

# The TLU Reader

2013-2014 Edition

Editors  
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TEXAS LUTHERAN  
UNIVERSITY

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This book is dedicated to

# LINDA ANN HARTON CLARK

Lover of books, family, friends, students, learning, and TLU



November 13, 1943 – March 23, 2009

Photo by Sally Carroll-Ricks



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## PREFACE

Phil Ruge-Jones

This book was written to initiate freshmen into the academic ethos and scholarly habits of our community of faith and learning at Texas Lutheran University. The chapters are each written by faculty and staff of TLU and are seasoned with quotations from students who have made this place their home. The themes of the chapters represent some of the core values implicit in our way of learning.

The introduction and chapters 1 through 4 explore what education means in a place like this. A reading from Plato that students have read as part of our Freshman Experience course from its inception holds an honored place among contemporary voices. Chapters 5 through 7 offer personal narratives of what becoming an educated person meant for specific members of our community. They make different arguments about what it means to become educated in light of their own experiences. These testimonies are followed by explorations of core skills that TLU instills in our students—careful writing in chapter 8, quantitative thinking in chapter 9, theological exploring in chapter 10, healthy living in chapter 11, and artistic envisioning in chapter 12—with explanations of the essential contributions they make to our vocations. Each of these chapters deals with skills grounded in particular disciplines but necessary for life in its fullness no matter the major one may declare. Chapters 13 through 16 deal with various opportunities and challenges that enrich education across the disciplines. The first two involve experiences that our alums often rank among the most memorable dimensions of their learning. The other two help us address problems within ourselves and in the world before us in ways that will bring about positive change. TLU has always sought to encourage its community members to lead ethical lives in whatever they do. Chapters 17 through 21 address ethical deliberation and practice. The first provides a broad overview of ethical theory and the others explore those modes of ethical thought within particular disciplinary areas. Chapter 22 is a welcome discussion of the problems associated with sustainability. Chapter 23 shows how the steps taken in a student's time at TLU are but the first steps on a lifelong journey. Linda Clark, a beloved member of the community who was tragically killed in a car accident on March 23, 2009, models for us this kind of well-lived life.

Chapters 24-26 are this year's Krost readings. Their authors, Tony Wagner and Naomi Shihab Nye, will be visiting us this fall to discuss their perspectives on the finer points of innovation.

We have done something uncommon for collected essays in a reader. We have asked writers to use the documentation style that they are most likely to use in their own scholarly work. What we have sacrificed in terms of uniformity allows us to expose the readers to the many ways that our disciplines make explicit our indebtedness to the larger community of thinkers. We trust that you will receive some gift in this.

I wish to thank our provost at the time this book was proposed, Ed Thompson. The authors have graciously given of their time to share their wisdom with us and have stuck to the timelines that this project required. Beth Barry provided continual encouragement and feedback to the authors as they got into the writing process and she did this in a time when many other concerns were calling out her name. Mark Gilbertson, Sally Cook, and Martha Rinn graciously agreed to proof the final copies. Lana Urbanek provided knowledge, support, and enthusiasm for this project as one who is thoroughly at home in the world of books. And finally, I thank my family who allowed me to disappear into my computer as often as this project demanded.

While this book is written with freshmen in mind, I hope that all of TLU's friends will find it refreshing as they read its pages.

# INTRODUCTION

Beth Barry

At last. You've arrived at the first page in the next chapter of your life. Congratulations and welcome to TLU! We've been expecting you. In many ways we've been preparing for you since before you were born, and now that you're here, we can begin. First, take a deep breath and look around. You made it to college. Wow! Maybe you haven't allowed yourself to appreciate what an achievement this truly is. You are a student at Texas Lutheran University. Go ahead and take a moment...

Okay, times up. Yes, graduating from high school and getting into college were achievements you can be proud of, but it won't do you any good sitting around daydreaming about what an extraordinary person you were in high school. Now there's work to be done—books to be read, discussions to be had, problems to be solved, projects to be created, discoveries to be made, and papers to be written. We'll be alongside you, to guide, encourage, coach, correct, and especially to inspire, but the actual work is yours to complete. What you hold in your hands is a primer to launch you on your journey from point A (this class) to point Z (graduation). It is an introduction to the liberal arts and to how we do the liberal arts here at TLU. Whether you end up an engineer or an economist, a coach or a chemist, a musician or a math teacher, we believe that your life will be richly served by a working knowledge of a wide variety of subjects. What will all this learning look like? And what will it take from you? Each of you will discover different answers to these questions, and each chapter of this book will add something to your quest.

## But First, the Bad News

College is hard. They've been warning you about this for years. In fact, if you had a dollar for every time someone wagged a finger in your face and said, "You won't get away with that in college," you probably could've paid your tuition in cash. In the coming weeks, you will definitely begin to see firsthand what all these finger wagers were talking about, the critical differences between high school and college. Perhaps at no other time in your life will you be expected to handle so many fundamental lifestyle changes simultaneously, especially those of you who will be working to help pay the bills. This may explain why "only about half of students who enroll in four-year colleges will earn a bachelor's degree within six years."<sup>1</sup> College *is* as difficult as they say, but that doesn't mean you're doomed.

Mark Bauerlein thinks part of the problem arises from the demands that our digital gadgets make on us: "The bedroom [or, in your case, dorm room] is no longer a sanctuary, it's a command center. E-mails, text messages, blog postings and

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<sup>1</sup> "College Access." Alliance for Excellent Education. [http://all4ed.org/about\\_the\\_crisis/students/college\\_access](http://all4ed.org/about_the_crisis/students/college_access).

comments, phone calls, tweets, feeds, photos, and songs pour in every evening, and if [students] don't respond, they fall behind."<sup>2</sup> We might be tempted to think it is Bauerlein who has fallen behind. When the technology train left the station, this guy refused to jump on. Unfortunately for us, recent studies seem to support his suspicions. *The International Herald Tribune* reports, "While many people say multitasking makes them more productive, research shows otherwise. Heavy multitaskers actually have more trouble focusing and shutting out irrelevant information, scientists say, and they experience more stress."<sup>3</sup> This means that paying attention to when, where, why and how you use technology could mean the difference between success and failure here.

