

The Professor and the Pupil: Addressing Secularization and Disciplinary Fragmentation in Academia

Calvin B. DeWitt

Secularization, fragmentation of the disciplines, and reductionism in academia increasingly pose a problem for our ability to understand and to engage responsibly the highly connected world system in which we live and work. The separations that divide disciplines, departments, science and humanities divisions, colleges, and seminaries help establish and perpetuate this problem. Also perpetuating this problem is staffing of our institutions with professors whose training immediately prior to taking their first faculty position has been highly specialized and “focused.” They are caught in the disciplinary web that constrains them from rectifying this problem. Moreover this problem is re-enforced by college administrators and academic policy that seeks to give courses and programs for undergraduates that are understood and accepted by graduate and professional schools. Beginning with what I hope is a thought-provoking epigraph, my paper works from the thinking of Michael Polanyi on “irreducibility” to considering the structure and controls of complex systems, and from this develops a consideration of the necessity of holding together – in one integrated system – scientia, ethics, and praxis.

Submerging into molecular biomechanics in a class of six hundred, someone whispers to their neighbor, “How much deeper are we diving today?” Their teacher—decades-removed from a similar but forgotten thought—wonders, “Will I ever resurface in this academic sea?” The first is the repeated whisper of the Student, the second a passing thought of the Professor.

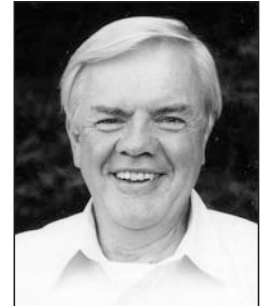
As I write this New Year’s morning on the great marsh, the grass beneath the black oak out my study window is turning green, buds are swelling on the shrubs on and around Oak Knoll, and the geese are calling as they move from lake to lake. News reports are filtering into my study from the kitchen proclaiming “peace on earth.” It is winter in Wisconsin.

I am reflecting on a talk I gave at the University of Chicago in November 2006 that now is the raw material for my writing today. While I reside this morning on Waubesa Marsh, my work embraces the Nelson Institute seven miles north—where I serve as professor in an institute whose namesake is a fine former Wisconsin governor and US Senator, Gaylord Nelson, a leader

who helped so many Americans support Earth Day and an unprecedented series of comprehensive environmental legislation.

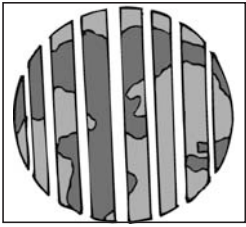
I am celebrating two gifts today that enable and inspire my vocation: first, “The Wisconsin Idea” that has my university view its boundaries as those of the entire state and on to include the whole biosphere;

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and second, Chancellor H. Edwin Young’s creation of a blue ribbon task force in the late 1960s to correct the “fragmentation of the academic disciplines” – the academic disintegration that has been developing as universities become increasingly reductionist. As I began my work at Wisconsin, the first of these gifts gave me the freedom to serve the environment and society – across a wide geographic, ethical, and religious range. The second – one that produced the Nelson Institute in 1970 – was my appointment to the University of Wisconsin-Madison faculty in 1972 without a department. This second gift gave me the commission to address “disciplinary fragmentation” and – using the new Institute’s integrative theme of “the environment” – I joined with colleagues in 1972 to help put the disciplinary pieces back together again.

As I reflect on my experience at Chicago and the “The Redemption of Reason” conference to which I contributed, I bring to mind its two stated purposes: (1) to address the problem of secularization in academia, and (2) to report on practical examples of how we can deal with this problem. Stimulated earlier by a provocative 1968 essay on secularization by Dallas Willard – as was a conference in 2005 where the first question had largely been addressed and extended – the focus of the 2006 conference was on the second question, enlarged to incorporate disciplinary fragmentation and reductionism. This defines the content of this paper, and it raises the fundamental question: Why is it vital to bring the disciplines together into an integrative framework; why is defragmentation important and necessary?

