PROGRAMMA

A Newsletter for Graduates of the Program of Liberal Studies
The University of Notre Dame

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THE VIEW FROM 318

Inevitably the view from this office changes with each new Chair. My desk now faces out the window to allow me a constant view of the change of seasons. New pictures have been hung, and there are other small changes. The unexpected loss to us all last spring of Stephen Rogers, and the absence of two of the regular faculty, Walter Nicgorski and David Schindler, have all produced inevitable differences, both for the faculty and the students. Professor Stephen Fallon, who has recently received his doctorate in English Literature from the University of Virginia, has joined us as a new faculty member this year in the literature tutorials, and as visitors we are pleased to have with us Professor Kent Emery, director of the Center for Contemplative Studies at the University of Dallas, teaching theology for us, and Professor Rodney Kilcup, formerly of the University of Oregon Honors College, who is working in the Intellectual History and Foundations of Thought tutorials. These new appointments have all brought to the Program new insights and learning.

We are also in the midst of a more substantial revision of our curriculum, which has resulted in definite changes in the Sophomore and Junior year curricula, and this summer the faculty will hold a workshop to reexamine our roots, our traditions, the origins of the Program, and the special differences between a true liberal arts curriculum and an interdisciplinary humanities program. This seems especially needed at a time when the University itself is changing increasingly to a research institution, one seeking to emphasize both excellence in undergraduate and graduate teaching, and also first-line research in all areas of learning. The Program is concerned to meet these new challenges while maintaining its intellectual integrity, its unique student-teacher community, and its sense of common endeavor. These are the unique features without which the Program would cease to be what it is.

As part of my learning process in this position, I have had the opportunity to return in a very immediate way to our founding in 1950. Documents and correspondence from these early days with Father Cavanaugh are still with us, giving the original arguments for a *General Program of Liberal Education*, as it was originally called. Writings by Robert Hutchins, Otto Bird, Mortimer Adler, and the catalogs from St. John's College and the University of Chicago College program of the 1950's show our roots in the innovative movement that began in the General Honors program at

Columbia in the 1920's, spread to the University of Chicago with Robert Hutchins' precocious presidency in the 1930's, and came to Notre Dame in 1950.

Much of this history and the basic rationale of the Great Books educational reform, even the names of the founders of the movement, are unknown to our students. Yet the timelessness of the issues which it was created to address--the recovery of a great discussion within western thought between Greeks and barbarians; between classical learning and Christianity; between classical thought and the new directions begun in the sixteenth and seventeenth century--this is not lost on our students. They come with new horizons and new expectations. Nearly all have been born since the opening of the Second Vatican Council. They have reached adulthood in an era of relative peace, but also with a certain fear of the future, brought to their attention by the recent tragic failure of the space program. Technologies only in the planning stage when the Program was founded have become routine in their existence. All of this brings to the seminar and the classroom new experiences, new questions and new insights into the great works. It also brings to us as faculty the eternal freshness of youth, with its idealism, hopes and often good sense. It keeps alive a dialectic in which our demand for discipline, order, clear thinking, and good argument is met by exuberance, challenge, new questions, and eagerness. It is exciting to lead the Program in this period.

With this issue Professor Michael Crowe takes over the editorship of **Programma**. He has also instituted a news column which brings you up-to-date on the faculty. A special note of congratulations is due from the Chair to Professor Katherine Tillman, who along with Professor Edward Cronin, is now among the small group honored with the College of Arts and Letters highest award for distinguished teaching, the Sheedy award. I am sure all alumni and alumnae from her classes join me in congratulating her on this. Those alumni and alumnae planning to return for the alumni weekend will have the opportunity to have her lead a seminar on Saturday, June 7. Those interested in attending should contact either the Program or the coordinator of the Program reunion, Mr. Frank Browne, c/o Cummings and Lockwood, Ten Stamford Forum, Stamford, CT 06904 (203-327-1700). A word of congratulation is also due Professor David Schindler, who was awarded tenure by the University. After his year in Austria, he will return to permanent residency in the Program.

I also extend my gratitude from the Program for the many generous contributions, and the numerous notes and letters of condolence we received in the aftermath of Stephen Rogers' death. It will never be the same Program without him, and we can all feel a special sadness for all those students to come who will never know his unique presence among us. To date nearly five-thousand dollars have been contributed to the special Rogers Memorial Fund. We are currently proceeding quite well with the project to publish the main body of his text on the liberal arts.

With best wishes to you all.

Phillip Sloan
Chairman

FROM THE EDITOR

This issue of **Programma** contains three contributions, all of which are highly recommended. The first consists of the charge delivered to the students and faculty of PLS at the opening of the academic year by Professor Phillip Sloan, the new chairman of our department. The second is the homily that faculty member Father Nicholas Ayo, C. S. C. gave us at the annual November Mass of Remembrance for deceased graduates and faculty of PLS. The third item came from Pat Mannion, a 1978 graduate of PLS.

One of my hopes upon becoming editor of **Programma** has been to introduce a section giving information on present and former faculty of PLS. My efforts to secure information in that regard have not been entirely successful, but the following represents a start.

