me. I have participated both in the intensive great books undergraduate program, based on the reading and discussion of classic primary sources from

all areas of learning, and in specialized graduate education in the Graduate Program in History and Philosophy of Science. Living in this tension, and I do consider it a tension, can be creative, rewarding, and exhausting. It requires what I might term a “bifocal vision.” By this I mean that when I enter an undergraduate seminar devoted to the reading and discussion of a text of Plato, or Descartes, or Galileo, Virginia Woolf, or Ralph Ellison, I have to put on a different set of glasses than those I may wear when I delve into a research article, or prepare for a graduate seminar in the history and philosophy of life science. In the first context, I may wish to downplay my possible expertise I may have with these texts, both to encourage the students to find their own readings, and also to put myself into the position of learning myself from the text and the discussion. The hardest books to teach in such a context are precisely those I feel I know the best, because I can fail to learn from them and instead impose on them my own expert reading.

In the second, the graduate context, it is to assume my professional *persona* as an expert on a narrow set of issues, and convey this expert learning to a limited audience of fellow experts or potential experts, who have read the relevant secondary literature, and who are participants in an elite dialogue on a limited set of problems under discussion.

I will acknowledge my love for both of these worlds, but they are not the same domains, and I see a considerable danger in letting the model of the second dominate the first. Instead I suggest that we have to do more thinking about the difference between the goals of the graduate school and that of the undergraduate college as different ends serving different purposes.

I pose this by considering two topics in close conjunction. The first concerns the nature of the students we are in fact educating in our colleges and universities. This concerns the degree to which the graduate research model is relevant to the formation of these same students, particularly in the traditional humanistic disciplines.

I can give this some precision by examining the 1998 Report of the Boyer Commission, entitled *Reinventing Undergraduate Education: A Blueprint for America's Research Universities* that has played some role in my own university in dismantling some of the structures of traditional liberal education in the name of the research ideal.

The Boyer Report's recommendation of relevance to my comments is summarized in the following comment:

The basic idea of learning as inquiry is the same as the idea of research; even though advanced research occurs at advanced levels, undergraduates beginning in the freshman year can learn through research. . . . In the humanities, undergraduates should have the opportunity to work in primary materials, perhaps linked to their professor's research projects. As undergraduates advance through a program, their learning experiences should become closer and closer to the activity of a graduate student. By the senior year, the able undergraduate should be ready for research of the same character and approximately the same complexity as the first-year graduate student.⁴

My first reflection is that this does not accurately connect with the majority of students I have taught over many years at an elite private university, and I assume that most of you also teach, whatever the nature of your institution. The majority of the students I have encountered are most likely to enter a very different world than this statement would suggest—law, business, medicine, politics, journalism, diplomacy, the arts, service work—with only a small percentage—perhaps 10% at most—actually going on for graduate work, with even a smaller proportion of these pursuing advanced work in the humanities. We all know that jobs are scarce in the world of advanced graduate work in any area at the moment, especially in the humanistic disciplines, and that it is ethically responsible to encourage only the particularly gifted and self-directed student to pursue this difficult career route.

I am therefore distressed when I sense that the recommendations for the reform of undergraduate education stated in the Boyer report become ways of devaluing those students who plan to go into law and business and public service rather than pursue what we may define as a research career. This also has corrosive effects on what we understand by liberal education. The study of literature becomes the study of literary criticism, philosophy becomes a technical inquiry into a limited set of special problems, texts of the tradition become the private domain of experts who know the commentary and secondary literature.

