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Alexander Werth

Hampden-Sydney College, awerth@hsc.edu

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Unity in Diversity: The Virtues of a Metadisciplinary Perspective in Liberal Arts Education

ALEXANDER WERTH

HAMPDEN-SYDNEY COLLEGE

“Without the possibility of action, all knowledge comes to one labeled ‘file and forget’ and I can neither file nor forget.”

—Ralph Ellison, *Invisible Man* (1952)

SEEING THE ENTIRE ELEPHANT

Remember the story of the blind men and the elephant? Each man touches a different part of the animal (its side, trunk, tusk, leg, ear, and tail) and pronounces his find a wall, a snake, a spear, a tree, a fan, or a rope. As the poet Godfrey Saxe (1816-1997) wrote of the blind men in his retelling of this ancient Indian parable, “Though each was partly in the right, they all were in the wrong” (Galdone, 1973). This allegory quickly encapsulates the benefits, and the challenges, of seeing, or not seeing, something through multiple perspectives—in short, it illuminates the perils of hasty reductionism.

Consider that when people ask “Can I see that?,” 99% of the time what they truly mean is “Would you please hand that object to me so I can hold it in my own hands and turn it around, to see and feel and otherwise experience all sides of it?” This is what most of us mean by “seeing”: looking at something not from a distance or from one angle but closely, from all perspectives. Then, too, blind people do “see” with their hands, just as infants and toddlers “see” objects with their mouths. You can conduct your own “elephant” exercise in the classroom, both with blindfolded and “sighted” students, preferably using an unusually shaped or otherwise complex and unfamiliar item that cannot be described or understood from a single perspective.

Of course, this object lesson also demonstrates the hard truth that all of us, based on a single outlook, are generally quick to make up our minds, often stubbornly so, despite what everyone else tells us. A seeing person can make sense of an elephant, certainly, but if each of the figurative blind men had merely moved around the creature, or simply listened to his companions, he might have “seen,” inside his mind’s eye, exactly what he was dealing with. Only with a combination of all these diverse vantage points does a truly unified, realistic picture appear. A unique perspective does

not preclude one from finding “truth,” but it’s hard to dispute the conclusion that with multiple perspectives one can arrive at the truth much more quickly, conveniently, and reliably.

Many people learn this lesson late in life. Perhaps some never learn it at all. Clearly the best and most opportune place to learn the advantages of multiple perspectives is in college, preferably through a multidisciplinary liberal arts education (though not a traditional one, as will be explained). Many entering college students have not yet moved beyond a concrete view of the world, but we can hasten their intellectual development by showing them the virtues of a holistic education, with a firm basis in Socratic self-knowledge and an emphasis on unified knowledge. More specifically, an honors education is the ideal vehicle to dispel a limiting outlook. Instead of merely singing the praises of multiple perspectives and listing the challenges to such an approach, I hope to provide both the background rationale as well as practical advice to help professors and program directors incorporate this essential strategy into honors curricula.

UNI-, MULTI-, AND METADISCIPLINARY STUDY IN THEORY AND PRACTICE

Many metaphors have been employed to describe the journey students take during their college years: climbing mountains, crossing a sea or a desert, even jumping through hoops or moving over hurdles. All of these metaphors share a common theme, of course: moving forward. As students grow and learn they make progress, and they inevitably, invariably see things in a new way. This result—learning to analyze issues from multiple perspectives—should not be seen merely as a fortuitous outcome of education; rather, this must be the definitive goal. Multiple perspectives are not only conducive to but in fact essential to a modern liberal arts curriculum. As students take courses in a variety of disciplines, we hope that they see patterns and processes, concepts and connections linking one field to the next. They should find bridges between subjects. They should search for disciplinary parallels and intersections. They should learn to relate ecology and economics, public policy and government, history and literature, and so on—what Marion Brady has aptly termed a “seamless curriculum” (Brady, 1989), or what I call a “metadisciplinary” perspective.

Educators often speak of interdisciplinary or multidisciplinary emphases that combine traditional disciplines of scholarship and teaching. Such an emphasis might lead students to learn not merely about political science, for example, but about political science in conjunction with history or philosophy. However, by metadisciplinary I am referring to a larger curricular focus that transcends or supersedes traditional disciplinary boundaries to create a truly holistic, systemic, integrative worldview uncluttered by familiar limits and barriers. Instead of merely linking two or more customary fields together at their margins, a metadisciplinary focus reveals that all such fields are fundamentally related in numerous significant ways, both theoretically and practically. Such a focus demonstrates that no one can legitimately study political science without due consideration of history or philosophy. The real world is not neatly divided into separate realms (of economics, politics, etc.), so why should education be? In

sum, a metadisciplinary curriculum is one in which traditional fields *must* be viewed together, as corequisites. One could study only elephant ears or tusks, but one must see these as components of a coherent, unified whole.