Concerning present faculty of PLS, it is noteworthy that two are abroad this year. **Walter Nicgorski** is spending the year on a National Endowment for the Humanities Grant carrying out research on Cicero as a Visiting Scholar at St. Edmund's House of the University of Cambridge. Those wishing to correspond with him may write him at 33 Grantchester Road, Newnham, Cambridge CB3 9ED, Great Britain. **David Schindler** is spending the year directing Notre Dame's Innsbruck Program, his address being Univ. of Notre Dame Innsbruck Program, Innrain 33/1, A 6020, Innsbruck, Austria. Father **Nicholas Ayo** spent the fall on leave with support from the Wilbur Foundation, his research being devoted to preparing a book on the Creed. Filling in for these professors are two visiting faculty members, **Kent Emery** from the University of Dallas and **Rodney Kilcup** from the University of Oregon. We are all looking forward to the conference on "Christianity and Classical Culture" to be held in mid-March to celebrate the inauguration of **Frederick Crosson** as the department's Cavanaugh Chair in the Humanities. **Katherine Tillman**, who was honored as this year's recipient of the Sheedy Award for excellence in teaching, reported that after speaking on Cardinal Newman's epistemology and educational theory in January at St. Thomas of Villanova University in Miami, Florida, she will speak on "The Church and the Liberal Arts" at St. Ann's Univerisity Church in Boston on February 27 and on Newman's epistemology at the April 4-6 American Catholic Philosophical Association meeting in Baltimore.

André Goddu has also been traveling, having presented papers on Ockham at the International History of Science Congress in Berkeley this summer and at St. Bonaventure University this fall. We are pleased to report that **Edward Cronin**, after experiencing some medical problems this fall, is back teaching this spring. Congratulations to **Janet Smith** and **Clark Power**, both of whom will have a semester's leave next year. **Paul Roche** is beginning this spring a series of half-hour radio broadcasts on WSND FM. Entitled "WORDS WORDS WORDS," the talks will "explore the nature of prose and poetry, but mostly poetry." As announced earlier, **Mark Jordan** returned to thje PLS faculty in January of 1985. The newest regular member of the PLS faculty is **Steve Fallon** whose specialty is literature, especially John Milton. After a B. A. at Princeton and a M. A. from McGill, he received his Ph. D. in 1985 from the University of Virginia. Steve is the proud father of Samuel Meade Fallon, born in October, shortly after Steve and his wife Nancy arrived at Notre Dame. **Phillip Sloan** presented a paper on the concept of species in biology at a conference in Paris this summer and then proceeded to tour France and Italy with his wife and their daughter, who is now a sophomore in PLS. **Susan Youens** spent much of the summer in Europe, especially Paris and Vienna, carrying out research on a NEH Summer Fellowship. **Mary Etta Rees**, our departmental secretary, also traveled to Europe this

summer where she ran into Tom Beedem, a 1985 graduate of PLS. **Michael Crowe** is looking forward to receiving from Cambridge University Press in March, 1986 the first copies of his *The Extraterrestrial Life Debate 1750-1900: The Idea of a Plurality of Worlds from Kant to Lowell.* His earlier *History of Vector Analysis* just appeared in December, 1985 in a paperback edition with a new preface from Dover Publications, Inc..

Concerning former faculty, Otto Bird will spend the spring as Distinguished University Professor at the University of Dallas. Father **Gerard Carroll** is back at Notre Dame for the spring semester as a visiting faculty member in the theology department. Congratulations to **James Weiss** upon being awarded tenure in the theology department at Boston College. We were saddened to learn of the death on July 20, 1985 of **Robert Turley**, who after teaching in PLS from 1965 to 1970 joined the department of philosophy at Fordham University, where in 1974 he became an assistant dean at Fordham's Lincoln Center campus. Steve Massey, PLS class of 1971, has written that he would like to write something in memory of Professor Turley and would appreciate letters from other former students. Send them to Steve at 225 West 23rd St., Apt. 7E, New York, NY 10011.

We continue to welcome letters from former students and faculty of PLS and are very appreciative of the contributions from alumni/ae, which gifts make the continued publication of **Programma** and other student and faculty activities possible.

Michael Crowe
Editor

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is published twice each academic year by the
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Faculty Editor
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Michael J. Crowe
The University of Notre Dame

Opening Charge
(August 29, 1985)

ON AXIOMS
THE CHALLENGE OF LIBERAL LEARNING

Phillip R. Sloan, Chairman, Program of Liberal Studies

My task tonight, assembled students and faculty, is to give you a charge. There are several ways I can deliver this to you, and several ways in which you can receive it. *The Oxford English Dictionary* gives three pages of entries under this heading. In what sense is my charge to be taken?

One constellation of usages we can classify as military--meanings we can summarize as dealing with explosions, detonations. I would surely like to give you a moderate amount of this to begin the year, at least metaphorically speaking, but I do not think that is the primary task I have. Other usages, still military, seem to be encompassed by the notion of an "impetuous attack". I hope I can avoid this as your new Chairman. It can also mean to load heavily upon others--to burden. In some respects this is the kind of charge I have been given by the University, but I would not wish to convey this same sense of burden to you at this beginning point of the year. Deriving from this usage are at least some things we need. For charge in this sense can mean the notion of laying upon others an authoritative command, an exhorting, enjoining. There must be some of this--we all have work to do, assignments to meet, papers to write or to grade--burdens to be assumed. Yet my idea of this charge still seems incompletely captured by this.

But as we examine other possible meanings of 'charge,' some begin to seem more appropriate, more suited to the real sense of beginning we feel tonight. One English meaning, related by a complex set of transformations from the Latin verbs *communicare*--to share in common-- and *cabillicare*--to ride--suggests sharing a load in common, as if on a caravan journey. This seems a fertile sense to explore. There are tasks we have set out to accomplish together, as on a journey, but as we do this we can converse, speak both lightly and seriously, share meals and fellowship together, and if need be, assist one another over the rough spots in the road. This notion of charge can also help us see a common task as we move over these difficult terrains. Some of us will undoubtably weary of the journey; others will seem eager at every stage. Accidents befall the caravan, delaying our plans. On other occasions our horses simply need rest and refreshment, whatever might have been the day's intended goals. Then there can be those quiet times around the campfires at night when we may want to sing, joke, tell stories, or simply stare at the fire in quiet reflection. So this is the kind of charge I want to exhort us to accept--the notion of undertaking a common journey through great ideas and great texts, and through the experience of human existence they give us.