Here I think we have to think more deeply about the lessons that can be learned from those formulators of the liberal arts tradition, the architects of the Literary-Humanistic ideal of education in Antiquity, whose importance for the history of liberal education has been detailed by Bruce Kimball and others.⁵ What this tradition emphasized was the importance of educating the citizen-orator, the person in the world of affairs, who was to be educated by

⁴ This is available on-line at <http://notes.cc.sunysb.edu/Pres/boyer.nsf> "Make Research-Based Learning the Standard", p. 2.

cultivating not simply rhetorical skills, writing ability and cleverness through the liberal arts, but who also combined this with what Cicero calls *eloquentia*--wisdom in a particular meaning of the term--a union of philosophy with rhetoric. I am aware that I have participated indirectly in the education of many lawyers through my educational work over a 40 year period. Probably 60% of the graduates of my program end up at some point in law school. But do we educate wise and thoughtful lawyers, and if so, how? We seem to have lost sight of this classic goal of liberal education that the Roman Humanists and the tradition that built in some ways upon them up into the 20th century recognized. What was of interest was not what Aristotle meant by *episteme*--the specialized knowledge of the expert; but rather what he meant by *paideia*-- the general learning that prepared one for life in the city. To let this be obliterated by the search for specialized knowledge--to override *paideia* by *episteme*-- that I see in the Boyer Report recommendations, is a matter that requires some careful reflection. I cite Cicero directly on this point. Commenting, if perhaps unfairly, on Socrates he writes:

...[W]hereas the persons engaged in handling and pursuing and teaching the subjects that we are now investigating were designated by a single title, the whole study and practice of the liberal sciences being entitled philosophy, Socrates robbed them of this general designation, and in his discussions separated the science of wise thinking from that of elegant speaking, though in reality they are closely linked together. . . . This is the source from which has sprung the undoubtedly absurd and unprofitable and reprehensible severance between the tongue and the brain, leading to our having one set of professors to teach us to think and another to teach us to speak.⁶

My concern is not whether Cicero has rightly read Socrates, but instead to focus on his claim that we need to overcome the gap between the education of the “person of affairs” who may be given only the techniques of the liberal arts, but without wisdom and reflection, and that of the specialized “academic” who may deal with these more fundamental questions, but only as matters of theoretical knowledge and specialized inquiry.. If we reflect on the majority of the students we do in fact educate, many of the best of these will not be

⁵ See references, note 2 above.

professors, but will instead be the justices in our courts, the leaders of industry, the representatives of our political bodies, the corporate and financial leaders of society. It is also this group—and I hope that University administrators hear this loudly and clearly—who will be the financial supporters of our universities and colleges. We then must ask, even in the heart of the research university, what kind of education best serves this group?

This brings me to my most fundamental critique of the Boyer Commission ideal. It extols the education of the *undergraduate* student in advanced research, even in the humanities. To accept it is essentially to extend the goals of the graduate school to the undergraduate college. Furthermore, it is to extend the ideals of *scientific* education into the humanistic disciplines.

To preface this, I should note that I consider myself a research scholar. I highly prize specialized learning and expertise. But I also think there is a proper time and place for it, and my argument is that this is *not* the same for humanistic studies as it is for the natural sciences and related disciplines.

Here I will draw on my own autobiographical experience. I was first educated as a scientist exclusively in the research and technical model: my undergraduate degree was in zoology with a minor in chemistry. I spent several years in training for a career as a biological oceanographer. Looking back from this perspective, much of what is said in the Boyer report is true of my own education in the sciences, and the changes it advises in undergraduate *science* education would be a welcome reform. Three of the eleven members of the Boyer commission were from engineering and science, and the impact of their input seems in evidence in several places in the Report, particularly in this recommendation. For a dedicated science undergraduate, attending lectures and mastering information by examination was simply a painful preliminary step to get into the world of creative research. Truly exciting education began when a mentoring relation was developed with some faculty member who introduced a cadre of students into their on-going research project. Modern scientific research is team research, with much of education taking place in an apprenticeship situation in laboratories. Science education prepares one for the precise “cutting edge,”

⁶ Cicero, *De Oratore*, III.16.60-61, trans. H. A. Rackham (Cambridge, MA: Loeb Classical Library, 1942). For a recent exploration of some of these dimensions of Cicero, see Walter Nicgorski (ed.), *Cicero's Practical*

research that flows from applying a form of skilled learning to scientific questions. The sooner one masters the basics, the quicker one enters the exciting world of research.