### And Now, Some Good News

College is worth the investment. The Alliance for Excellence in Education reports that "almost 85 percent of current jobs and 90 percent of new jobs...will require workers with at least some postsecondary education.<sup>4</sup> A bachelor's degree will likely earn you double the wages of those with only a high school diploma, according to the U.S. Census Bureau.<sup>5</sup> Here at TLU, we are especially attuned to the news that "college also prepares you for a well-rounded and healthful life (e.g., college grads smoke less, exercise more, and are twice as likely to engage in volunteer work)."<sup>6</sup> Indeed, one of the major themes of this book is that education isn't only about what's happening up inside your head or to the benefit of your wallet. Rather, education is one of the key ingredients in a productive and fulfilling life of leadership and service to others.

### What Can You Do to Succeed?

You already know that meeting the challenges and making good on your investment will take work. Let's start with the cornerstone of your success, college-level reading. As you know, you'll be doing lots of it.

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<sup>2</sup> Bauerlein, Mark. *The Dumbest Generation: How the Digital Age Stupifies Young Americans and Jeopardizes our Future (Or, Don't Trust Anyone Under 30)*. (New York: Tarcher/Penguin, 2008), x.

<sup>3</sup> Richtel, Matt. "Your Brain on Computers: Attached to Technology and Paying the Price." (*New York Times*, June 6, 2010). <http://www.nytimes.com/2010/06/07/technology/07brain.html>.

<sup>4</sup> "College Access." Alliance for Excellent Education. [http://www.all4ed.org/about\\_the\\_crisis/students/college\\_access](http://www.all4ed.org/about_the_crisis/students/college_access).

<sup>5</sup> Holtom, Brooks C. "College is Worth the Cost." Editorial, *Bloomberg Businessweek*, March 2010. [http://www.businessweek.com/debateroom/archives/2010/03/college\\_is\\_worth\\_the\\_cost.html](http://www.businessweek.com/debateroom/archives/2010/03/college_is_worth_the_cost.html).

<sup>6</sup> Ibid.

Consider this analogy:

A spacecraft lands on the banks of the Guadalupe River, and two aliens emerge from the little saucer to stand at the edge of the water. They've been sent to Earth to gather data, probably a homework assignment for their alien professor. These aliens have never seen a river, so they're fascinated and they take note of everything—the way the sun glints off the surface, the way the current moves slowly in one place but faster in another. Occasionally, they see a fish break through from below or a snake skim across the surface of the water. Time's short and they need to return to the mother ship to file their report, so they leave, thinking they know all there is to know about the Guadalupe River. But you and I know they haven't come close. They never even got wet.

College-level reading is like this. Each book is a landscape alien to the reader, complete with its own language, history and customs. If you read superficially, just skimming along the surface, you will miss the wealth of information in the depths. You have to get into the text the way you would wade into a river, and you have to be ready to swim.

### How to Read a College-Level Text (aka, taking the “alien in the river” analogy too far)<sup>7</sup>

1. Be active. Just as you would splash around or swim down to the river bottom and take time to notice the small jagged stone that is shaped like a heart, active readers are awake and alive to what the text is telling them. They agree, disagree, and ask questions. Good readers are in dialogue with the text. Be sure to capture your side of this dialogue in your notes or in the margins of your books. These notes will prove to be invaluable when it comes time to take an exam or write a paper.
2. Make adjustments. Mix it up a bit. Swim, float, sit in the shallows and dig into the sand. When you read, vary your speed to suit your purpose. Take your cues from the chapter titles and headings. In time, you will learn when to skim and when to slow down and take a closer look, and especially when to read an important passage twice. Just as every river has its own geography, so too with books. Switch up your thinking to suit the subject you are reading: genetics, American literature, accounting, music theory—with practice, you will learn to recognize that each academic discipline has its own depths and currents.
3. Persevere despite difficulty. Hang on to your inner tube. When the water gets deep, you'll need a flotation device to keep you from drowning. Don't let unfamiliar words overwhelm you, and don't be intimidated by references you don't understand. Anyone who has watched the Weather Channel knows that

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<sup>7</sup> These suggestions are informed by “Helping Students Read Difficult Texts,” found in *Engaging Ideas: The Professor's Guide to Integrating Writing, Critical Thinking and Active Learning in the Classroom* by John C. Bean (San Francisco: Jossey-Bass, 1996).

rising waters demand our humility. Keep a good dictionary close by and use it often. When you don't understand the historical context or specific allusion within a text, don't give up so easily. Instead, take your questions with you to your next class meeting. Your brave question can be a lifesaver for everyone in the room.

You thought you learned to read in elementary school, but that was only the beginning. Here in college we will fine-tune your skills to make you an expert traveler to any text you may encounter in your future.

## How to Ask the Right Questions as You Read

We've established the following reading goals for this course:

*Reading:* Reading reflects the ability to employ a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts in terms of the arguments they present.

Here's what you should be able to do by the time you finish the requirements for this course:

- ❖ **Context:** *Students can draw basic inferences about context in a given text.*
- ❖ **Voices & Perspectives:** *Students can discern different voices from other perspectives recognized by the text. Students demonstrate an ability to read as though in conversation with the author.*
- ❖ **Argument:** *Students can identify the specific components of an argument within a text including a) the facts or grounds upon which an argument was built, b) claims that are made based on those grounds, and c) the values that connect the grounds with the claims.*
- ❖ **Thesis:** *Students can correctly identify and describe the central argument of a text.*

Let's practice by asking questions related to what I've written in this introduction so far.