But what can this mean more specifically in terms of the commencement in our studies in the Program and how does this relate to our concern for an education in the Liberal Arts? This requires more specific refinement.

I have titled my address "On Axioms". And as would seem appropriate for our Program, I will make this a gloss on three texts that we will in some way encounter in the Program in our course of studies. I have subtitled this "The Challenge of Liberal Learning," because my subject is most generally that; but I want to look more closely at the notion of axioms, and how these help us confront a deeper question raised by our curriculum.

My texts are, first, Plato's dialogue *Phaedrus*, which will be read by the seniors. Euclid's *Elements* will be one

of our early encounters in the Sophomore Natural Science unit. And Pascal's *Esprit Géométrique* is a text not actually read in the Program, but it underlies much of the argument of the *Pensées* which the seniors will read in seminar. This short treatise is readily found in the Great Books of the Western World *Pascal* volume for those who might want to pursue it.

Let me situate this discussion with reference to a common experience we typically have in encountering the Great Books. Our first emotions, as we approach them, if we know anything about them at all, are with a sense of awe and perhaps with a kind of romantic enthusiasm. For most of you as students, the titles have only been names up to now, possibly books on the shelves of your parents' library. References to them have been made in text books and lectures. We may even as freshmen or high school students have read selections or excerpts from them, or heard lectures on specific issues in these. But none of these modes are quite the way we will meet them in the Program. Our concern generally is with the whole texts, rather than excerpts, and our curriculum is based principally on reading and discussing only these. How wonderful to spend our college years reading Plato, Aquinas, Descartes, Shakespeare, and Tolstoy rather than a textbook in accounting, or chemistry or engineering mathematics, or even in philosophy or literature. For many of us, we may for the first time feel that learning will finally be fun.

But then as we begin seminar, we find as we open our books that they may be disappointing. They may be hard to understand; or they make reference to issues or historical situations we are unfamiliar with; or they may at times be simply boring. Who can find interesting the catalogues of ships and supplies, which fill pages of Herodotus and Thucydides; or, unless you have seen and touched the leviathan, what can be the value of reading the long discussions of whale anatomy in *Moby Dick* ? We finish the first book of Plato's *Republic* confused and even bewildered. Adam Smith may at times seem less interesting than the accounting textbook we have abandoned and surely less practical. So there is a first blush of weariness, the first signs on our journey that riding a horse all day is not all that easy or pleasant, an awareness that there are steep and rocky spots on the journey that demand patience and effort to cross. Some may then want to turn back, uncertain of the real value of the goal at the end, and remembering the comforts we left, in this case the security of vocationally-oriented education or the freedom of a non-required curriculum.

For those who keep on, the work gets easier. The fatigue of the first day wears off, and we begin to find a rhythm in the task. We find that we can read these works, and even on occasion discuss them with some satisfaction. The Republic becomes more interesting as we begin to follow the dialectical search after dikaiosynē or justice. We find ourselves learning something important about life and about ourselves in the struggle of Hector and Achilles. Thucydides begins to captivate us with the science of politics. But then a second set of problems sets in. These are the ones I particularly wish to address.

As we explore the books more deeply and begin to understand them, we find that they start to challenge us. They may seem to exhort us to lives of virtue and responsibility that we feel unwilling or unready to accept. Or they may threaten a belief system we have accepted uncritically to this point. Marx may tell us that our system of economics is destructive of human nature; Lucretius that the universe really is intelligible in terms of chance and scientific necessity; Hinduism seems able to assimilate all values and thoughts of the Christian tradition into its vast cosmopolitanism. Newton and Descartes and Darwin show us the power of what may seem to be purely secular scientific thought. Machiavelli expounds for us a theory of politics that highlights the tension between our ideals and

the ugly realities involved in the manipulation of political power. Our experience might then be one of bewilderment. All these books seem, at some point, able to convince us. Smith seems right, but so does Marx. Mill convinces us, and so does Aquinas; Descartes, Hume, and Kant seem to make good sense, but contradict one another. Now our enthusiasm for the books, even among those who have journeyed valiantly this far, might begin to wane--the books unsettle us, and even threaten us. We find ourselves asking new questions; assumptions on which we have lived to this point seem somewhat shaken. Relativism and scepticism raise their ugly but fascinating heads. But what of the truth, we ask? Authority can be summoned--that of the teacher, tradition, Church--but we somehow find this an unsatisfying way out, as if it were an attempt to stop our growth at some intermediate stage. We feel a tension between the demands of reason and those of emotion, intuition and background. This is where I would locate the real challenge of our curriculum. Our uncertainties cease to be simply vocational, but become spiritual and philosophical. What is the solution to this problem?

This brings us to our first text, Plato's *Phaedrus*. As this text is dramatically situated, the day is hot and muggy, much like our own at this time of year; the cicadas are sounding, again a sound familiar to South Bend dwellers in August; and the question is again truth. Phaedrus is excitedly telling Socrates of the marvellous speech by the Sophist Lysias. It is a speech that Lysias has delivered on the topic of love and friendship. With eagerness Phaedrus begins his reading of the text of this supposedly marvellous discourse in which the case is made that friendship, based on the calculation of mutual advantage, is preferable to the madness of love. Lysias seems to have proven his point convincingly, at least to Phaedrus. Phaedrus is like the young student who has discovered a new and compelling truth in the writings of one of our seminar authors--enthusiastically sharing with all willing to listen to this air-tight argument.