Admittedly, some of this is easier for students than for their professors. Whereas instructors generally have the advantage of a broader perspective that age and experience, not to mention years of intensive study, impart, there is no denying that in a majority of cases, faculty tend not to think in meta- or even interdisciplinary ways. Much of this stems directly from their training. Academics are trained in and think in terms of rather narrow, often extremely narrow, research interests and backgrounds. At too many institutions, especially larger ones, disciplines, even departments, have become isolated, focused splinter groups. How do we educate ourselves and our colleagues to adopt a metadisciplinary perspective? Surely this is just as important, and just as desirable, as instilling in our students a habit of multi-perspectivism. Fortunately, honors courses and programs constitute an ideal venue in which to develop metadisciplinary curricula.

It is a curious fact that even as fields of study become more and more narrowly specialized—as the world of academe becomes more splintered and esoterically arcane—the world is becoming a decidedly “smaller” place. Improvements in technology have rendered global travel and communication almost effortless and instantaneous. It is now truly a small world after all. Even in the remote, rural hamlet of Southside Virginia where I teach, we have international students from such (formerly) far-flung countries as Nepal, Ghana, Myanmar, and Bhutan. Having such a diverse student body makes obtaining a multi-perspective education ever more crucial, just as it should make it simultaneously easier. But just what is a “multi-perspective education”? To answer that query—and in particular to demonstrate why multiple perspectives are essential in education—one must address an even more fundamental question...

What is the purpose of education at any level? Is it to teach students what to think or rather how to think? Is it to introduce them to various subjects, culminating, in college and postgraduate or professional school, in specialized study of one particular subject? Is it to teach the basics (the “three R’s”) or to teach applied skills, such as use of computers and other ubiquitous technological aids? Is it to prepare students for a productive career or to prepare them to be contributing citizens? Is it to pass on a particular heritage (ethnic, cultural, religious, etc.), or to expose students to diverse customs and traditions? Is it to prepare students to pass standardized exams? Is it to develop the individual potential of each student, or to shape all students into a common mold? Is it to meet the needs of students, or to streamline the labor of teachers and administrators?

Western culture in general, and Western education in particular, is preoccupied with reductionism: taking things apart so that we can see how they function; reducing them to ever-smaller substituent bits. Western culture is, in addition, rife with Cartesian dualisms (sadly, often false dichotomies) that inexorably send us down one branching path or another, typically never to meet up with or intersect a previously taken path. As the opening quotation from Ralph Ellison illustrates, information is routinely and summarily heard, filed away, and forgotten.

The problem with this reductionist approach is that the world is, to put it mildly, a fairly complicated place, as are many of its parts—in fact, so complex that no one can ever hope to master more than one or two discrete parts. Hence our standard curriculum schools each student briefly and cursorily in many subjects—language, social studies, math, science, etc.—before more comprehensive education, eventually, in only one of them (Brady, 1991). After all, the common thinking goes, one can't be an expert in anything, precocious polymaths excepted, and it is better to know a lot about a little than a little about a lot of things. Once a student's interest is narrowed to science, for example, then there are several sciences to pick from. If one chooses biology, one must typically then select from deeper concentration in field biology, premedical studies, biotechnology, or another such specialty.

Taken to its extreme, this view supposes that knowledge comprises bits of information from various isolated disciplines. But is this a realistic depiction of reality? More to the point, is this a productive model for education? As Marion Brady (1989) notes, the things we try to understand in the real world—whether in business, politics, or any aspect of society—virtually never fall into neat little categories that correspond to the fields we are taught in school. To stretch my metaphor to the breaking point, there are no partial elephants in the real world, only whole elephants, and students should be trained—must be trained—to see the entire elephant.

It is true that the cumulative sum of human knowledge today is so vast that we are obliged to organize it into rough areas. Certainly society cannot function without a division of labor in which specialized workers attend to different tasks. It must be noted that a metadisciplinary emphasis can blur but not completely obliterate such boundaries between disciplines, and that such an emphasis better enables one to see significant differences between fields. As Wellek and Warren (1956) noted, differences are another kind of relationship important to liberal understanding; discrimination (in the sense of distinguishing between) is a useful intellectual exercise, as are drawing contrasts and comparisons. Still, our habit of “dichotomizing” (dividing everything into two camps, a la the ubiquitous claim of “two kinds of people”) belies the fact that what we often recognize as the sole two possibilities are endpoints of a continuum, extremes of a continuous range. Thus whereas familiar disciplines provide a handy framework with which to organize and operate our society, they don't, unfortunately, help people to see or study the whole of it. By no means are our familiar compartmentalized disciplines the simplest or best way to formulate an overall general education curriculum at any level, including (especially) honors programs and colleges.

In place of this exclusively reductionistic regime we need to integrate a holistic, synthetic outlook. There are two ways to achieve this. One approach is to begin with a topic, problem, or theme and bring various disciplines to bear on it, examining all sides from lenses of diverse disciplinary perspectives. A markedly different approach is not to examine disciplines head-on, but to treat them tangentially, by using them as sources of interconnected facts, ideas, and insights that help students to make sense of the world and their place in it. No matter which path we choose, we need not abandon or wholly revamp our Western science-based reductionist approach and replace it with New Age meditation or “touchy-feely” self-esteem workshops, but we must

abandon the outdated, simplistic assumption that “the traditional disciplines segment reality in the most useful way possible” (Brady, 1995).