The answer clearly has something to do about fulfilling one’s vocation. No one who has set out to pursue the Ph.D. has done so merely to “get a job.” There is a higher purpose – a purpose that can be lost in the busyness of a vocation-less occupation. In achieving this higher purpose – as one commences from receiving the Ph.D. and its narrowed and highly focused work – there is a kind of redemption needed, a kind of “buying back” of one’s life and work to assure that it is dedicated to one’s calling, one’s vocation. Such redemption is not abandonment of what one has gained in graduate study and research; instead, it is a re-purchase of a real and full-orbed life,

made worthy by doing grateful work and pursuing effective service. Beyond our question’s dealing with vocation as this might classically be defined, it goes beyond it to working thoughtfully within the constraints and opportunities of our 8000-mile diameter planet and our sensitive sharing of its life and integrity with each other and the rest of creation. And, speaking of vocation, it also has to do with the whisper of a student immersed in reductionism and the fleeting thoughts of a professor who is delving deeply ...

Life’s Irreducible Structure

In proceeding to address our problem of secularization, fragmentation of the disciplines, and reductionism in academia, it would be helpful to call in an authority whose work might help us understand the nature of our problem and this fundamental question. For this, I think of Michael Polanyi and particularly his “Life’s Irreducible Structure” published in 1968 in *Science*. Polanyi (1891–1976) earned a doctorate in physical chemistry from the University of Budapest in 1917, moving to Germany’s Kaiser Wilhelm Institute for Fiber Chemistry in Berlin, and next to the University of Manchester in England as professor of physical chemistry. At Manchester he extended his work into social science and philosophy and accordingly was appointed Professor of Social Sciences at Manchester (1948–1958).¹

In “Life’s Irreducible Structure,” Polanyi thoughtfully reflects on the structure of life, finding in the hierarchy of living things – from the sub-cellular level to tissues, organisms, ecosystems, and beyond – that any level being investigated has two sets of controls: one within that level and another above that level. This “dual control” means that living cells, for example, have their own internal controls that in many ways make them what they are. But the same cells also are controlled by the particular tissue of which they are part; they are typically constrained from being anything other than what the cells in that particular tissue are and do. Similarly at the next higher level, tissues, with their own internal controls, are controlled by the organ of which they are part, and so up the hierarchy to organisms,

biotic communities, ecosystems, the biosphere, the solar system, and beyond.

Polanyi's insight here is important in addressing our problem and question because when we reduce our study to very small levels, without considering the controlling levels above, it is necessarily "reduced." Such "reduction" is done as a matter of convenience and of "focus" and intentionally sets aside the controls that operate at one or more levels above it. It is a convenient "fragmentation" that allows for gaining deeper and deeper insights into the internal controls operating within a specific level in the structure of life. Such fragmentation, however, also leads to fragmentation of knowledge into disciplines that are decreasingly narrow in their scope, so much so that we may become unable to ask the big questions. The big questions—questions that depend upon higher levels of control—have been disconnected, and reductionism and secularization result. This process can go so far that the fragments under study—now deprived of their relationships to one another—may even be assigned to different schools and colleges, and separated institutionally between universities and seminaries.

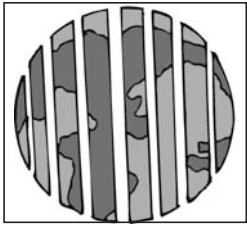
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I recall reading in the late 1960s an article by Albert Szent-Györgi, a scientist I very much admired because of his great breadth of knowledge and methods of discovery. His was an illuminating contribution to recognizing scientific reductionism in the context of life's "irreducibility." Szent-Györgi is another Hungarian-born scientist² and a Nobel Laureate who, reflecting on fifty years as a researcher, wrote in *Perspectives in Biology and Medicine* how he went into biology because of his excitement and wonder for life, but came late in his career to discover—after he had descended the levels of complexity to the molecular biomechanics of glycerinated rabbit psoas muscles—that he had lost life in the process. He wrote in 1966 that he was working to climb back up the ladder he had descended, in order to discover life once again—the vibrant life that had so much attracted him to a vocation in science.³

Both Polanyi and Szent-Györgi contribute to helping us address our problem and question. What they help us to see is that "diving deeper"—through the series of levels each with their successively smaller components—results in the loss of our consideration of the properties and characteristics of the higher levels. Well before life is lost in this descent, moreover, even higher levels of control—for example, the things that hold systems of living things together such as social constructs and trophic relations—are also lost. So too are the things that hold human societies together such as ethics, justice, and common endeavor. And this, of course, is where secularization comes in. If secularization is defined as separation of the ethical and spiritual from the rest of knowledge, then confining our attention below the ethical and spiritual levels will find that ethics and spirituality are lost in our descent.