But when the reading is over, praise is faint from Socrates. His response is interesting for two reasons. First, rather than rejecting the argument as false, as we might have expected, he proceeds to rewrite and recast the speech. Premises are made clearer; repetitions are removed; the whole argument is tightened up until Phaedrus is more satisfied than ever with it. Secondly, it is only when our rewrite is finished that the critique begins, as if Socrates had to be certain that Lysias was given every advantage due him. Somehow, Socrates says, our intuitions tell us that there is an error here. Eros we think of as a god, not simply as irrational madness. Blasphemy seems to have been committed; there is a bitter taste in our mouths when the speech is done. And at this point the dialectic begins--the difference of true and false discourse, the distinctions of philosophy and sophistry--begin to emerge from the sometimes complicated discussion we can only grasp if we attend to the arguments with care. Subtly the dialogue shifts from being a Socratic discourse about love, which our introductions like to tell us is its subject, to a complicated discussion on rhetoric, truth, and knowledge.

We see here a glimmering of what the point of all this rough climbing and weary moments in our journey might be. The *Phaedrus* does not leave us with a nice, neat answer to the question "what is love?" It has more clearly been a training session in at least one of the classic liberal arts--the art of rhetoric. We also see that rhetoric is not to be equated, as Bacon viewed it, with falsehood and deception. Truth and falsity arise not directly with reference to good rhetoric, but with respect to the truth or falsity of the premises from which it begins. The problem with Lysias' argument is not its logic, at least not when Socrates has tidied it up, but with the initial assumptions laid down at the beginning. On what stones is the argument building? are these true and certain foundations, or are they only premises casually admitted with

only casual reflection? Here lies the difference between a sophistic discourse, which persuades from premises based on *doxa* or opinion, and Socratic philosophy, which seeks to argue from true premises grasped with *noesis*. The pedagogical message in all this is that we can learn from the liberal arts how to identify premises, and utilize these effectively in constructing our arguments. We see now the power of the combination of deductive reasoning and rhetorical persuasion. We see now why our books have so easily convinced us. But it does not seem to resolve for us the issue of the truth of the premises themselves.

To explicate this issue more deeply brings us to our second text, Euclid's *Elements*. The Greek title is *Stoichion*, a term used by the Greeks to denote the fundametal elements out of which things are made. A related term is used to denote the letters of the alphabet--those ingredients from which intelligible writing is constructed. Some of us, when seeing that the *Elements* will be dealt with in the Program, wonder why a text so mathematically simple is worth our time. After the advanced analysis, calculus, and differential equations, which many of you may have completed, what could we learn from this ancient mathematical text? But then, is it necessarily mathematics we are learning from Euclid? Perhaps to think about the liberal arts in terms of specific subject matters and bodies of information is the wrong kind of question to ask. Education in mathematics has not necessarily been the primary fruit a long line of our predecessors--Apollonius, Ptolemy, Galileo, Descartes, Hobbes, Pascal, Spinoza, Newton, Kant--have acquired from Euclid.

What we best learn from Euclid, I suggest, is that contained in the first pages of the Elements, something so simple we tend to neglect its importance. There we find set out a series of Definitions or *Horoi* in the Greek; then 5 Postulates or *Aitemata*; and 8, or in some editions, 5 Common Notions, *koinai ennoiai*. Later the postulates and common notions tended to be combined under the name of *axioms*, from the Greek and Latin *axioma*--that which is worthy or fit, that which commends itself as self-evident. This is the Greek term Aristotle uses in the *Posterior Analytics* to designate the first principles of any science, the points from which *epistēmē* or demonstrative knowledge, is generated. In time the numbering of these changes slightly, and things get rearranged a bit. But basically for 2000 years, the structure of the text remained constant. What is so interesting about those first few pages? I think most importantly it is the very presence of these introductory items. Unlike the case of Lysias' discourse about love and friendship, we see in Euclid's text that our beginning points are set out loud and clear. There is no need for a Socrates to clarify for us the structure of the arguments. Furthermore, these premises are not presented as the conclusions of prior arguments to which we have argued with persuasion. They stand simply as the places from which subsequent discussion and proof sets forth. We clearly perceive that if we do not accept these, then the inquiry cannot commence. We also can determine, with a little reflection, that we cannot prove the premises themselves. There is no Euclidean proof of the fifth postulate precisely because Euclidean geometry depends on our accepting it at the outset.

Euclid's setting out of these premises in such a clear and overt way provided for all who followed a model upon which arguments could thereafter be constructed. The Hellenistic commentator on Euclid Proclus puts the value of Euclid this way:

> It is essential that such a treatise should be rid of everything superfluous...; it should select everything that embraces the subject and bring it to a point...; it must have great regard at once to clearness and conciseness ...; it must aim at the embracing of theorems in general terms .... In all these ways Euclid's system of elements will be found to be superior to the rest; for its utility avails

> towards the investigation of the primordial figures, its clearness and organic perfection are secured by the progression from the more simple to the more complex and by the foundation of the investigation upon common notions, while generality of demonstration is secured by the progression through the theorems which are primary and of the nature of principles to the things sought. (Heath, I, p. 115)

Thereafter, if one really wished to press an argument, or present a compelling case for one, the court of appeal could be Euclid's model of demonstration. Descartes, when asked by Marin Mersenne, one of the main objectors to his philosophy, to make the arguments of the *Meditations* clearer, proceeded to recast them in this form. Galileo, in the *Two New Sciences*, is aware that if his new physics is to be convincing, he must interrupt the informal dialectical presentation of arguments in the Ciceronian dialogue form, and present his claims in the rigorous form of a Euclidean demonstration. Newton, who could have used other means and other mathematics to present the arguments of the great *Principia*, realized that if his new physics was to succeed with his audience in overthrowing the physics of Descartes, the arguments required the rigor that only Euclidean demonstration could provide.