But the Boyer Report does not try to discriminate between research in the sciences and the humanities. Instead it advocates that this model of education should be transferred to education in the humanities. But before we allow this to pass, it is instructive to look in more detail at the model of education that is experienced by our students in their science, engineering, and pre-medical education that is only intensified as one goes further into professionalization in this world. Since I went through this form of education myself up to the advanced graduate level, I can speak not only in the abstract, but also autobiographically .

This is a form of education, particularly fashioned by the German and Scottish universities in the nineteenth century, rendered education through classical texts and traditional humanistic inquiry alien to its goals. The focus is on the efficient transmission of accepted knowledge, and eventually through the impact of the German University, the inculcation of the ideal of research. The late historian and philosopher of science, Thomas Kuhn, spoke authentically and largely autobiographically, about his own scientific training as an undergraduate and then as a research graduate student in experimental physics at Harvard. In an important essay entitled “The Function of Dogma in Scientific Research” that preceded his better-known *The Structure of Scientific Revolutions*, Kuhn questioned the popular view of the scientist as “an uncommitted searcher after truth,...the explorer of nature—the man who rejects prejudice at the threshold of the laboratory, who collects and examines bare and objective facts....”⁷ To the contrary, he characterized the scientist as one educated in a highly dogmatic system, as rigid as seminary training. As a dogmatic education, foundational questions are not to be explored—what is knowledge? What is nature? What is the warrant for scientific reasoning? Is the calculus true? It is also studiously unconcerned with its history except as an illustration of error or occasionally as a repository for a few heroic exemplar cases, such as Galileo’s confrontation with the Church. As developed in more detail in his subsequent *Structures* of 1962, scientific education is

Philosophy (Notre Dame: University of Notre Dame Press, 2013).

⁷ T. Kuhn, “The Function of Dogma in Scientific Research,” in: A.C. Crombie, ed. *Scientific Change* (New York: Heinemann, 1963), chp. 11.

depicted as employing an educational model that is focused upon the inculcation of specific current theories, of manipulative skills, and ways of “getting the right answers” from the problems and laboratories. The intent of this education is to initiate one into an increasingly narrow inquiry into limited problems defined within the boundaries of accepted theories. Acknowledging all the commentary and criticism of Kuhn’s arguments over the last 50 years, his claims are still, to my mind, largely correct in their analysis of the nature of scientific and technical education. Precisely because the sciences, and even more immediately, their technological extensions, are non-reflective about deeper foundations, and avoid such reflections except when forced to do so at times of theoretical crisis, they have been able to develop progressively and with a precise focus on the solution of soluble problems. The natural sciences have also been able to develop particularly effective forms of social organization that discipline these inquiries in specific ways. Modern science is group science. It is funded by competitive grants that must be won from agencies in refereed competitions that filter out acceptable methods and problem definitions. Cutting edge research is published in papers with multiple authors in stringently refereed journals, rather than in monographs by individuals. The scientific world of a Charles Darwin or John Herschel, individuals who were able to make major scientific developments from their country estates, no longer exists. Even in the nineteenth century this model of science was rapidly disappearing from view. Creative science was generally already moving to the research institute, the funded laboratory, or the higher faculties of the German-style university. The science we experience today is continuous with these latter forms of scientific inquiry.

Unlike the case in the sciences, my sense is that genuine liberal education requires something quite different from this paradigm-driven model of research education. To be sure, it is appropriate at some higher level for students to be initiated into the rigors of focused, disciplinary learning, even in the humanities, if they wish to pursue this career. But this is not its primary goal. I make a strong appeal for the need to give that large body of students we actually do teach most of the time a period of time to reflect and assimilate a wide reading of texts. In other words, a period of general liberal education where students read and reflect upon a body of literature which we have increasing evidence to suggest they have never

actually encountered. First give them a foundation, and then build upon this the learning of the specialist and an introduction to the latest research.