*Context:* In what ways does this introduction motivate you? What is its basic purpose? Within what larger context is it situated? What is the target audience?

*Voices & Perspectives:* What larger conversation might this text be a part of? What different points of view are represented or suggested? How might you respond?

*Argument:* What conflicts are represented or suggested within the text? What support is offered? What values inform these claims? In other words, what do I assume you care about regarding the subject matter being presented?

*Thesis:* What is the text's central claim (main argument)?

As you can see, there's much more to reading than just hearing your mind say the words that you see on this page. Reading at a higher level involves seeing a text from many different angles. With practice, this will become second-nature to you.

## More Unsolicited Advice

Between reading new and exciting books (starting with the one you hold in your hands), keep the big picture in mind. That four-year degree is not at all visible on today's horizon. Today your goal is to make a series of small, seemingly insignificant choices that will build upon the progress you've made and take you one step further on the road to graduation. Here is the best news and the worst news of the day. These choices are yours to make, not someone else's. And none of this is required. College is optional. You are coming out of a compulsory education system where K-12 attendance is mandated by law. In college, however, attendance is mandated by...you. Sure, we can say in our syllabi that attendance is required, and we can make it worth a percentage of your final grade, but if you don't show up to class that's your prerogative. Maybe this is exactly the kind of independence and control you've been dreaming of for a very long time. All your life you've had people telling you what to do and when to do it, and now you get to decide for yourself. You set the alarm, you hit the snooze if you choose, but do so at your peril. For years now, studies have shown that consistent attendance is directly correlated with better grades.<sup>8</sup> The evidence is so solid that in most academic circles it's what we call a no-brainer. John Lennon wrote, "Life is what happens to you while you are busy making other plans."<sup>9</sup> I'd like to suggest that life happens *without* you when you roll over and go back to sleep. Don't forget how hard you worked to get this far. Don't forget all those plans you made staring at the ceiling in your room back home. Here is the least sexy but most helpful advice of all time: go to class.

## And a Final Word before You Begin

Read this book. We wrote it in memory of a very fine woman who used to work with us here in our library. She was taken from us way too soon. We loved her dearly and we wanted to find a way to honor her, so we wrote this book. All the outward signs say it's an introduction to the liberal arts tradition, but really it's a love letter to the pursuit of higher learning, in memory of Linda Clark, a woman who loved learning and thus lived richly. May you all be so blessed to make such a path for yourselves.

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<sup>8</sup> "Class Attendance Article." Minnesota State University Mankato. <http://www.mnsu.edu/cetl/teachingresources/articles/classattendance.html>.

<sup>9</sup> *Beautiful Boy (Darling Boy)*, by John Lennon. Capitol Records. LP.



## **Stay True to TLU**

An Honor Code Statement  
written and adopted by the Student Government Association  
Spring 2013

**Bulldogs demonstrate respect, pride and leadership through integrity and accountability in our academics and community.**

Academics – We are part of a team that is determined and dedicated to our education. For our success, the faculty will challenge our understanding in a competitive learning environment. We will fulfill coursework with our own ideas, give recognition to others when we borrow, and hold our peers to the same.

Beliefs – TLU has a diverse and meaningful faith based atmosphere that fosters spiritual growth and humility. Our beliefs promote honesty and integrity in all that we do.

Community – Our school spirit and tight knit community are a result of our friendly, supportive, compassionate and open environment. As long as we strive to be exemplary, TLU's prestigious traditions will provide lifelong opportunity through networking and personal empowerment.



## THE BASIC THING

### Some Thoughts on Cheeseburgers, The Big Shaggy, and the Uses of a Liberal Education

Pamela Johnston

When my son was very young, he used to ask me a baffling question: "What's the basic thing about X?" (For X, substitute anything you can think of: cheeseburgers, *Teenage Mutant Ninja Turtles*, ducks, going to a movie. I got all those questions and many, many more.) It's a more sophisticated question than you might think, though I didn't realize this at first—I told my son, without giving it much thought,

"The basic thing about a cheeseburger is the burger."  
"But without cheese," he said, "that's just a plain hamburger."

I had to acknowledge that this was true.

"Well then, I guess the basic thing about cheeseburgers must be the cheese, right?"  
And yet, he pointed out, a single slice of cheese does not a cheeseburger make.

I don't remember if we ever solved the mystery of a cheeseburger's essence, but I do remember many conversations just like this one—conversations in which I was forced to think about the ways in which disparate pieces connect to create a unified whole. Quite often, I learned, this wholeness can't be taken apart without sacrificing something important.

As you prepared to start college this fall—talking with friends and family members about your schedule, going through an advising session on campus—you might have been asking yourself some questions about how the pieces of your college education will fit together into a logical whole. "Why do I need to take a biology class in order to be a history teacher?" you might have wondered. "How is that relevant to my major?" Those are valid concerns, of course, and I'll try to address them as I tackle an even more complicated question: *What's the basic thing about a TLU education?*

The easy (and incomplete) answers to that question can be found in the marketing materials you may have seen online or picked up when you visited campus last year, while you were still in high school. From those materials, you may have learned that TLU offers smaller classes than a state university would; that you can expect more one-on-one time with your professors than you might experience on a larger campus; and that your education will be informed (but in no way limited) by a focus on faith and vocation. All of these things are true. But none of them, I would argue, is the basic thing about the experience of being a student at TLU.