But the power of this method of axiomatization presents us with another problem. From reading Euclid and by practice of the classic liberal art of geometry, we might learn to read our other books more carefully; to look more closely at the primitive definitions, axioms, and common notions our authors might be asking us to accept, sometimes implicitly and with less clarity than Euclid gives us. We also appreciate the fact that from these beginning points we will probably see certain consequences follow if only because the given author's logic is reasonably good. We understand now why we have been convinced by so many conflicting points of view. It is because we have allowed ourselves to grant axioms and premises without much reflection, and then found ourselves simply trapped by deductive logic and rhetorical persuasion. Once we discover this, the journey through the books has become easier for us. We feel new powers of reasoning and a certain confidence to keep on with the labors. We might even begin to feel a bit clever at this.

But now a new problem confronts us. From whence comes the authority of the axioms? I f these are not simply to be imposed upon us by authority--something we said we did not want to allow without reflection--on what grounds are these beginning points to be granted? In fact, the more we come to understand modern mathematics, we may even conclude that some of these "Postulates," such as the famous fifth postulate on parallel lines, are suspect and even false. Surely in Einstein's universe this is so. Are these starting points to be accepted as only purely arbitrary beginnings--mere convenient hypotheses granted for the sake of argument? This is a more difficult point. The English meaning of the term"postulate" used in our common translations for Euclid's Greek term *Horoi* suggests that these are indeed only something granted for the sake of an argument, a weaker connotation than the "self-evidence" implied in the usage of "axiom". Commentators after Euclid even termed the definitions as *hupotheses*, meaning by this something laid down and merely granted by the hearer. Many are the authors that tell us, in fact, that mathematics is purely "analytic," meaning that it is an enclosed system resting purely on arbitrary definitions and logical deductions from these. This is behind the philosopher's common distinction between analytic and synthetic truths. The information ultimately gained from an analytic truth is presumed similar in kind to that we gain from a dictionary definition. We are told by the dictionary that a "bachelor" is an "unmarried male". Useful, perhaps, for our linguistic utterance, but it has increased our genuine knowledge very little. If we know what a 'bachelor' is, the definition follows necessarily. Or to follow Euclid, it suggests that the fourty-seventh proposition of Book I, the Pythagorean theorem, is simply analytically contained in the axioms and definitions. If this is what we learn from Euclid, then the issue of relativism we feared before, seems only

pushed back one step. The geometrical method has helpd us see that all the great arguments and positions in our texts rest on axiomatic assumptions. We can learn to dissect out what these are, and how the arguments follow from them. But if these assumptions are themselves neither justified within the system, nor demonstrable as more than purely arbitrary choices or stipulative definitions made by the author, relative truths and nothing more, we have escaped one dilemma only to find ourselves in a deeper one.

Surely Euclid would protest such a reading. The fundamental postulates must be better than this. He calls some of them, such as the premiss "If equals are added to equals, the wholes are equals" as "common notions," *koinoi ennoiai*, a term used prominently by the Stoic philosophers of Greece to indicate those truths that are intuitive to all humankind, definitive of our experience, and able in a unique way to fit up with our world. But self-evidence is at times a slippery issue. What warrants it? What of the person who denies what to others seems so clear? This is the kind of problem most difficult to resolve in seminar. Does one simply stamp his or her foot in exasperation when challenged at this level? Do we give up and say all is relative? Do we turn to the teacher to resolve the issue for us?

We come up here against the great problem of modern philosophy, the one wrestled with in authors as diverse as Harvey, Descartes, Hume, Bacon, Kant, Pierce, James, Freud, Mill, Darwin, Heidegger, and Wittgenstein. Descartes made the great heroic effort at the beginning of the modern era to establish premises so true and certain that nothing, even the most radical scepticism, could possibly shake them. The *cogito ergo sum* was to self-destruct all attempts to deny and question it. It was to stand as the Archimedean point, the absolutely unquestionable axiom, upon which could be constructed a true and complete account of mind, matter, God,and the physical universe. Newton likewise felt that *his* starting points were so firm and certain that he explicitly termed his famous three laws of motion "Axioms," implying their self-evident character. Unfortunately neither of these heroic deductive attempts to deduce a true account of reality from unshakeable beginning points succeeded. The inductive approach, represented by a long tradition from Aristotle through Bacon and the rhetoric, if not the practice, of much of modern science, has sought to derive axioms from nature and experience, ensuring by this means that the premises can be obtained that are certain and reliable because they arise out of what is unquestionably given in experience.

Of course, we can also see in much of modern thought a decline of interest in the whole classical quest for truth, a willingness to settle with a Nietzschean abandonment of all questions of meaning. Physicists like to speak today of the "game" of science rather than the truth of natural philosophy, treating their subject as purely mathematical formalism; literary critics speak of the "deconstruction" of texts that float above all concerns with meaning and truth; philosophy is reduced to the analysis of language; the general concern with truth in conceptual thought, reflection, and art are reduced to the vagaries of history and sociology; but this marks only an exasperation with the problem of foundations, an inability to determine where truth can lie. Sometimes it seems nothing more than a lazy disinterest in the question of truth altogether. But surely this is not where we hope our journey will lead us.

This brings us to our third and final text, Pascal's little treatise on geometry. For those yet to encounter Pascal, he was a Frenchman living in the seventeenth century, a generation after Descartes, and is noted for his remarkable contributions to mathematics, probability theory, experimental science, and finally to philosophy and the philosophy of religion. These inquiries formed different stages in his development, which are nonetheless unified by certain common

themes and methods of approach. But without spending much time on his biography, let us move directly to his short treatise, composed around 1657 for use as an introductory text in geometry for the school at Port Royal de Paris.