In bringing these contributions of Polanyi and Szent-Györgi into the context of our problem and question, I find it interesting and helpful to use the human foot as a heuristic metaphor. When looking at the structure of the foot, one might first recognize that it ceases to be a foot as soon as it is disaggregated. As a functioning foot, it has various sets of components that include bones, ligaments, and muscles. Its inflexible components (heel bone, metatarsal bones, etc.) are bound together by slightly more flexible components (ligaments) both of which are made interactively dynamic by contractile components (muscles). While the set of inflexible components (bones) have their own internal controls (nourishment of the bone tissue, etc.) they are integrated by a set of somewhat more flexible components (whose internal controls provide strength with limited flexibility) and by a set of contractile components that bind and dynamically connect the least flexible components together (whose internal controls nourish and energize the constituent actin and myosin of their muscle fibers). The connecting components (ligaments and muscles) thereby contribute to providing the capacity of the system (the foot) to bring all components under the control and thereby behave in concert. The foot, made up of these three (and other) parts, controls its components within limits that allow the foot to maintain its structural and functional integrity. And the foot in turn is controlled by the higher systems above.⁴

To continue with this metaphor, we know that the ligaments can be frayed, torn, and broken. (This may happen when the controls of the level above the foot are violated, as may occur in some sports events, for example.) When connections between components are broken, fragmentation of the higher system (the foot) results, and the system is restored to full structural and functional status only when the dissociated components are re-ligated (the ligaments are restored)—the process to which we can give the name, "re-ligation" or "defragmentation."⁵ In unpacking this metaphor, it is worthwhile to note that any member of the sets of bones, ligaments, and muscles must be of such



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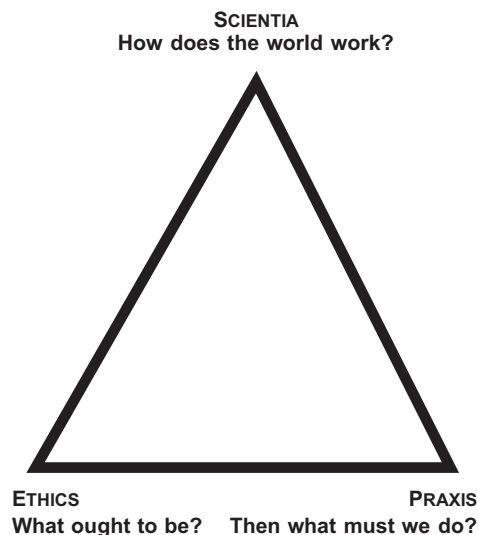
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form, shape, strength, and function that it is *complementary* to all the other components of the system. Such *complementarity* is basic to the *integrity* of the system. And integrity here means very much what is suggested by its root word *integer*—an indivisible system that only fully is a system when it is whole.⁶ It is this integral system that conceivably could be called “the ligament-heel bone-metatarsal system” or “L-H-M Triad.”

With this metaphor as a prologue, I would now like to propose that—in the secularization, disciplinary fragmentation, and reductionism of the academy and the broader society—*scientia*, ethics, and praxis have been largely disconnected from each other. I propose that this comes from the academy’s descent down the cascade of systems and subsystems and their controls, and that the connections between *scientia*, ethics, and praxis have been frayed, torn, and broken. Reconnecting these appears to be requisite for right living and restoring right living on earth.