## Components of Your TLU Education

As you looked through the classes you'd need to take during your time in college, you may have noticed that your coursework is divided into various components. Two of these sound pretty similar: *Foundations* and *Competencies*. Then there's another piece of the puzzle, the *Distributions*. The *Foundations* category is very specific and comprises seven classes; -- a math course, two English composition courses, a theology course, a modern language course, a self-awareness and development course, and Frex 134, the course for which you are now reading this essay. The *Foundations* classes are designed to teach you how to organize your thinking—on paper or in person, in quantitative measures or in more qualitative ways—so that others will feel compelled to listen to and consider your thoughts, when you're ready to express them. These are crucial skills to develop early in your education because, in the words of David Brooks, a columnist for *The New York Times*, “No matter what you do in life, you will have a huge advantage if you can read a paragraph and discern its meaning (a rarer talent than you might suppose). You will have enormous power if you are the person in the office who can write a clear and concise memo” (A27).

The *Competencies* have a similar goal: as you move beyond the *Foundations* and begin taking the courses in the *Distributions* category, you'll develop competency in important skills—things like Creative Thinking and Problem-Solving. The *Distributions* category, unlike the *Foundations*, includes a wide variety of classes in a broad range of academic disciplines. As the name of this category suggests, the *Competencies* are distributed over that wide variety of options. And here's another way in which *Foundations* and *Distributions* differ: most students take the courses in the *Foundations* category during their first year of college, but some may still be taking courses in the *Distributions* category when they're seniors, depending on how they organize their class schedules. Many students (and, sometimes, their families) talk about the *Distributions* courses as if they're a nuisance; they cram those courses into the first two years, thinking of them as things to “get out of the way” before the serious work of pursuing a major can take place. But the courses in the *Distributions* category may well be the most important part of your experience as a college student.

For example: one of my favorite college courses, Survey of World Religions, had nothing to do with my English major. I took it to fulfill a Humanities distribution requirement. But that course presented me with a variety of ways to approach questions I thought I'd already answered for myself—it made me question what I knew (or, rather, what I thought I knew). That's why I remember the class even now, almost 30 years later. The courses you'll select as you fulfill the *Distributions* category requirement will offer you a similar opportunity to think about various subjects in new ways, to dip your toes into the waters of various disciplines—to think, if only briefly, like a psychologist, or a biologist, or a historian. And the spirit of exploration reflected in this part of the curriculum is a crucial component of the experience you'll have as a student at TLU.

Every university has some version of a general education curriculum—an assortment of courses all students are required to take—so you might think it's

strange to claim that this is part of what makes TLU unique. Notice, though, as I pointed out earlier, that we don't specify particular courses to satisfy the *Distributions* requirements. Many psychology courses will apply to the Social Sciences distribution; many different literature and history courses will help satisfy the Humanities distribution. You can choose the course that sounds most appealing to you, whether that's Intro to Psychology or Modern North American History. Or, if you're pretty sure neither of those classes would be your cup of tea, you can skip them altogether—there are many avenues by which to explore the social sciences and humanities. Criminal Justice, for example, or American Politics. Or British Literature. Or Global Geography. The choice is yours.

While things like *Foundations* and *Distributions* are often referred to as part of our General Education curriculum, that terminology isn't very accurate. It suggests an education which might be good for any purpose—a nondescript, one-size-fits-all backdrop for something more specific, like a major. At TLU, however, the faculty members leading your classes have focus on delivering a “liberal education.” What's the difference?

In his classic essay “The Earthly Use of a Liberal Education,” A. Bartlett Giamatti, the former president of Yale University, explains that “A liberal education has nothing to do with those political designer labels *liberal* and *conservative* ... A liberal education is not one that seeks to implant the precepts of a specific religious or political orthodoxy. Nor is it an education intending to prepare for immediate immersion in a profession” (120). In other words, a liberal education does not encourage you to be (or become) a liberal, in the political sense of that word. In fact, a liberal education doesn't seek to indoctrinate students into any particular way of thinking about any subject. Instead, a liberal education “rests on the supposition that our humanity is enriched by the pursuit of learning...it is dedicated to the proposition that growth in thought, in the power to think, increases the pleasure, breadth, and value of life” (Giamatti 121).

The word “liberal,” in this context, might be better understood the way it's used on a bottle of sunscreen that advises you to “Apply liberally.” In other words, don't skimp. The classes in the *Distributions* category will help you to develop your competency in approaching a liberal variety of subjects, and to evaluate them from a liberal variety of perspectives—some you may not have considered before. In short, the *Distributions* courses are part of your TLU education because they provide you with an education in thinking.

### That's All Very Nice, But ...

“An education in thinking isn't going to pay the bills after I graduate,” you might argue. “In order to get a job, I have to get a degree in *something*. So obviously, my major is the basic thing.”

It's certainly true that your studies will, eventually, take a deeper focus on a particular subject. Maybe you already know what that *something* will be. But maybe you're wrong: I started college as a marketing major, only to discover that the courses required by that major were the ones I found least interesting. The course I enjoyed most, in my first semester, was Introduction to Literature—another course

I'd taken to fulfill a humanities distribution requirement. If I hadn't been required to take some courses outside my major, I might not have realized that studying literature was the thing I loved most—and that the people in this course were among the best friends I'd made since arriving on campus. Those discoveries led to the career path I've been following, happily, for nearly thirty years. It's a path I hadn't even considered when I first started college.