The French title of this brief work, *l'Esprit Géométrique*, is elusive to translate. It immediately recalls for us the classification of the three kinds of mind with which Pascal opened his *Pensées* a few years later; but it also complicates that latter text for us. We can translate it "On the Geometrical Mind," "The Spirit of Geometry," "The Geometrical Spirit," or as the *Great Books of the Western Worrld* has entitled it, less literally, but more accurately in terms of its contents, "On Geometrical Demonstration."

The central question that Pascal wishes to explore in this text is not simply geometry, but to expound what we can learn from Euclid and his geometry about discerning and proving truths, and distinguishing these from errors.

The ideal imposed upon us by Euclid's geometry in our search for truth, Pascal argues, would give us complete and certain knowledge if only certain conditions could be met. This ideal is also, he tells us, impossible to attain. For what it implies is that we first be able to give full and complete and necesarily true definitions of all primitive terms and axioms; and secondly that we prove all the propositions that follow from them. The problem Pascal sees, as we have ourselves seen, is that we can always be asked the skeptic's question--how do you know your premises are true? From whence comes their authority? We seem to have no solution here. As Pascal puts this in his words:

> ...we come of necessity to primitive words which can no longer be defined and to principles so clear that it is no longer possible to find others more clear for their demonstration. (p. 431]

To argue for our premises, we may have no recourse but ostensive definition or cessation of discourse. For us, as for Pascal, the problem is not the arbitrariness and obscurity of the premises, but rather what might seem to be their extreme evidence.

Pascal's reliance on the self-evidence of Euclid's postulates is not quite so air-tight as he and most mathematicians before the nineteenth century thought. But this does not necessarily work against his argument. In fact to be able to show the ultimate uncertainty of even these naturally self-evident axioms is the key to the deeper issue Pascal begins to raise in this text and pursues into the *Pensées*.

In developing his account of the geometrical method, Pascal discusses the problem we have already seen with Lysias and Phaedrus. Most often the compelling force of an argument comes not from the proof of first principles, but from the art of rhetorical persuasion. The method of geometry, even as we understand it, is austere and in some ways heartless. We often prefer, for this reason, reasoning in more informal terms. I recall the experience of one teacher in the College Core course some years ago which is not unlike our own experiences in seminar at times. Two books were read; one, Loren Eiseley's *The Firmament of Time*, was an impressionistic, loosely argued, somewhat overwritten set of reflections on science that made a loose defense of humane perspectives and non-reductive conclusions. The other, Jacques Monod's *Chance and Necessity*, was a hard-hitting, much tighter text advocating a strictly scientific world view. When asked which book they liked best, all unanimously voted for Eiseley. But when asked which had the better arguments, they felt compelled to vote for Monod. I use this example only to make clear an important lesson. We can, like Phaedrus, be persuaded by bad arguments dressed up in pleasing prose, particularly if we want beforehand to accept the conclusions. But this can easily be done by utilizing one liberal art--rhetoric-- to the detriment of the others. When

we realize this, we may feel cheated and deceived. What then might be the conditions on which we can avoid this split of reason and sentiment; of our intuition of truth and the demands of argument?

A solution to this is at least suggested by an issue Pascal simply hints at in this text, but then explores in depth in the *Pensées*.

The truths of geometry are natural truths, and are of the kind that must be known in order to be loved. Those who have studied and practiced the art of geometry in its manifestations in mathematics, science, and logic, perhaps see his point here. From long labors we may at some place grasp a sense of beauty, elegance, and mental satisfaction that can indeed be loved in the Platonic sense of *philia*. The axioms, which seem unjustifiable in themselves, nevertheless seem certain when we see what follows from them. Who is not be struck with wonder when we see, after long geometrical labors, that Kepler's area law does indeed follow from the axioms in proposition eleven of Newton's Principia? Here is the love of the physicist for the laws governing matter; of the biologist for the laws of organic form and function; of the astronomer for the principles behind the stellar motions. But as Pascal later explores this in *pensée* 434 (I still prefer the old Brunscvicq numbering), there is little means, beyond this sense of satisfaction, to answer the skeptic's challenge to the certainty of our starting points. Can we be sure of our reasoning? Do our senses give us truth? What of the variety of customs, opinions, philosophies we seem to see? Are not even the most certain principles of science overthrown? Our solution might be seen in a hint Pascal gives, which represented for him a compelling solution. There he speaks of a second order of truths, a second order of axioms. But here there is a kind of paradox encountered. For these truths, as Pascal puts it, must first be loved in order to be known. Here is not the suggestion that we can reason back to these from the truth of their effects, as we might do at least in physics. Nor is it claimed that these are self-evident. There is only the claim that some kind of act of the will is involved in knowing these beginning points. Could such truths form starting points that might be as firm and certain as any we can have, but which yet could not be "shown" to others in the way we might point to a line if one asks at some point for an ostensive definition of this primitive Euclidean term.

That truth is better than falsehood; that charity is to be preferred to self-seeking; that value is better than fact and must regulate fact; that life is worth living in spite of its trials; that human life has value above and beyond any utilitarian justification we might be able to supply-- these might be truths we consider non-negotiable, more certain than those of geometry, and ones that we do not accept simply because they easily persuade us. We may feel at times quixotic for affirming them. Adherence to them might even seem humanly impossible or rationally indefensible because they are, in Pascal's terms, truths that enter us not from the intellect, but from the heart.