No matter what one envisions as the principal purpose of education, it’s clear that what all students need is a way to stay engaged and interested. They need to distinguish what is important from what is trivial. They need to know where knowledge comes from—how we know what we do. They need a system that organizes their information, so that they can remember it for more than a few hours or days, and so that they can cope with new problems and situations rather than simply regurgitating facts. They need “a system that makes clear the systematically integrated, mutually supportive nature of knowledge” (Brady, 1989). Above all, we need a system that can instill these abilities in all students, regardless of their particular learning styles, their strengths and weaknesses, so that all students can understand and articulate—and appreciate—why education is so valuable for ourselves individually and for society as a whole.

The problem is that while each discipline does a job worth doing, collectively they leave undone a central mission. They don’t show students the whole—the complete elephant, if you will—of which the varied disciplines are random parts, scattered legs and ears and tails. The problem is that from elementary school onward, even in the majority of college honors courses, we do not teach students with such a system, because our collective curriculum is based on disparate disciplines that developed at different times, with vastly different approaches and methodologies, with different aims and goals, and with different terminologies and technologies. The traditional disciplines employ wholly different conceptual frameworks. Each ignores vast areas of significant knowledge and operates at a different level of generality (Brady, 1989, 1995).

Obviously, incongruent disciplines can’t easily be integrated, but even if they could we’d simply confuse even our best honors students with a hopelessly unmanageable mishmash of tangled bits and pieces. Can one analyze Shakespeare through a perspective of organic chemistry? How does Newtonian mechanics relate to *Brown v. Board of Education*? What does the life of Buddha or Lincoln say about global bond trading or the international monetary fund? This sort of ridiculously overweening reductionism—what philosopher Daniel Dennett terms “greedy reductionism” (Dennett, 1995), like comparing Keats and Shelley on the basis of molecular motion or analyzing court cases in terms of entropy fluctuations—is evidently nonsensical, yet it has led to much headshaking, hand-wringing, and general postmodern silliness as ill-advised intellectuals stew in their own disciplines and vainly attempt to acknowledge others (e.g., “How do we recast mathematics in the light of Women’s Studies or African-American Studies?”).

Education reformer and “supradisciplinary” proponent Marion Brady argues that we already have the educational system we need hard-wired into our brains. We use this natural “meta-organizer” all the time to understand and make sense of our experiences, as we take in simple bits of interrelated information (e.g., who, what, where, when, why), and we use it to retain this information so that it fits comfortably within a framework of all that we have previously learned, including many universal,

jargon-free elements that are “potentially relatable” (Brady, 1989). [This organizing propensity may be as natural as our opposite urge to divide.] The traditional and intuitive notion of education centers on transferring data on photosynthesis or grammar or quadratic equations from a teacher, book, computer, etc., in quantitative bits that can be poured or “crammed” directly into a student’s empty head (Kelly, 2002). Information transfer does teach, but it is clear that little specific knowledge is retained in this fashion. How many such facts do you recall from your high school or college courses? Can you remember even a fraction of what you were taught in trigonometry, anatomy, or philosophy? If you are like me, you are more likely to recall professors’ odd and interesting anecdotes than anything that would help you pass such a course again. In this sense, then, an enormous investment in time and energy, on the part of both teacher and student, yields minimal long-term return (Brady, 1989, 1996). The traditional disciplines—geology, economics, psychology, and so on—are legitimate academic fields of study, but they are not ideal for an overall educational curriculum, particularly in honors. They may be useful approaches in the scholarly search for “new” knowledge—and they do allow one’s mind to stretch and grow—but they are not so useful in disseminating “old” knowledge.

Instead of merely filling heads with facts from books, lectures, and documentaries, why not also learn by sorting information into broader, metadisciplinary domains, by noting patterns and relationships? Our students will surely be better served if we raise questions that require careful contemplation rather than simple reiteration or regurgitation, and if we conduct exercises that require contemplation rather than rote memorization. We can teach students better if we help them to see the holistic, systemic, emergent nature of knowledge, even if we must rebuild things that have been taken apart by the prevailing culture of reductionism. We must dispel the traditional approach of racing to cover material and excluding insightful yet tangential thoughts in the classroom. We must help students to forge connections and investigate relationships. We must take advantage of each individual’s natural curiosity, urge to explore, and desire to synthesize a coherent whole of experience.

CUTTING A MAGNET IN TWO

Students occasionally wonder what practical value, if any, their education holds. “What use will I ever have for calculus or sonnets?” What is generally overlooked in this analysis, however, is the fact that education (particularly in college) is not, and should not be, merely about committing facts to memory. It is about learning to see the world in new ways, from new perspectives—about breaking free of preconceived views, typically static and one-sided, and adopting a broader stance in which multiple views can be ascertained and accepted simultaneously. In this regard a metadisciplinary perspective is invaluable.

When considering any complex or controversial issue, I invariably admonish students to remember both sides of the proverbial coin. Even if one’s mind is firmly planted on one side of an issue, one should at the very least try to see and understand the other side. Put yourself in someone else’s position. Trying to imagine why other people hold a view opposite to yours is a valuable exercise that generally broadens,

sharpen, and strengthens one's own perspective even if it does not change it. One has virtually nothing to lose from such an exercise and more than likely much to gain.