A liberal education, then, centers itself on the belief that we're discovering important things about ourselves in every moment: when we're listening to lectures and participating in class discussions, certainly, and when we're completing labs and writing papers—but also when we're doing something as basic as making new friends and deciding to join new organizations. We're learning who we are in all those moments, too. Self-knowledge emanates from a part of our being that's both emotional and logical; it's partly learned, but partially it's innate. Some of our self-knowledge can be traced back to “light bulb” moments in our lives, but much of it is pretty mysterious. Do you remember the moment when your best friend became your best friend? The moment when you first reacted in horror to a cockroach? The moment when you discovered your love of soccer? The day you realized that science is your favorite subject? Chances are, those realizations came about gradually, the result of an accumulation of knowledge and experiences. Most people don't start playing soccer with the goal of becoming a professional; for some players, that becomes a goal along the way. For others, soccer falls by the wayside altogether and other interests take its place. This process of discovering yourself as you move through life, and the willingness to re-evaluate yourself as you accumulate more knowledge and experience, is at the heart of a liberal education.

It's impossible, then, to say that any single piece of that education—the *Foundations* or *Distributions* courses, your major, the supporting courses your major requires, the electives you'll choose to help you reach the required number of hours for graduation, or even the activities you'll enjoy outside of class time—is somehow more valuable than the others. Though the specific competencies you'll develop while pursuing your major might help you get a job and make a living some day, the person doing that job will have been shaped by a wide array of experiences in various classes. It's that combination of skills and experiences that employers are seeking. They don't hire people who can perform a single function; when that's all they need, they purchase machines to do the job. Employers hire human beings because no machine knows how to think—to ask hard questions, come up with original answers, implement projects, and analyze data to learn from their successes and failures. Human beings alone—so far, anyway—are in possession of those abilities and are able to employ them in an endless variety of ways.

### The Big Shaggy

Maybe the simple fact of our unlimited potential is what compels Giamatti to claim, “There can be no more practical education, in my opinion, than one that launches you on the course of fulfilling your human capacity to reason and imagine freely” (122). But while that sounds quite noble, we have to admit that people don't always operate in ways that follow reason; there are moments in our lives where reason,

well-developed as it might be, simply fails us. People do things that make no logical sense. David Brooks points out that *no* theory of economics, politics, psychology, or any other topic can reliably predict, in all circumstances, how human beings will behave. So what good is an education in thinking when we know these things to be true?

To answer that question, Brooks refers us to what he calls “The Big Shaggy,” that part of ourselves ruled by fears and desires that don’t make any rational, logical sense—the part that’s closer to animal than human. The Big Shaggy is also tenacious. It’s brave—sometimes to the point of audacity. And, on occasion, it’s inexplicably self-sacrificing. Brooks sees evidence of The Big Shaggy all around us:

You can see The Big Shaggy at work when destructive overconfidence overtakes oil engineers in the gulf, when go-go enthusiasm intoxicates investment bankers or when bone-chilling distrust grips politics. But this tender beast is also responsible for the mysterious but fierce determination that drives Kobe Bryant, the graceful bemusement the Detroit Tigers pitcher Armando Galarraga showed when his perfect game slipped away, the selfless courage soldiers in Afghanistan show when they risk death for buddies or a family they may never see again. The observant person goes through life asking: Where did that come from? Why did he or she act that way? The answers are hard to come by, because the behavior emanates from somewhere deep inside The Big Shaggy.

What, you may be asking now, does The Big Shaggy have to do with a liberal education? Only this: the more you know about yourself, the more you know about your Shaggy.

While you’re here at TLU, you may discover a love of art that in no way relates to your desire to be an accountant. There’s no reason your Shaggy should love art; it just does. So don’t ignore that, telling yourself to focus on the more important matter of business finance: embrace it. Take the art classes that feed the creative side of your Shaggy. You don’t have to become an art major, or even an art minor—but if your Shaggy is feeling content after a few hours of painting, chances are you’ll continue to feel content while studying for that accounting final. Maybe you’ll even study a little longer than you would have otherwise. And who knows? Maybe that knowledge of art will allow you one day to have a conversation with someone who’ll play an important role in your career.

And maybe not. Perhaps nurturing your Shaggy will simply allow you to walk through an art museum someday and experience a profound connection to human beings who lived centuries ago, people you’ll never meet in person. That, in itself, is part of what Giamatti means by “fulfilling your human capacity”: experiencing the world in every possible way.

Exploration, as it applies to a liberal education, isn’t only directed externally; it doesn’t only involve taking a certain number of classes in a prescribed number of subjects, checking off boxes and meeting requirements to satisfy those with the power to confer a degree or offer a job. Much more important are the internal discoveries that come with each of the courses on your transcript, each of the offices you hold in student organizations. How you will use those discoveries in your future career really isn’t the important question; your Shaggy will be with you far longer than any job you might have, and it’s much more powerful than the lure

of any paycheck. My Shaggy compelled me to teach English as a Second Language to factory workers for very little money—meeting with them in a cold, dark building on the factory grounds after making a long drive over snowy roads. I did that for reasons I still can't explain to anyone; I did it just because it felt like the right thing to do. So perhaps your Shaggy will someday convince you to join other students in filing tax forms for low-income families—imagine how pleased your Shaggy will be when you help a struggling single mother find an extra \$1,000 in her budget. Or perhaps, more simply, your Shaggy will decide that sharing your knowledge of yoga by offering a class at your church is a better idea than sleeping late on Saturday mornings.

A discontented Shaggy will lead you to look for happiness in all the wrong places: in material goods, the opinions of others, a bigger house or better job. We all know that's a losing proposition. And that's precisely why understanding yourself as fully as possible—giving yourself the chance to learn things that might not seem directly relevant to your career goals, allowing yourself to make discoveries about what makes you think and gives you joy, honoring all the knowledge those discoveries produce—is the goal of a liberal education.

Getting to know your Shaggy—*that* is the basic thing.