A Framework for Right Living and Restoring Right Living

The interactive engagement of *scientia*, ethics, and praxis that is basic for shaping and reshaping human behavior in the direction of right living and restoring right living on earth can be depicted as follows:



I propose, in the interest of nonreductionist integrity, that the questions at each corner

of this triad framework must be addressed interactively and coherently to understand what sustains, degrades, and restores a system at any level in the hierarchy of life’s and the world’s structure, and are basic to understanding right living on earth.⁷

Scientia

Knowledge and understanding of how the world works, as one of the three corners of the triad, requires a kind of “reading” of the “text” of the world system comprising the earth and earth’s biosphere,⁸ or reading and reciting texts that are written about it. *Scientia* includes what we call *natural science* but goes beyond this to include what we learn in social sciences and humanities, and beyond this again to whatever other things human beings learn from living in the biosphere. *Scientia* is the body of knowledge whose elements we strive to make *coherent* within this body and with the ways things are in the operations of the earth and the biosphere.

To do this in my course in Environmental Science, I present a series of thirty-five to forty-five models and representations of the components of the world, ranging from molecules to the biosphere. These models are given and studied in the form of images, equations, figures, diagrams, maps, verbal descriptions, and more. Each is described so that it not only can be mentally grasped in itself but also has the right “handles,” “connection sites,” or “coupling points” by which it can be connected and related with the other components of the system. My aim is to build coherently from the individual components on to sets of components that interconnect with each other, and on to the point where the full system is described—in this case, the biosphere.

Important here is the well-understood practice in the natural sciences, that each of these component models, and the ultimate system of interconnected models, necessarily are abstractions. None of the models is an exact representation (replica). Such abstraction not only makes each understandable and their assembly possible, it also makes the system of models useful in developing an understanding of how the world works. The goal is to provide, as best can be achieved, a means for representing our knowledge of the world as an undivided

whole, without fragmentation. This then becomes the “scientia part” of developing a scientific, ethical, and practical world and life view.

Ethics

Knowledge and understanding of what ought to be with respect to human actions in the biosphere requires reading of the “text” of the biosphere together and coherently with the written and oral ethical texts that have stood the test of history. From this we may come to realize, for example, that human activity which poisons food supplies, human behavior that renders homes uninhabitable, or human practices that destroy the regenerative capacity of forests ought not to be. The culture that incorporates into itself a system of beliefs about what ought to be and what ought not to be—its *ethos*—develops a corresponding body of ethical knowledge—its *ethic*. This ethical knowledge is passed from generation to generation through oral traditions and written texts as the gift derived from long-standing beholders and intentional and unintentional experimenters and participants interacting with each other and with and within the biosphere. The body of this knowledge is *ethics*.

In helping to discover this body of knowledge in my teaching, I begin with academic ethics and review some of its content, including such things as doing our own work on exams and reports, not representing the work of others as our own, maintaining a decorum in the classroom conducive to and not disruptive of teaching and learning, and respecting the rights and privileges of other members of the class. I then utilize an environmental science textbook to help my students understand the ethical underpinning from which it is developed, leading them, for example, to understand that the chapter on air pollution is not only scientifically and socially interesting but is ethically based and ethically motivated—and similarly for other chapters like those on biodiversity, the world climate system, toxicology, etc. In selecting the textbook for this ethical analysis, there of course is the need to assure that the text represents well our current understanding and is rooted as deeply as possible in the primary refereed literature and reliable sources based upon this literature. In putting the undergirding ethics of such a textbook into perspective, I distinguish between the primary refereed literature, the secondary gray literature, and the popular literature as sources of knowledge and understanding.

The underlying ethics are made explicit. For example, from a chapter on air pollution, I might make explicit the underlying ethic that such pollution ought not to be, that it ought not to be above certain levels, or that it should not be allowed at levels that sicken, maim, or kill people. Similarly, if the text deals with soil erosion, including gully erosion, sheet erosion, and raindrop erosion, the underlying ethic might be that erosion ought not to be or ought not to exceed certain levels. A chapter on biodiversity may

have as its underlying ethic that extinction ought not to be or that extinction ought not to exceed “background extinction rates.” This “mining” with an entire textbook for its undergirding ethics can be used to produce a summary. Or, if this is the text being used for a course being taught, the underlying ethics need only be recognized as being present even if not made explicit.