Sadly, in modern public discourse people rarely admit to recognizing alternative points of view, let alone announcing they are conflicted as to which view is best. It is easy to imagine such a response—"I agree with those who say X, but at the same time I see the strengths of those who argue Y"—as a sign of intelligence and open-mindedness. Possessing an ability to understand and hold two positions at once, and having a broad metadisciplinary background from which one has been exposed to widely varying points of view, can only render a person wiser and more sensible. Admitting that one sees, at one time, more than one or even two sides of an issue, rather than simply seeing each issue as a concrete, cut-and-dried, black-versus-white thing, is a sure sign of intellectual development.

These days, it seems the third worst thing for any leader to do is to compromise his or her position and meet someone else "halfway." Politicians are expected to stick to their guns and stonewall the opposition, even if it ultimately means achieving none of their initial goals. The second worst thing in politics is for a person to change his or her mind. One is simply not allowed to do that, for it is exposed as the ultimate sign of weakness, even worse than compromise, concession, and conciliation. "You can't say that or vote that way—twenty years ago you held a contrary position!" Never mind that a person may have grown and matured, that she may have listened and read and generally kept an open mind about the issue, preferring to hear new arguments even as her mind was made up. Once you express a position in politics, it can be a career-ending kiss of death to admit you have reconsidered that position. Never "flip flop." And if you ever switched political parties, that must be kept secret. But the absolute worst sin in politics must be indecision. Make up your mind right away—don't bother taking time to listen to or think about other views. Only a nebby wimp gets a second opinion. He who hesitates is lost.

This is not to say that there aren't times when one should have a clear and ready monolithic view. I am not advocating utter relativism. Nor do I mean to imply that wishy-washy, namby-pamby indecision is the goal. Sticking to one's principles is paramount. However, self-reflection and internal debate are among the thinker's oldest, simplest and most useful tools. Showing "backbone" is important, and we need not frequently change our minds, but we ought never to close them. It is important to have convictions, but even the firmest view must be revised in the light of new evidence.

Perhaps the analogy of a two-sided coin is unsuitable, as most arguments and issues better resemble multifaceted gemstones, with sides glinting off in all directions. Still, there are always at least two sides, and I can't help but try to envision and embrace them both as I mull over any topic. As a biologist, I like to say that we have bilateral symmetry to create backup systems and make our lives easier. One kidney stops working? Well, fortunately, we have a backup. That may be a reasonable scientific view, but it is also fair to say that having two hands enables us to weigh, literally, two objects—to balance, figuratively, competing points of view.

For example, I argued earlier in this paper that the world is getting "smaller," but that is a grossly simplified way of addressing the issue. Is the world more diverse

today or more unified? What about your campus? For every influence that increases the diversity of perspectives, there appears a counteracting force that decreases it. On the one hand, more college students are studying abroad than ever before; on the other hand, today's students are more likely to eat at a McDonald's overseas than students a generation ago. On the one hand, there are more international students at American colleges today; on the other hand, they may be as familiar with Coca-Cola, Levi's jeans, and reality TV shows as American youth, and they may speak English as well as their native language. Even U.S. children may be more likely to live in multicultural neighborhoods, but there may be more peer pressure than ever to conform to expectations—to dress and act a certain unified way. On the one hand, children today “grow up faster” than ever due to the pervasive modern culture of TV, movies, videogames, and so on, but on the other hand, they may be more narrowly specialized than ever, as coaches and parents counsel them to specialize in one sport or activity rather than partaking in a variety of pursuits. [More dualism—that's the Western influence again! Perhaps this is why many Eastern deities, such as Shiva, are depicted with more than two hands, so they can balance more than two objects, or points of view, simultaneously.] The bottom line is that few things are as simple as they seem. Most are like our elephant, with new aspects that emerge upon closer examination. Just as every classroom benefits from dialogue, discussion, and debate, every single person's mind benefits likewise from an ongoing internal dialogue.

This holistic “debate within” is similar to what happens within any magnet, which simultaneously holds opposing polar forces. As humanistic psychologist Abraham Maslow pointed out, one can't cut a magnet in two (Maslow, 1973). Every magnet is a dipole, having both a north and a south pole. Take a simple bar or horseshoe magnet and try to cut or otherwise break it in two. You'll end up with two pieces, but each fragment is a wholly new dipole. There is no such thing as a unipolar magnet—each is a holistic entity, combining different strengths, indeed polar opposites, into a unified whole. As with our archetypal elephant, and with an ideal metadisciplinary curriculum, unity arises from diversity. This is of course the meaning of the Latin motto *E pluribus Unum*: “Out of many, one.” Unfortunately, even when our stereotypical politician recognizes multiple points of view, it's generally in an “us” versus “them,” black/white, wrong/right scenario, leading to bickering, bipartisan debate. Seldom are subtle nuances and shades of gray recognized; the focus is customarily on what separates us rather than (as with a magnet) what unites us. Like a magnet, a metadisciplinary perspective focuses on holistic unity arising from various diverging (often competing) views.