We must be clear about what Pascal means when he speaks of "heart" in this way. He does not mean something vaguely intuitive, purely emotive, conducive of easy answers and sloppy thinking. For one long tradition Pascal was surely aware of, the "heart" had been the seat of life; the locus of the common sensorium; even, for Aristotle, it is the place where thinking and consciouness actually reside. Harvey had only shortly before elevated the heart to a new physiological primacy. All of this tradition seems involved in Pascal's technical use of ther term. But Pascal also transforms the meaning of *coeur* toward that Augustine speaks of in those immortal first lines of the *Confessions*. The heart is a faculty, he suggests, where God places in us truths that are primary over those of nature; these are, to quote him, truths that God has willed "should enter the mind from the heart and not into the heart from the mind" (440). Pascal

is not so naive nor so unaware of the problems of belief to assume that such truths can simply be imparted by the ordinary teacher or taught as propositions to be memorized. They function as axioms, rather than deductive conclusions, but axioms that are so certain they transcend the debate of philosophy. Such truths are not the work of man, but of the divine. The best the teacher can seek to be in this context is to serve as the truly Socratic teacher--a midwife who helps in the birthing process of one's natural gifts, but who perhaps can be no more than an obstacle remover to the growth of the mind and soul toward things divine. The method of geometry cannot help us here. We can only see with it where the issues of full truth, certainty, and divine dimension lie.

In this respect our journey is very much a joint one. We cannot see each other as more than fellow learners and travellers on this divinely ordained aspect of our quest. But as we refine the liberal arts with each other in discussions in the halls, in classrooms, and in many other ways this year, the possibility of Pascal's truths of the heart should impose upon us a concern not with cleverness, but with truth; with wisdom rather than sophistry; with what is truly worthwhile rather than with mere faddishness. Perhaps to commence our task, no better beginning can be made than to return once again to our opening text, the *Phaedrus*. At the end of this is a little prayer to the Muses.. I want to alter this just slightly for our purposes tonight.

> Socrates:... Do you now go and tell Lysias that we two went down to the stream where is the holy place of the nymphs, and there listened to words which charged us to deliver a message, first to Lysias and all other composers of discourses, secondly to Homer and all others who have written poetry whether to be read or sung, and thirdly to Solon and all such as are authors of political compositions under the name of laws--to wit, that if any of them has done his work with a knowledge of the truth, can defend his statements when challenged, and can demonstrate the inferiority of his writings out of his own mouth, he ought not to be designated by a name drawn from those writings, [i.e. a sophist], but by one that indicates his serious pursuit.
>
> Phaedrus: Then what names would you assign him?
>
> Socrates: To call him wise, Phaedrus, would, I think be going too far; the epithet is proper only to a god. A name that would fit him better, and have more seemliness, would be 'lover of wisdom,' or something similar.
>
> . . .
>
> Phaedrus: So be it. But let us be going, now that it has become less oppressively hot.
>
> Socrates: Oughtn't we first to offer a prayer to the divinities here?
>
> Phaedrus: To be sure.
>
> Socrates: Dear Pan, and all ye other gods that dwell in this place, grant that I may become fair within, and that such outward things as I have may not war against the spirit within me. May I count him rich who is wise, and as for gold, may I possess so much of it as only a temperate man might bear and carry with him.
> Is there anything more we can ask for, Phaedrus? The prayer contents me.
>
> Phaedrus: Make it a prayer for me too, since friends have all things in common.
>
> Socrates: Let us commence.

* * * * * * * *

HOMILY BY FATHER NICHOLAS AYO, C. S. C. AT THE ANNUAL NOVEMBER MASS IN MEMORY OF DECEASED GRADUATES AND FACULTY OF THE PROGRAM OF LIBERAL STUDIES

Revelation 22:1-6 and John 4:7-15

When you read Dante's version of hell you can comprehend why the middle ages might have preached on the avoidance of hell. It was a frightening place, and they spoke of it not out of a desire to manipulate people with fear, but rather out of a genuine sense that to be forewarned was to be able to avoid a great evil. We do the same thing with the threat of the Nuclear Inferno that hellishly threatens our world. We try with movies, books, lectures, meetings, and protest rallies to stir people up to the danger. We ask them to imagine the nuclear night, not to frighten them for our own gain, but to make it possible for them to avoid a great evil. If enough of us are sensitive to the awful reality of nuclear war, then we think we could be spared the experience of such a hell. The Nobel Prize for Peace this year went to a group of physicians active in educating the world to the catastrophe that lies down the road to war. A Notre Dame graduate was prominent in that endeavor so honored.

Not so long ago when persons could not pay their debts, they were put in debtor's prison until they did so. Of course, it was foolish in one way, because they could not make any money in jail. But, it was prudent in another way. Their relatives and friends, either from embarrassment or genuine concern, would usually come to the rescue, and bail out their kin. The doctrine of purgatory in the centuries past worked on much this same model. People owed debts on their sinfulness, debts that those who loved them in this life could help to lift for them. It was a great consolation still to be able to do good for loved ones, even though they were dead. Hence Catholics have prayed for their dead, as did the Jews before them. In our own experience, it is probably a disaster relief effort that comes closest to helping us understand how we in solidarity might help each orther. Famine in Ethiopia brought aid and assistance, small and large, from thousands who recongnized that these people could no longer feed themselves. They depended upon care from outside.

Our spirituality today does not think much in terms of hell or purgatory. It is a mentality foreign. We not only do not know how to help those who have died in a quantitative way, but we no longer ask the saints in heaven to assist us, as once we did. Spiritualities change, and I am not here today to resolve large issues with a fast word. I think, however, that we are less occupied with the give and take between the living and the dead because we are more occupied with the prior question. Shall these bones live? That is the twentieth century question. We wish for life to survive death, and we affirm our belief in the communion of saints, including our loved ones, when we gather for All Souls Day liturgy, or a memorial mass in PLS. Let us put the question, "shall we live," in a more pyschological way. Shall our relationship with those we love perdure? Hell is not to have achieved at least one lasting relationship in one's life. Purgatory is to know one's relationships are flawed in generosity and to want still to make them perfect.