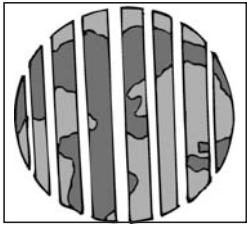
Praxis

The actions of human beings in the world, or *practice*, derive from a body of knowledge of how things can be accomplished and are being accomplished in the world. *Praxis* incorporates both this practice and the body of practical knowledge and understanding upon which it depends. *Praxis* is informed by tradition, scientia, and ethics. In turn, praxis informs science on what more we need to know about the world, and ethics informs us on what more we need to consider on “what ought to be” before we act in the world.

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Praxis, in its most robust and rich sense, flows from the fullest understanding of scientia and ethics, and is controlled by the interactions and interrelationships among all three corners of the triad. With these sources of knowledge, and the overarching control of the three interacting, praxis directs human actions in the world toward shaping and reshaping human behavior in the direction of right living and restoring right living on earth. One term that can be applied to actions that come from such informed and controlled praxis is *stewardship*. But it should be noted that it need not have this or any other name. In my own tradition, I found it interesting that one of my professors described our religion not as something that was merely believed, but as *a way of life*. He was using this concept of religion in a way that accords with the idea of dynamic ligation and re-ligation of scientia, ethics, and praxis.

So, whatever we may call this system of interactive dynamic relations among scientia, ethics, and praxis—re-ligation, religion, the SEP Triad, or whatever—right living and spreading right living require that all three interact, each informing the others. All three need to be



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held together interactively. If they are “reduced,” for example, to two of the corners of the triad, there may be serious consequences. For example, if a two-component *scientia to praxis* path is taken, bypassing ethics, to proceed from scientific knowledge of rivers and electricity to the construction of hydroelectric dams, serious consequences may result such as severely reduced soil fertility due to exclusion of riverine sedimentary deposits from river flood plains, stoppage of nutrient input to a downstream estuary and its fishery, or flooding of homes and habitations. If a two-component *ethics to praxis* path is taken, bypassing *scientia*, to move directly from ethical concerns about year-round water supplies to the drilling of tube wells, serious consequences may result such as converting nomads into sedentary people whose permanent residence in one place may deplete grazing resources, firewood supplies, biodiversity, and habitat availability.

Right Living and Spreading Right Living

I have three suppositions that relate to science, ethics, and praxis that I now present for heuristic purposes. The first is that very few would object to a broad goal of education being the promotion of right living and the spreading of right living. A second is that very few might object to the need for maintaining a system of dynamic interrelationship among *scientia*, ethics, and praxis. And a third supposition is that many might object to bringing religion into consideration here. These suppositions are heuristic in the sense that they raise some fears and concerns about religion—many or all of which are well founded based as they might be upon knowledge of religious history and interreligious warfare. However, since this paper deals with secularization—defined here as the separation of the ethical and spiritual from the rest of knowledge— and since ethics and spirituality are very much related to religion and religions, we do have to consider what we mean by *religion* and how we understand it.

As Polanyi helped us at an earlier point in this paper, Huston Smith, a pre-eminent scholar of world religions, I believe, can help us here in gaining insight into understand-

ing religion and its importance for finding how rightly to live on earth. After concluding that science cannot provide counsel “concerning things that matter most,” and that not all contents of the great wisdom traditions are “enduringly wise,” he passes “a strainer through the world’s religions” in order “to lift out their conclusions about reality and how life should be lived.” His sifting and winnowing to find the “enduringly wise” wisdom of the human race finds three realms: *ethics*, *virtues*, and *vision*, whose content he gives as follows:

Ethics. This addresses what we ought (and ought not) to do. Smith finds that the Hebraic Decalogue “pretty much tells the cross-cultural story” for this realm.

Virtues. This addresses “the kind of people we should strive to become.” Smith finds basically three virtues: “humility, charity, and veracity” where:

Humility is “the capacity to regard oneself in the company of others as one, but not more than one”;

Charity is “to regard one’s neighbor as likewise one, as fully as oneself”; and

Veracity is truth telling that extends beyond the minimum “to sublime objectivity, the capacity to see things exactly as they are ...” To live authentically, we must conform our lives to the way things are, in accord with the way that things actually work in the creation and the cosmos.

Vision. This addresses “the ultimate character of things” as rendered by the wisdom traditions. The “highest common denominator of the wisdom traditions’ reports” makes three claims about reality: “Things are more integrated than they seem, they are better than they seem, and they are more mysterious—more awe-inspiring—than they seem ...”