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## FROM SHADOWS TO SUNLIGHT

### Socrates and Education

Germaine Paulo Walsh

As members of the incoming freshmen class at TLU, you have been asked to think carefully about the nature of education, about what each of you hopes to gain from the education you will receive here. I can think of no better way to begin than with Socrates, the quintessential philosopher of the Western tradition. Unlike most other philosophers, Socrates did not compose any written works which have been handed down to us. Hence all that we know about him comes from second-hand sources, from accounts left about him by others who knew him or knew of him. The most famous account of Socrates is presented in the writings of Plato, Socrates' student, whose dialogues—including two that many of you are studying, i.e., the *Apology*,<sup>1</sup> and the section of the *Republic* known as the “Allegory of the Cave”<sup>2</sup>—feature Socrates engaged in his characteristic activity: conversing with various people about how human beings should live.

#### Who Is Socrates?

Socrates was the first to call philosophy down from the heavens, and place it in cities, and even introduce it in homes, and compel it to inquire about life and customs and things good and evil.

—Cicero, *Tusculan Disputations*

Socrates is in some respects a mystery. We know that Socrates was a real historical person, that he was born in Athens in about 469 B.C. and that he died in 399 B.C. after being convicted in a public trial and sentenced to death. After his execution by the city of Athens, his reputation for wisdom and moral virtue only grew. Socrates' trial occurred at a time when Athens was reeling from the effects of a 25-year-long war with its old rival, Sparta, which left the Athenians defeated and devastated. They asked themselves: How did this happen? How did we go from being a center of power and cultural accomplishment to utter defeat? Many

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<sup>1</sup> Translations of the *Apology* in this essay are for the most part those of Thomas G. West and Grace Starry West, *Four Texts on Socrates: Plato's Euthyphro, Crito, and Apology, and Aristophanes Clouds* (Cornell: Cornell University Press, 1998), though in some instances I make modifications.

<sup>2</sup> Translations of the *Allegory of the Cave* in this essay are for the most part those of Allan Bloom, *The Republic of Plato* (New York: Basic Books, 1968), though in some instances I make modifications.

attributed this decline to moral corruption, and among those blamed was Socrates. In questioning the laws and traditional beliefs of society, his accusers claimed, Socrates in fact undermined them.

It has been said that Socrates' activity, indeed his very way of life, is emblematic of the philosophic way of life. This statement raises the question: what is philosophy? One might begin to answer this question by considering the etymology of the word *philosophy*, based on the joining of two words from Ancient Greek: *philos*, meaning "love," and *sophia*, meaning "wisdom." Hence philosophy (what Socrates does) means "love of wisdom," and a philosopher (Socrates himself) is a "lover of wisdom." As Socrates emphasizes repeatedly, philosophy does *not* mean *having* or *possessing* wisdom, but rather the *quest* for it, pursued in a way that resembles a lover's passion and devotion toward his beloved.

One may glean something of the impact of Socrates on Western history by considering the fact that, while there were a number of philosophers who came before Socrates, who devised many and various theories, they have come to be known collectively as the "Presocratics." Socrates' approach to philosophy, then, distinguished him in some fundamental way from his predecessors. According to the Roman philosopher Cicero (whose commentary on Socrates opens this section), Socrates charted a new course for philosophy, by calling it "down from the heavens" and placing it "within cities." Socrates is thus the first "political philosopher" in that, unlike the Presocratics, he sought for some underlying order or necessity to explain events.<sup>3</sup> Socrates sought to understand life within the city (*polis*),<sup>4</sup> thereby devoting himself to answering the question, how ought I to live? Thus, we see that in each of the Platonic dialogues, Socrates and his interlocutors focus on what it means to live out some particular human virtue or excellence: e.g., justice in the *Republic*, courage in the *Laches*, moderation in the *Charmides*, piety in the *Euthyphro*, love in the *Symposium*, and friendship in the *Lysis*.<sup>5</sup>

It has been common in Western history to compare Socrates with Jesus. Both are revered as great teachers, and both attracted devoted followers, but neither composed any written works. Hence, all we know about them comes from the writings of their followers. Both challenged the beliefs and ways of life of the people in their respective societies, and both were accused of crimes and put to death. Both are revered for facing death bravely, for believing that virtue or righteousness is even more valuable than life. And both became more revered after dying.

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<sup>3</sup> Frederick Copleston, in his magisterial study of the history of Western philosophy, says the following about the Presocratics: "they were not content with any mythological assumption, for they sought a real principle of unity, the ultimate substrate of change... They had the notion of a world that was a whole, a system, of a world governed by law. Their assertions were dictated by reason or thought, not by mere imagination or mythology; and so they deserve to count as philosophers, the first philosophers of Europe." *A History of Philosophy*, Book One, Volume I: Greece and Rome (Garden City, New York: Doubleday and Company, 1985), 77.

<sup>4</sup> Because Athens and many other 5<sup>th</sup>-century B.C. Greek cities were politically independent, the word *polis* is sometimes translated as "city-state" or "state."

<sup>5</sup> A total of thirty-six dialogues have traditionally been attributed to Plato, though eight of them have come to be regarded by most scholars as spurious.

## The Charges Against Socrates

Such was the end of [Socrates] our friend...a man who, we would say, was of all those we have known the best, the wisest, and the most just.

—Plato, *Phaedo*

I would like to share a few of my thoughts about the texts many of you are studying in this class, beginning with the *Apology*. It should be noted that the title comes from the Ancient Greek word *apologia*, which means “defense.” Notice that the title does not mean, as it does in common English usage, an admission of guilt or wrongdoing, quite the contrary. This text provides an account of Socrates’ defense speech at his trial, the trial which ended in his death. One might argue that this text offers the best introduction to Socrates, since in defending himself against the charges made against him, Socrates provides an account of his entire way of life.