We remember the dead, and we recall our relationship with them. We hope it continues; we pray it even grows as they come closer to God, and together we come closer to God. We tell the stories of those who have died. We read their books and keep their stories alive. We tell of their impact. But we also grow old, and we forget. Most of the people of the world are forgotten, and even now we find our memories of those we love grow weaker with the passage of time. But God remembers. His is not just a story told in his memory in the Eucharist, not just a memorial mass, but

telling the story of Christ we are in his presence. We hope that all those who have died, and those we have loved most of all, stand present to us today because they are in the life of Christ and in the Kingdom of God. How heartfully we wish them the fullness of God. If in need, we offer them our prayers. If in plenty, we count on their prayers. We hold to a back and forth, a give and take, in the community of saints, the mystical body of Christ, the heavenly Republic, the Paradiso of "the love that moves the suns and stars" and exceeds all our imagination.

Today's Gospel recalls the samaritan woman at the well. All of us know the Mestrovic sculpture on the way into O'Shaughnessy. She was of an outcast race, and a woman in a man's world. Jesus asks her for a drink of water. Then he offers her in exchange the water that wells up into eternal life, the water that is an everlasting fountain, the water that quenches thirst once and for all. We are so thirsty, so thirsty to live and not to lose anyone we have ever loved. He says a fountain of life will bubble up within her. In the kingdom of God there is no more death and never again a goodby. May each one of you here today know such a hope springing up in you with abundance.

SOME THOUGHTS FROM PAT MANNION, CLASS OF 1978

December 27, 1985

Today is a big day. As I drove the early morning traffic into work I heard a little National Public Radio blurb on today being the anniversary of Darwin's voyage on the Beagle. For most of us, this means absolutely nothing. It means absolutely nothing to me, either, but it got me thinking....

That radio spot should have evoked a wave of nostalgic reminiscence about all the great things I know about Chuck Darwin and the now famous Galapagos Islands. You know what, I can't even remember off of what coast of what continent the Galapagos are located (three years ago I bought one of those fancy globes with a light inside and will finally use it when I get home).

Seven and a half years after graduating the General Program (a.k.a. Program of Liberal Studies) I only think about survival of the fittest at tax time, beagle is the miscreant neighbor's bothersome dog, and evolution is a series of more confusing (though somehow more efficient) computer programs.

Using my limited capacity for logic, deduction (or is it reduction) indicates six semesters or three years of 5 1/4" brain diskettes have been inadvertently erased. I do know I can out-Socrates Socrates: no false modesty involved, I know nothing. Here I am approaching (perish the thought) 30 and can't recall which Greek stepped into what river to figure out how time works.

So I put microchips to continuous feed paper to share this realization with all other GP/PLS past, present and future participants. The realization that my hard earned bachelor's degree helped me succeed, helped me get to a position of relative comfort in this cold, cruel world. Helped me get to a point where I no longer retain all the great thought from the great books. Helped me appreciate the decision made in 1978: the decision *not* to sell the volumes of reading material I accumulated throughout my many visits to the bookstore's second floor.

I think it's time to dust them off and go back to find out just how much I've forgotten.

P. A. Mannion

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Class of 1954

Tom Schwietz, 2352 Valley Vista, Louisville, KY
Commercial pilot

Class of 1957

James Carideo, 3007 Samara Drive, Tampa, FL 33618
VP General Counsel, General Telephone Co. of Florida, Tampa

Class of 1958

John S. Rippey, #1003, 4740 Conn. Ave. NW, Washington, D.C. 20008,
Trade Association Executive

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Eugene W. Tuite, 49 Concord Ave., Glen Rock, NJ 07452
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Class of 1966

Daniel Curry, 1st National Bank of La Porte, PO Box 5050, La Porte, IN 46350
William H. Hackman, PO Box 3333, Bloomington, IL 61702-3333
Attorney at Law

Class of 1971

Raymond Condon, 2700 Addison, Austin, TX 78757

Class of 1973

Rick French, lll Grand Blvd., Colorado Springs, CO 80911
Teacher, coach, and father of two.
Donald J. White, MAJ., HHC 3d SUPCOM, ALS Material, APO NY 09457
Aviation logistics officer - pilot - US Army

Class of 1974

Janet Waltman Hessling, 2034 B Carroll Dr., Raleigh, NC 27608
Assistant Paintings Conservator, North Carolina Museum of Art
Douglas Siddoway, 1821 Upper Terrace Road, Spokane, Washington 99203
Attorney

Class of 1975

Gregory C. Moor, 4947 N. Lester Ave., 1st Fl, Chicago, IL 60630-2143

Class of 1976

Richard Blower, 1929 Beesley Dr., Las Vegas, Nev. 89115
Attorney- US Air Force

Class of 1977

Anne Dilenschneider, 1798 Scenic Avenue #312, Berkeley, CA 94709
Studying Liberation Theology
Mark Dulworth, 2034 Houston Natural Gas Bldg., Houston TX 77002
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David Nield, 100 Theodore Fremel Ave, Apt. #A2F, Rye, NY 10580
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Class of 1981

Frank Browne, 91 Strawberry Hill Ave #527, Stamford CT 06902
Janice L. Peterson, 1119 Lindsey, South Bend, IN 46616
Medical student

Class of 1983

David Bartholome, St. John's Preparatory School, Collegeville, MN 56321
English teacher

Class of 1984

Ken Harkenrider, 327 New York Ave., Newark, NJ 07105
High School English teacher
Sharon E. Keane, 501 Slaters Lane, #1219, Alexandria, VA 22314
Management Analyst with the Office of Management and Budget (OMB)

Class of 1985

Thomas Berry, 6121 Jackson St. #2, Pittsburgh, Pa. 15206. Graduate study in Philosophy at the University of Pittsburgh.
John M. Breen, Law Student, 412 Ames Hall, Harvard University, 20 Everett St., Cambridge, MA 02138. Home address: 515 Oxford Place, Louisville, KY 40207