Smith views these three realms—*ethics*, *virtues*, and *vision*—as a baseline of the wisdom tradition that forms a platform for life. This tradition brings people to “a particular kind of joy, the prospect of a happy ending that blossoms from necessarily painful beginnings ...” and it holds out “the promise of human difficulties embraced and overcome ...”

Smith summarizes his findings by inviting us to imagine that we are viewing a tapestry from its underside and see there a maze of variously colored threads in patterns from which we can only infer the beauty of the other side. The wisdom traditions are our “most prolonged and serious attempts to infer from the maze on this side of the tapestry the pattern ... on its right side ...” Smith concludes that this brings meaning to the whole, “paves the way for a higher power” – the power of love. Love is “the only power that can quench the flames of fear, suspicion, and prejudice ...” Love can “provide the means by which the people of this small but precious Earth can become one with another.”

This brings us to Wayne C. Booth, the late distinguished Emeritus Professor of English Language and Literature at the University of Chicago—from whom I have borrowed the phrases “right living” and “spreading right living.” These phrases he uses in his definition of religion, which he gives as follows:

Religion is the passion, or the desire, both to live right—not just to live but to live *right*—and to *spread* right living, both desires *conceived as responses* to some sort of cosmic demand—that is, to a demand made to us by the *way things are*, by the way the world is, by the nature of Nature (as some would say) or by God himself (as explicitly religious people put it).⁹

Remarkable here is the presence of the three corners of our triad, each of them complementary to the other two: the *way things are* (scientia), the desire to *live right* (ethics), and to *spread right living* (praxis). Therefore, *within* religion—as Booth defines it—we find the need both for scientia *and* ethics, each completing the other, enabling us to understand and perform right action, *praxis*, in the world.¹⁰

If at this point we reflect on the metaphor from podiatry I have used above, we can ask, “Why not call a foot a foot?” And we also can ask, “Why not call the re-ligation of scientia, ethics, and praxis religion?”

Professing Professors

Whether or not we think of religion in this manner, we can proceed to ask how people committed to right living and spreading right living might pursue their life and work. Or, putting this differently, we can now ask how professors who are committed to professing from an integrative framework of interconnected and interacting scientia, ethics, and praxis might do so—in their courses, their lives, and their landscapes.

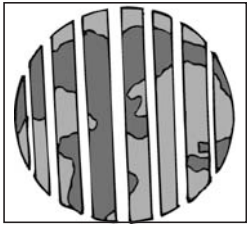
An interview with my daughter after her being a student both at a liberal arts college and a large research university is helpful in introducing this subject. I had asked, “At what school did you have the best teaching?”

While I thought I knew the answer, hers was wholly unexpected. Surprised that she identified the best teaching with the research university, I asked her why. “Dad,” she replied, “the professors at the university were so in love with their subject, so engaged with it, that they just had to tell! The professors at the college were great, but they mainly just told you what you had to know.”

A professor committed to the re-ligation of scientia, ethics, and praxis in academia will not only ascend the full scale of controls within which his or her research resides, but will make cross-connections at various points in this hierarchy of controls.

While professors may well have followed a reductionist path in their graduate research, and may continue to do so in research universities and colleges, they also live lives that are more comprehensive—lives from which they have full potential to profess beyond the confines of their research. While this does not mean that any one of us should jettison reductionist research, it does mean always putting this research into the context of the hierarchy of levels above it. Such as is done in a professor’s wider life—a professor committed to the re-ligation of scientia, ethics, and praxis in academia will not only ascend the full scale of controls within which his or her research resides, but will make cross-connections at various points in this hierarchy of controls. A professor so committed might find it necessary to ascend to the highest control imaginable in this hierarchy. (All of us are professors, of course, no matter what our “profession.”)

In so professing, we not only manifest the driving curiosity and vital passion for learning of our particular subject matter, but also our driving curiosity and vital passion for putting this into the context of how the world works and what to do with that knowledge—as it is directed toward right living and the spreading of right living. Professors may well expect that students may “catch” the spirit of such professing, be inspired to pursue knowledge with curiosity and passion, and be motivated in right living.