As we begin to read the *Apology*, we notice that, in responding to the charges against him, Socrates initially speaks about what he calls the “older” or “first” charges (18a-b) rather than the formal, official charges that actually have been made against him in this trial. That is, Socrates begins his defense by distinguishing between what he is formally or officially charged with, and what he *really* (though indirectly and thus unofficially) stands accused of.<sup>6</sup> What are the charges against Socrates, and how does he distinguish them from the “older” ones? The official (i.e., “new”) charges against Socrates are “corrupting the young,” and “not believing in the gods in whom the city believes, but in other daimonic beings” (*daimonia*, 24b).<sup>7</sup> The former implies that Socrates’ teaching has caused, or at least contributed to, the immorality of the young, while the latter implies that Socrates’ teaching is heretical or impious, undermining the customary Athenian religious beliefs. These “new” charges are, according to Socrates, based on two “older” charges made against him: “making the weaker speech the stronger,” and “speculating on the things in the heavens and investigating the things under the earth”<sup>8</sup> (18b).

The charge of “making the weaker speech the stronger” implies that Socrates’ teaching undermines traditional morality and thereby is socially destructive. In every society, certain acts are viewed as just and others as unjust. People form judgments about the just and the unjust, what is right and what is wrong, in accord with the education or formation they receive (what we would now call the process of socialization). For example, they may be formed to regard property as private and

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<sup>6</sup> Whatever Socrates’ ultimate reasons might be for insisting on this distinction between the official or “new” charges, and the real or “older” charges, defining the charges in this way provides him with a strategic advantage, as it enables him to avoid responding directly to the actual crimes of which he is accused. This is especially significant with respect to the second charge, since it allows him to remain silent about any unconventional aspects of his religious views and focus only on showing that he is not an atheist.

<sup>7</sup> *Daimonia* is difficult to translate, as it is used by Socrates to denote a realm between the divine (i.e., the god, *theōs*) and the human. Socrates subsequently refers to *daimonia* as half-human and half-divine, 27c-d. See also the *Symposium*, 201d-204c.

<sup>8</sup> I have reversed the order in which Socrates speaks of these “older” charges, so as to correspond to the respective “new” charges mentioned at 24b.

the unauthorized taking of someone's property as unjust. (You might remind your roommate of this if she wears your shirt without asking.) As a result, people form a bias, a prejudice, regarding respect for private property as just and disrespect for private property as unjust. Words used to support or defend this bias would be regarded as the "stronger speech," while words used to undermine or criticize this bias would be regarded as the "weaker speech." This is analogous to swimming with, or against, a stream. If one makes arguments that are consistent with social biases, one swims with the stream; one's words are "stronger" because one begins from a position of greater strength. However, if one makes arguments that criticize social biases, one swims against the stream; one's words are "weaker" because one begins from a position of relative weakness. Hence, according to Socrates, while one of the official charges against him is "corrupting the young," he is in fact charged with corrupting everyone. By "making the weaker speech the stronger," Socrates allegedly tricks his listeners through his powerful words into thinking that unjust things are actually just and vice versa, thereby wholly undermining conventional morality and harming society.

The charge of "speculating on the things in the heavens and investigating the things under the earth" refers to the type of activity attributed to the Presocratic philosophers, who sought to explain natural events or phenomena by reference to a kind of natural order or necessity, rather than the direct action of the gods. For example, they might attempt to explain the sun's seeming rotation around the earth in what we would call "scientific" terms," rather than by attributing the sun's rotation to the will and action of a god who moves and controls the sun. Insofar as these philosophers denied that natural events were caused by the actions of the gods, they were believed to be atheists. Hence, according to Socrates, the second charge made against him is not simply that his beliefs about the gods differ significantly from the conventional Athenian view, but that he does not believe in gods at all, that he is an atheist.

I shall leave it to each of you to ponder whether undermining conventional morality and teaching atheism are truly harmful to society, and whether Socrates adequately defends himself against these charges.

### The Socratic Way of Life

[Socrates] did not want to be admired as a genius who stood apart from others and who therefore essentially made the lives of others easy... [H]e was a gadfly who prodded by means of the individual's own passion, who did not permit an individual to admire and admire, comfortably and passively, but demanded the individual reveal himself. When a person has ethical powers, people will gladly make him out to be a genius merely to get him out of the way, for his life contains a demand.

—Soren Kierkegaard, *Journals and Papers*

I would like to turn now to another aspect of the *Apology*, to what is probably the most famous line of Socrates' speech: his statement that "the unexamined life is not worth living for a human being" (38a). What does this mean? Let us consider it in the context in which Socrates says it. It is near the end of his speech. He has already

been found guilty of the charges made against him, and now the jury must determine what his punishment shall be. His chief accuser has proposed death. Socrates knows that he has been brought to trial because of his words, his questioning of those who presume to have wisdom. He knows that if he tells the jury that he regrets what he has done and agrees to just be quiet from now on, to “shut up,” he will likely be let off easily. But he does not say this. Instead, he says that he would rather face death than stop the talking, the questioning about how human beings should live. It is precisely through such talking—conversing, engaging in discussion, sharing and testing opinions—that we “examine” ourselves, and, Socrates says, this is more important than anything else; so important, in fact, that to live without it would be to remove what is most valuable in life.

I would like to turn now to the “Allegory of the Cave.” Let me begin by saying that the various aspects of the image Socrates presents here should be pondered deeply and long. I will address only a few elements of this image. Socrates speaks about a cave of prisoners in bondage, who can see only the “shadows” that appear on the wall in front of them (514a-b), believing these shadows to be *what is* (515d). Yet what the prisoners see on the wall before them are in fact three times removed from *what is*, as these shadows are cast by the “puppets” held aloft by “puppet-handlers” who are directly behind the prisoners (514b). The prisoners in the cave believe that the whole of reality is comprised by what they see in front of them—that what they see corresponds directly to *what is*—whereas in fact what they see is merely a pale reflection of the whole of reality. Socrates speaks of a prisoner who leaves the cave and the difficulties he faces in making his “ascent.”