In his landmark study on the intellectual development of college students, William Perry (1970) observed that students initially have a very low tolerance for ambiguity. According to his work, most freshmen begin with a simplistic, absolute view of the world; only with considerable time and experience do they recognize the contingent, contextual, relative nature of knowledge. Only then will they acknowledge there are multiple perspectives to a given problem or topic, and eventually accept ambiguity. As noted, modern politicians seem to be rewarded, at least in the United States, for holding rigid positions. They seem invariably to be soundly and roundly criticized for espousing nuanced, balanced views instead. However, there is

no reason why educators should not foster in their students the latter approach. Simplistic statements play well in sound bites or on bumper stickers but bear little connection with or application to the real world. Again, an honors curriculum is the ideal vehicle with which to address this concern and hasten students' development away from a concrete worldview toward a more holistic—and realistic—standpoint. Ironic though it seems, “being of two minds”—having a “divided” or “split” opinion—can in fact enable one to have a more unified view.

WHY TOLERANCE IS A DIRTY WORD

One of the great benefits of a metadisciplinary curriculum is that it fosters a broad, holistic, integrative fusion of viewpoints—a scholastic diversity of ideas—while at the same time it promotes a social diversity of peoples. This is of course one of the most pressing issues on all college campuses today, where students of many diverse backgrounds are enrolled but rarely if ever sit together at the same lunch table (Moody, 2001). A multiple-perspective, metadisciplinary view cultivates harmony and trust, but ironically, it should not promote what could be called mere tolerance. For as my colleague Karen Williams is fond of noting, tolerance is truly a dirty word.

Despite the high regard in which it is often held, tolerance is in fact—upon closer examination—not a noble ideal and should not be the goal of any education, metadisciplinary or otherwise (Cooney et al., 1999; Williams and Okintunde, 2000).

The root word of tolerance is tolerate, which means, in essence: “I’ll put up with you, even though I may not like you. I will recognize and accept your opinion, even if I don’t care for it at all.” Tolerance thus commonly relates to begrudging acceptance—to put up with, allow, or endure without putting up opposition—rather than mutual respect, which is what is truly needed. Tolerance stifles dialogue rather than fostering it. Instead of seeking consensus, tolerance teaches us to be quiet and patiently let everyone else have his say, even though it matters not to us. Tolerance favors equal time for opposing viewpoints, not equal validity. Tolerance, in short, allows us to “put up” with each other but ultimately keeps us from dealing with each other and sorting out our differences.

We don’t all need to agree on everything, and the truth is we can’t agree on everything, but we can treat everyone, even those with whom we share little in common, with mutual respect and dignity. Rather than seeking to instill an abiding tolerance in our students, we should entreat them instead to seek relationships and understandings founded upon partnership: friendship, sharing, trust. This is not always possible, to be sure, but it is certainly better to seek mutual trust than mere tolerance.

Multiple perspectives might be seen as leading to conflict. [“Strike three!” “You call that a strike? What, are you blind?” “You’re out!” “No, he’s safe!”] However, multiple perspectives can just as easily bring about collaboration and cooperation. They can help us build bridges, not burn them. To return to the parable of the blind men and the elephant, multiple perspectives help us “see” more, and more clearly. This applies equally, of course, to those who are “blinded” by prejudice, or whose vision is at least curtailed or clouded by it.

Naturally, language makes a huge difference. What we choose to call someone, especially when we do not share their viewpoint, is often the factor that determines if our perspectives initiate accord or discord. Positions, and whole debates, can be framed in differing terms depending on the vocabulary one uses. For example, one side says “prolife” versus “proabortion,” another says “antiabortion” versus “pro-choice.” Similarly, consider the difference between “man and wife” versus “husband and wife.”

“Communicating Common Ground” is a comprehensive national service-learning initiative, jointly sponsored by the National Communication Association, the American Association for Higher Education, the Southern Poverty Law Center, and Campus Compact, that celebrates diversity and combats prejudice across the United States (Deal et al., 2003). More than thirty colleges and community groups have CCG programs. My college’s team, comprising volunteer faculty, students, and community members, seeks to provide a multicultural, multi-perspective education for students at a local public middle school where, as in many settings, “minority” students do not interact freely or easily with the “majority” population. The aim is not to broker an uneasy truce between differing parties—each situated on separate grounds—so that they will merely tolerate each other, but rather to bridge divides and thereby connect multiple groups, social, racial, ethnic, etc., into one. A surefire strategy is to begin by focusing not on differences but rather on similarities, to find mutual interests and shared qualities that are likely, in the end, to be more important than any minor differences. There’s no one else exactly like you, is there? The things that make you unique are important, but not as much as the things that unite us. And what works for people, individually and collectively, can also work for disciplines of study.

As a metadisciplinary perspective enables one to supersede disciplines, a multidisciplinary perspective allows one to connect one discipline to another, and to ford the rifts that often isolate disparate fields. In today’s world, such gulfs may be technological or even terminological. For example, the word “normal” means “usual” in most situations, but not in various specialized fields. In physics and mathematics “normal” means perpendicular. In biology it means “natural.” To a psychologist it means average or typical, and conjures an image of a bell-shaped curve (a “normal” distribution of data points). To a chemist “normal” describes a straight, unbranched chain of atoms or standardized solution by volume and solute weight. To a well-rounded mind fully educated in the liberal arts the correct definition, of course, should be “all of the above.”