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university
in its mission
to the universe.*

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Enabling Students and Colleagues

As we engage in our search for ways to achieve “de-fragmentation” and “de-secularization” in the various ways we profess and publish in our lives and landscapes, we can find and utilize approaches that make this search a fruitful one. My personal search has produced four “enabling approaches” that are but a few of many. These are approaches through which I invite my students to participate with me in developing awe and wonder, in nurturing curiosity, and in fueling passion.

1. Open up the university of the creation to life-long learning.

This enabling work brings students into marshes and prairies, cities and countryside, landfill sites and power plants, and wherever we can be brought to develop our curiosity and understanding by direct study and experience. This enabling approach is not only designed to open up this “university,” but to keep it open throughout our lives.

2. Provide authentic opportunity for developing awe and wonder.

Entrance into the natural world can enable students to develop awe and wonder for the creation. With development of awe and wonder as the primary purpose of this enabling approach, care is taken not to allow taxonomy, systematization, and objectification to stand in the way of achieving joy and appreciating the wonder of creation. Contemplation, beholding, listening, taking the time—all of these are important in achieving this.

3. Serve the college and university vocationally.

Joining in doing the work of the college and university in a “non-reward” mode is important for contributing positively to the institution, including having it address the problems of disciplinary fragmentation and reductionism. In this, professing professors can model leadership that works to put and keep the three parts of the triad together.

4. Provide continuing opportunity for discussing any and all things.

Following through on the generation of joy, curiosity, and passion needs to be fostered so that it will set root and grow. This can be

arranged, for example, by having something like a “coffee hour” after every lecture—at a convenient and comfortable place to be—in a relaxed atmosphere of friendliness and hospitality.

Daring to Do Our Duty

At the top of the hill at the University of Wisconsin is Bascom Hall—named, like the hill, after its early Puritan president, John Bascom. Centered in front of this building is a statue of Abraham Lincoln, behind which is the large arc of a great stone bench with a message on its massive backrest. It says, “Let us have faith that right makes might and in that faith dare to do our duty.”

It is carved in stone.

It joins another message on a plaque on the front face of Bascom Hall:

“WHATEVER MAY BE THE LIMITATIONS WHICH TRAMMEL INQUIRY ELSEWHERE, WE BELIEVE THAT THE GREAT STATE UNIVERSITY OF WISCONSIN SHOULD EVER ENCOURAGE THAT CONTINUAL AND FEARLESS SIFTING AND WINNOWING BY WHICH ALONE THE TRUTH CAN BE FOUND.” (TAKEN FROM A REPORT OF THE U.W. BOARD OF REGENTS IN 1894)

MEMORIAL, CLASS OF 1910.

It is cast in bronze.

“Daring to do our duty” with “faith that right makes might” and ever encouraging “that continual and fearless sifting and winnowing by which alone the truth can be found” is at the heartbeat of the university in its mission to the universe.

What we have cast in bronze and carved in stone not only here, but at many of our educational institutions, are messages that bring us from our reductionist burrows and raise us above the surface where once again we can see the broad and wonderful context within which we do the work of our life—the context of the whole creation, and this within the context of what oversees all of it, Love.

Having descended down the cascade of systems and subsystems and their control

by the systems above them, time must be taken and effort put forth to “buy back one’s life and work to assure it is dedicated to one’s calling.” Huston Smith’s sifting and winnowing to find the “enduringly wise” wisdom of the human race can be one path to lead us in a “redemption of reason” to consider *ethics, virtues, and vision*. Wayne C. Booth can provide a path also in his defining religion as “the passion, or the desire, both to live right—not just to live but to live *right*—and to *spread* right living ...”

[These] messages ... bring us from our reductionist burrows and rise us above the surface where once again we can see the broad and wonderful context within which we do the work of our life—the context of the whole creation, and this within the context of what oversees all of it, Love.

Following these paths, we might “redeem reason” not only by what we profess in our classrooms and publish in our professional journals, but also by what we profess and publish in our lives and landscapes. In so professing, we would inspire driving curiosity and vital passion for learning in those whose lives we affect, including our children and students who might well “catch” the spirit of such professing, be inspired to pursue knowledge with curiosity and passion, and be motivated to live rightly on earth. Even perhaps praying, “Thy Kingdom come, Thy will be done, on earth ...”