To urge, as we see the Boyer report do, that the goal of the research university should be to extend the specialization of learning from the graduate school down into the education of undergraduate students, seems to eliminate one of the most important dimensions that liberal education can offer the research ideal. For the majority of students I feel I actually teach, it is only in these years of undergraduate work when they likely will have some time and space to explore great literature, philosophy, ethics, and the arts, and engage in a dialogue through reading the thoughts of fellow human beings over time concerning the great questions of life, keeping alive the inquiry that as Brad Gregory has argued in his recent magisterial book, is being lost within contemporary academia.⁸ If we do not in some way give them some opportunity to engage in this kind of inquiry, then likely they never *will* have the time, the opportunity, or even some awareness of where to begin such an inquiry as they move into the increasing demands of professionalism and practical life. Instead they may find themselves, like the pilgrim at the opening of Dante's *Divine Comedy*, midway in life "within a shadowed forest" from which there seems little way forward. Yet it is precisely those who may graduate from the research university, and even those who may go on into the highest levels of specialized research, who may most need to have encountered at some time a more reflective level of inquiry preliminary to the pursuit of their more specialized research interests.

In arguing this, I am not, I should emphasize, placing in some hostile opposition general learning and specialized research. What this concerns is a matter of timing and content. We need to think exactly within the research university about the different goals and even the different kinds of students we are educating in the undergraduate college and in the graduate school. The question that seems before us is whether the aims of liberal education and the research university can be harmonized. John Henry Newman, whose *Idea of a University* is often invoked in the cause of general liberal education, also gave some substantial reflection to this question in his lesser known *Rise and Progress of Universities* of differences of the

⁸ Brad S. Gregory, *The Unintended Reformation: How a Religious Revolution Secularized Society* (Cambridge MA: Harvard University Press, 2012), esp. chp 6.

research institution and the liberal Oxford-style college devoted to liberal arts and humanistic education:

The University is for theology, law, and medicine, for natural history, for physical science, and for the sciences generally and their promulgation; the College is for the formation of character, intellectual and moral, for the cultivation of the mind, for the improvement of the individual, for the study of literature, for the classics, and those rudimental sciences which strengthen and sharpen the intellect.⁹

At the same time, he did not see these in opposition, but as different ends of two forms of education that needed ideally to be brought into greater contact.

In the United States, as a result of our unusual educational history, we now have the opportunity in institutions like my own to combine these two models. This can be a dynamic and creative synthesis. I have, and I think my students have, deeply benefitted by being in a context where both ends are pursued. The inquiries of one ideally can benefit the other in what may be the best model of education for the challenges of our contemporary world.

In a solid education in the liberal arts, I would argue, lies the domain for cultivation of the moral person, for inquiry into the knowledge of a long cultural tradition, for education for citizenship in the polis. It also includes the need for general literacy in the sciences and technology demanded of a citizen in an advanced technological society. This foundation can ideally then interact creatively with the research ideal, but is not to be subsumed under it. It is to give new attention to the education of those citizens who will eventually make the practical decisions in our legislatures, courts, and businesses that may indeed involve the direct application of the knowledge gained from research. We need to cease regrets over the large number of students now seeking business degrees, for example, and instead ask again about what is the best education for those engaged in such practical life. How do we best prepare them to make wise and thoughtful decisions about the environment, about causes of poverty, about war and peace, about just economic relations, about nuclear energy, about pressing matters of applied biotechnology and the manipulation of life? And here I suggest that acquiring research expertise is not itself the solution. It can only be a means to

accomplish certain goals with great efficiency and precision. What those goals are, and by what means they are to be ethically achieved with interests of the dignity of humanity in view, is not something that can be answered within the research paradigm itself.

⁹J. H. Newman, *Rise and Progress of Universities* (1854-56) as in M.k. Tillman (ed.), *Rise and Progress of Universities*, and *Benedictine Essays* (Notre Dame: University of Notre Dame Press, 2001), p. ix. I am deeply indebted to Katherine Tillman for this quotation and for comments on the draft of this paper.