A few regrettable teachers feel their job is to remold the minds of students, to impart their own views so to ensure that when students leave, they have been inculcated in the wise ways of their instructor—told what to believe, if not why. But we shouldn’t expect young people to believe and feel the same way about everything their parents or teachers do, and we certainly shouldn’t see this as a goal of education. Teaching involves both give and take; the best teachers learn a great deal from their charges. To be entrusted with the custody of young minds is an awesome responsibility. To fail to take something from these minds is nearly as great a catastrophe as to fail to teach our students how to use those minds.

Indeed, it is vitally important to spend time speaking to others with whom we disagree, for this is how one genuinely learns. In this way we not only learn about others' ideas and opinions, with which we may strongly disagree, but this also helps us to crystallize and articulate more clearly our own views. We learn much more about ourselves and our worldviews when speaking with others with whom we deeply disagree.

What if a student complains that tolerance itself is too much to ask for, that he or she not only rejects, for example, the idea of homosexual marriage, but that his or her religion condemns it out of hand? How can two such opposing viewpoints seek conciliation if there is not even mutual tolerance, let alone mutual respect? The answer, again, is that we don't need to agree with everyone on everything, and we shouldn't expect to agree with everyone on everything—the world would be a boring place indeed if everyone thought the same way. But we do need to live with everyone else. Humans are the most social of species; we cannot live alone. Just as multiple perspectives enable us to live fuller, more rewarding lives for ourselves, they better enable us to interrelate with and contribute to the community of citizens to which we all belong. Pigeonholing is lazy thinking, whether we are categorizing and isolating (often marginalizing) people or ideas alike.

ON UNCOMFORTABLE EDUCATION, AND WHY PAIN IS A GOOD THING

Despite the mantra that every coach is fond of yelling, “No pain, no gain,” it is possible to gain something without pain. However, this is not to say that pain is necessarily a bad thing. Indeed, pain is a good thing—it can save you, as it indicates that something is wrong. Pain can tell you that your appendix is about to burst, for example, or that your heart is not beating properly. It can signal infection or tissue damage. Were it not for this pain, which warns us to seek medical treatment, we could surely die. Just as fear can be beneficial, by preventing us from entering a dangerous situation, pain, or at the very least discomfort, sends a helpful warning that we must heed. It is important not to confuse the pain, or the symptoms, with the root problem (illness or injury) itself. In both physiological and psychological contexts, pain tells us something is wrong. “Stop! Don't do that any more! Get help now!” Only masochists would argue that pain is truly desirable in and of itself, but to the extent that it warns us of discomfort, pain provides a very valuable service. In short, pain can be a good thing.

So what does this have to do with college honors education, and with a metadisciplinary perspective in particular? Simply put, education need not be—perhaps should not be—comfortable. Students need to see new things. We as educators try to make things easy, often too easy, for our students. We often focus too much on making things simple for and relevant to our students. Rather than simply bringing something to them, we need to bring them to it.

One might cynically aver that modern Western society revolves around comfort and complacency. We worship and promote all things consumer and capitalistic, the lowest common denominator, the vulgar and crude, in sum, all things non-intellectual

and non-spiritual. This may be fine for Hollywood or Madison Avenue, but it is hardly the goal of any educational institution, where the object is to raise, not lower, the level of discourse. Only by forcing students to confront and reconsider their beliefs—most of which they have held for years, and many of which they have never really thought about since they were acquired from parents, peers, and television figures—can we get them to see other views, other values, and other “hard” truths that are neither intuitive, straightforward, nor untroubling.

What’s wrong with a comfortable education? Simply put, if a group of people are just sitting, nodding, agreeing with everything they hear, then they are not learning anything. As the saying goes, “If there are two of us in a room, and we both agree on everything, then one of us is redundant.”

Many practical benefits derive from an “uncomfortable” education. At some colleges entering students are required to choose a major; they may even apply, before matriculating, for a specific major. This no doubt pleases parents who see a college degree as a ticket to a lucrative (or even any) career, but sadly it ensures that students will have a very narrow education, particularly if students enter a preprofessional field rather than one of the traditional liberal arts or sciences. Of course, most graduates learn that job descriptions and duties don’t fit neatly into the traditional disciplines studied in college. Studies have shown that most top business leaders do not hold undergraduate degrees in business; instead a majority earn liberal arts degrees in such majors as English, psychology, religion, or chemistry (Camenson et al., 1997). At many liberal arts institutions, including my own, at least half of a student’s credit hours are taken to satisfy core distribution requirements. This is not to say such students don’t complete a specialized curriculum in a major, but rather that non-major “electives” fulfill basic and important subject areas, providing a solid foundation in which to ground one’s accumulated knowledge. This may be the old model, “a little bit of everything,” but if we can succeed in connecting all areas, a truly coherent, systemic metadisciplinary education emerges. Once again, unity arises from diversity.

In a very general sense, there are three things that everyone learns, that everyone has to learn, with a liberal arts college education. The first is what the world is like—how the world works—scientifically, socioeconomically, politically, historically, culturally, and so on. The second thing one must learn is what one’s place in that world will be; not merely how one earns a paycheck, but what one’s worldview will be philosophically, spiritually, and socially. Finally, the third thing one gains from a liberal arts education is a suite of skills—critical thinking, reading, writing, etc.—that better enables one to see and deal with the world, and to ensure the attainment of one’s chosen place in it. Much of this learning necessarily occurs outside the classroom. The true value of a metadisciplinary liberal arts honors education is that it offers the clearest, broadest view of the world and the most direct approach to finding one’s place in it.