It is February now, and winter appears finally to have come to Wisconsin, as snow covers the landscape and the temperature is -20°F. Yesterday, at Geneva Campus Church, Prof. James Bockheim said that daytime temperatures at his research site in Antarctica were 10–15°C (50–59°F) and water is flowing and rushing everywhere. “Warmest January in thirty years,” said Jim. It is summer in Antarctica. When writing the first of this paper back on January 1, the temperature had risen to 48°F and I had moved my South African *Clivia* outside to help induce flowering. Inside a radio caller’s voice had drifted into my study from the kitchen saying something about “moving forward.” Forward! That is a good idea for January 1 and for every day. ♦

Notes

- ¹Among Michael Polanyi’s other works is the book, *Science, Faith, and Society* (1946). His brother was the economist, Karl Polanyi, and his son, John C. Polanyi, won the Nobel Prize in chemistry in 1986.
- ²Albert Szent-Györgi discovered vitamin C and the proteins actin and myosin and their operation of muscle contraction. He was born in Budapest in 1893 and received the Nobel Prize in physiology or medicine in 1937.
- ³Albert Szent-Györgi, “In Search of Simplicity and Generalizations (50 years Poaching in Science)” in *Current Aspects of Biochemical Energetics*, Fritz Lipmann dedicatory volume, ed. N. O. Kaplan, and E. P. Kennedy (New York: Academic Press, 1966), 63–75.
- ⁴This description can be re-written without reference to the foot and its components, as follows: One or more sets of components are held together with one or more sets of connecting components. While the components of each of these sets have their own internal controls, they are integrated within the higher system of which they are part and are controlled by that higher system. The higher level system controls the behavior of its component parts within limits that allow for the higher system to maintain its structural and functional integrity as it in turn is controlled by the higher systems of which it is part.
- ⁵Of additional interest here is that the heel bone of the foot is connected to the metatarsal bones, but only indirectly. What this tells us is that the system (the foot) depends upon ligation (and re-ligation) of components that may not be contiguous but yet are part of the whole.
- ⁶*Complement*, from which the word *complementarity* is derived, means “to make whole, to fulfill, to complete.” A *complement* is “something which, when added, completes or makes up a whole; each of two parts which mutually complete each other, or supply each other’s deficiencies.” The verb, *complement* means “to make complete or perfect, to supply what is wanting,” and the adjective, *complementary*, means “completing, perfecting.”
- ⁷The descriptions of *Scientia, Ethics, and Praxis* that follow come from my paper, “Stewardship: Responding Dynamically to the Consequences of Human Action in the World,” in *Environmental Stewardship: Critical Perspectives – Past and Present*, ed. R. J. Berry (New York: T T Clark International, 2006), 152–3.
- ⁸I use *world system* to encompass the whole of the earth together with its biosphere—the thin fabric of life that envelops it. When I use the word *world*, I use it ambiguously—meaning either the biosphere or the world system. When I use the word *earth*, I also do so ambiguously—meaning either the geophysical earth or the world system. My use of the word *biosphere* however, is not used ambiguously and incorporates the entire habitable earth, including human beings, cultures, and societies.
- ⁹Wayne C. Booth, “Systematic Wonder: The Rhetoric of Secular Religions,” *Journal of the American Academy of Religion* LIII, no. 3 (1984): 677–702. What he gives here is his translation of Ernest Hocking’s definition:
If, to agree on a name we were to characterize the deepest impulse in us as a “will to live,” religion also could be called a will to live, but with an accent on solicitude—an ambition to do one’s living well. Or, more adequately, *religion is a passion for righteousness, and for the spread of righteousness, conceived as a cosmic demand.* (William Ernest Hocking, *Living Religions in a World of Faith* New York: MacMillan, 1940, 682).
- ¹⁰For explicitly religious people, God is responsible for the way things are and a demand made by God for right living also means living in concord with the way God created and intends all things to be. This also puts science *within* the definition of religion rather than outside it.