Another way to assess the value of a metadisciplinary education is to see the weaknesses of a narrow education. Consider first that the average college student changes majors at least once, if not several times, so that choosing a college based on a particular major is always a bad idea, particularly if an institution is not strong in

other fields as well. Second, bear in mind that the average worker today, unlike that of a generation or two ago, changes careers several times during his lifetime, even if he stays with the same employer, which is unlikely. Thus training for a single specific career, especially at the undergraduate level, is typically an unwise plan. Finally, consider that many of today's hottest jobs (information technology, biotechnology, etc.) are in fields that couldn't be taught in college fifteen years ago because these fields didn't yet exist! By the same token it is grossly unrealistic to expect to prepare students today for tomorrow's fields, which are, if existent at all, still in their infancy. Hindsight may be 20/20, but even the best foresight is seldom so clear. The bottom line, then, is that the multiple perspectives offered by a broad metadisciplinary education typically provide the safest bet for long-term job security. Instead of training narrowly for a specific job, a multidisciplinary education provides one with a collection of highly useful and marketable skills: critical and creative thinking; solid writing, reading, public speaking, and other communication skills; understanding of different cultures and traditions; basic background in history, literature, and other essential areas of study that prepare one for any career. This is a simple message that most faculty know all too well, but one that more administrators, parents, and students and prospective students need to hear. A metadisciplinary curriculum does indeed prepare one for a career, but it goes a step better, preparing students for *any and all careers* they will encounter.

When asked why they are in college, students give a variety of responses. Most will say they are there to earn a degree or to get a job. Many will say they were expected to attend college after high school. Some might say, perhaps jokingly, perhaps not, that they are there to have fun and attend parties. The truth in most cases is probably a combination of these reasons. However, few college students will likely say that they are beginning, or continuing, a lifelong process of real-world, whole-life learning. Yet this is precisely what a metadisciplinary perspective entails.

I began this essay with a series of analogies for the metaphorical journey that students take, such as climbing a mountain. If we wish to graduate students as fully-fledged, independently capable mountain climbers, surely we do them no good by carrying them to the top of the peak by ourselves. It may be a tough, tiring climb to the top—they may see that the slopes are littered with the bodies of those who did not survive the journey to graduation—and when they reach it, they may see a vast expanse of many more mountains to be surmounted in the course of their personal and professional lifetimes. As Pope (1711) noted, "Hills peep o'er hills, and Alps on Alps arise." Still, at least our graduates will know they can climb such mountains on their own.

SOME PRACTICAL ADVICE ON ELEPHANT OBSERVATION

Diversity should be a goal on both sides of every classroom, not only for students but also for faculty. This doesn't simply mean having a diverse faculty body—it means bringing multiple viewpoints, principally by having multiple instructors, into the same classroom. Hampden-Sydney's introductory honors courses are meta- or

interdisciplinary seminars taught by at least two and sometimes three instructors from different college “divisions” (humanities, social sciences, natural sciences). These special topics courses vary widely in content, but our honors students always see first-hand how scholars in different fields tackle a particular subject, whether it be bioethics, science fiction, critical thinking, or another of dozens of topics taught in the past two decades. [We offer three such seminars per year.] This approach brings obvious staffing concerns (it is hard enough to find one person to teach a course), but all involved—students, faculty, and administration—agree that the payoff is certainly worth the cost. [Our upper-level honors courses are normally taught by one instructor but must focus on an interdisciplinary topic. For more on interdisciplinary honors curricula, see Schuman (1989).]

Even if a course has a single instructor, guest speakers not only bring a welcome change from the student perspective but also introduce new viewpoints to the classroom. Even in a traditional “lecture”-style class, encourage or require student participation and collaboration. Don’t simply permit students to make comments. Force them to contribute. Help them to take charge of the classroom environment. Make their education active, not passive. Remember too that since honors education often involves “real-life” residential learning (Knobel, 2002), a “classroom” need not be delimited by four walls.

There are occasions, to be sure, when additional perspectives offer not a clearer but rather a cloudier view. For instance, at virtually any time diet books comprise roughly a third of the list of New York Times nonfiction bestsellers. Dozens of such diet books appear each year. Not all become bestsellers, but clearly there is much money to be made in this market. Yet if any one of these diet books offered genuinely sage advice there should never be a need for another such book to be published. Obviously, this is not the case. There may or may not be a kernel of truth to each book’s view, but in fact all this multitude of similar books is likely to do, besides raise oodles of cash for joyful writers and publishers, is confuse the general public. Surely everyone who writes (and most everyone who reads) such a diet book recognizes the truth of the simple declaration that “To lose fat one must burn more calories than one ingests; therefore, eat better and exercise more.” Such a statement would seem to be self-evident. Thus if people were truly serious about losing weight there would be no need for this profusion of competing advice books. One lesson: While it (almost) never hurts to listen to more opinions, it sometimes doesn’t help. Another: A comprehensive, all-encompassing view helps one to see the forest for the trees.

Again, an educator’s job is not to make things too easy for students. Look up the word “responsibility” in any dictionary and you’ll find multiple meanings. One refers to a duty or obligation or burden—something that one must do such as take out the trash, feed the cat, do one’s homework, study for the test, etc, and for which one is held accountable or answerable. Another definition of responsibility refers to the character trait of accountability, reliability, trustworthiness, and conscientiousness. This is a clear manifestation of maturity: being able to act on one’s own and understanding and accepting the penalties for failure to do so. There is an unmistakable causal connection between these two meanings. Accepting and fulfilling responsibilities makes one a responsible person. The more broadly varied the responsibilities,

the more likely that one will become responsible. A metadisciplinary education better enables students to mature and prepare for the world outside college.

Beginning at a very young age, today's students are schooled at home, and just about everywhere else, by television. This is not an entirely bad thing. Children pick up trivial tidbits and esoteric factoid minutiae, snippets of geography and history, morsels of popular culture. However, this light fare often leaves them starved for a more substantial diet replete with intellectual, moral, and spiritual fulfillment. The word intellectual is not necessarily synonymous with academic, for students learn a lot outside of class, and spirituality should not be solely equated with religion. Nonetheless, most students, raised on a steady diet of pop ephemera and instant gratification, are typically hungry for something more filling, even if they won't readily admit it. One thing students need is a broader framework upon which to hang all their apparently disconnected bits knowledge. This is precisely what a metadisciplinary education provides.

In my field, biology, as in other disciplines, there is no longer a single conference or journal that "covers" the entire discipline, as there was a century ago; indeed, there are thousands of specialized splinter groups and publications. Sadly, it is impossible to learn everything there is to know about biology today. But a biologist can always communicate with and seek the input of others, so as to build the most complete, comprehensive, coherent, concise picture possible. In other words, our metaphorical elephant is too large for anyone to examine in its entirety, but via metadisciplinary, multiperspective study anyone can learn of every aspect of the whole animal.

Further, I honestly cannot teach biology without making constant reference to economics, public policy and government, psychology, history, literature, philosophy, religion, art, modern and classical languages, especially Greek and Latin, and so on, not to mention physics, chemistry, and mathematics. As a firm believer in metadisciplinary education, I know that all these subjects are intimately related. When I discuss food webs, nutrient cycling, or energy transfer in ecosystems I can't help but point out myriad implications for human society. Not only do I feel a need to share this intricate web of interconnected, interwoven fields with students, but I know I would do them a grave disservice as (potentially) future biologists and (certainly) future citizens by depriving them of this knowledge. No matter what they do upon graduation from college, they will need to know about the complex ramifications of genetic testing, of environmental impact, and of so much more.

The challenge is that most textbooks are written by specialists, and many of the previous teachers our students have encountered have been taught to focus narrowly on their subjects—or mandated to prepare their students for very specific standardized tests—at the expense of such multi- or metadisciplinary perspectives. Never mind that science taught without a healthy helping of history, philosophy, and literature is obscenely sterile and mind-numbingly dull; I would go so far as to say that one cannot learn science independently of such subjects. This is especially significant since many science students (particularly in introductory-level courses) will not become scientists but will instead pursue careers in business, law, service, entertainment, etc.

At the same time, however, I would passionately argue that humanities and social science courses must involve and at least make reference to science, this not despite the obvious fact that such disparate fields of study employ strikingly different research methodologies, but indeed because of it. Close associations, correlations, and connections, causal, historical, linguistic, political, economic, and so on, exist between all fields of study. Our world is one great big place—a world-sized elephant, if you will—and to do it justice we must not see each part as a disconnected bit, but rather as a piece of the whole. When my students say, “Can I see that? Can I see the elephant?,” I know what they really mean. They don’t merely want to observe it from a distance. They want to pick it up, turn it all around, and explore every nook and cranny of it, every bump and protuberance—something they have learned to do from infancy. That may not be the only way to learn, but all our life experience surely teaches that it is the best way.

Teach the virtues of multiple perspectives by example. Be a positive role model. Don’t be indecisive or ambiguous, but make clear that the world is not fashioned from simple black and white hues. Vow to seek, hear, and consider as many different points of view as you can on any and every subject. Explain to students that the goal is not to be pulled in multiple directions—one can only walk, at one time, in one direction—but one can acknowledge that there are other legitimate paths. As the opening quotation from Ralph Ellison attests, I strive neither to forget nor to file away—as distinct, disparate threads—any of the views I hear. Rather, I endeavor to collect as many perspectives as possible, and then combine them into one coherent if occasionally unwieldy assemblage. Is this difficult? Is this exasperating? Is this often counterintuitive? Yes, yes, and yes. But the end result, both intellectually and practically, is knowing that while truth is seldom pretty (just as life is seldom fair), one can, if one tries hard enough, see as much truth at one time as possible. Elephants are big indeed, but no one expects to master them quickly. It takes a lifetime to do them justice, but I’m not worried: a lifetime is what it will take. A truly metadisciplinary college experience is not the end of an education—it’s just the beginning.

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The author may be contacted at

awerth@hsc.edu