The Allegory has long been regarded as communicating some hard truths about the nature of education. Let us consider what it implies about the process of education. We notice that the prisoner must be “compelled” to leave the cave (515c), must be “dragged away ... by force along the rough, steep, upward way” (515e). This raises the question: Can anyone leave the cave willingly, and by his or her own power? Must the freedom that comes with education begin with a kind of compulsion, where one is pushed to go beyond the place in which one now resides?

Furthermore, the allegory suggests that the road to understanding begins in confusion, in the loss of the security of one’s cherished beliefs, which cannot as yet be replaced by other beliefs. Thus the prisoners’ (i.e., students’ or learners’) ascent is not only forced, but painful, both physically and psychologically. Socrates speaks of the effect of the bright light on the eyes of the prisoner who is accustomed to darkness. (This might be good payback to the roommate who borrowed your shirt without asking, no?) We have all, surely, experienced the discomfort of being awakened from a deep sleep in a dark room by a bright light being turned on. It takes time for our eyes to adjust from the dark to the light. Our ability to see is similarly hampered when we go from a bright place to a dark one. The freed prisoner faces this problem later when he returns to the darkness of the cave after being in the light of the outside world.

As the freed prisoner makes his ascent, he must proceed slowly, and in stages. When he emerges from the cave into the outside world, he is able only to look at

shadows, then at reflections in mirrors. Finally, the freed prisoner is able to look at the source of light itself, the sun.<sup>9</sup>

Out of pity for those who remain in the cave, Socrates says, the freed prisoner returns (516c). How do those in the cave respond to the freed prisoner when he returns? It would take some time for his eyes to readjust to the darkness of the cave after being in the light of the sun (516e-517a). Consequently, the prisoners in the cave would believe that the one who has returned left sighted and returned blind. If he attempts to explain to them the truth of their situation—e.g., that the shadows they regard as real things are in fact mere shadows—they would not believe him. How could they believe him? Do they have any frame of reference by which they could even understand? Must not one go through something like the freed prisoner did in order to gain understanding? From their perspective, he is now, at best, a useless man, a blind and ignorant clown who serves as a “source of laughter” (517a). At worst, he is a dangerous man, since anyone who followed his example would surely end up similarly blinded. Therefore, their response to him would ultimately be one of rejection and violence. They would seek to “kill the man who attempts to release and lead up” any other (517a).<sup>10</sup>

Let us take stock for a moment here about the implications of the *Allegory*. We have seen that those who seek understanding must proceed slowly and with effort. Socrates emphasizes how difficult it is to develop understanding. As the eyes take time to adjust to the light, so too does the freed prisoner’s mind take time to grow in understanding. From the point of view of the learner (the freed prisoner) one may initially seem to be worse off than one was previously, to be regressing rather than progressing. Have you ever had an experience like this in regard to learning something? Do you expect that your education at TLU might at times be like this?

We face the hard fact that education takes us from one place and brings us to another. There is no going back. Education entails radical transformation. This also can be painful. It might lead you to become estranged from those you care about—family, friends back home—as the freed prisoner was estranged from those remaining in the cave.

Furthermore, we see that education might at times be unpleasant, even perilous. In the *Apology*, it should be recalled, Socrates likens himself to a “gadfly” that seeks, by poking and prodding his fellow citizens, to awaken them to virtue (30e-31a). If you become a Socratic gadfly, challenging those still “in the cave,” what happened to Socrates might happen to you. (And keep in mind that everything is bigger in

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<sup>9</sup> One suspects the use of irony here. Can human beings really look at the sun? What happens when they do? We may come to know the sun as the source of light, but nevertheless be unable to gaze upon it directly. This relates to Socrates’ claim in the *Apology* that the true meaning of the oracle’s claim about Socrates’ wisdom is his knowledge of his ignorance, i.e., of the limits of his wisdom, and ultimately of human wisdom as such: that “human wisdom is worth little or nothing” (23a).

<sup>10</sup> Socrates makes a similar argument in the *Apology*, explaining why he has avoided a public or political life: “There is no human being who will preserve his life if he genuinely opposes either you or the many to prevent unjust and unlawful things from happening in the city. Rather, if someone who really fights for what is just is going to preserve himself even for a short time, he must lead a private life rather than a public one” (31e-32a).

Texas, including the fly-swatters!) Although you probably will not be tried and executed, you might be rejected, thought of as having become useless, or crazy, or even dangerous.

My final word to you: Use caution, there is danger ahead. Danger, but also, I hope, the satisfaction that comes from “seeing the sun itself” (516); or, should such direct sight prove impossible or unwise, at least a fragmentary glimmer of its splendid light.



## THE ALLEGORY OF THE CAVE

### A Conversation about Education between Socrates and Glaucon

Plato

*Introductory comments: For decades entering freshmen have read this classical treatment of the theme of education. Plato (429–387 BCE), a student of the great philosopher Socrates, constructed a dialogue that he believed carried forward the teachings of his mentor. The text below is based on the nineteenth century translation by Benjamin Jowett with minor modifications to make the conversation between Socrates and Glaucon clearer to contemporary students. The text from Plato's Republic book VII has been reformatted to make clear which character is speaking at any given time. The numbers you will find in brackets throughout indicate standard reference points that allow for scholars to specify precisely the place in the text that they are mentioning.*

Socrates: [514a] And now, let me show in a figure how far our nature is enlightened or unenlightened—Behold! human beings living in an underground den, which has a mouth open towards the light and reaching all along the den; here they have been from their childhood, and have their legs and necks chained so that they cannot move, [514b] and can only see before them, being prevented by the chains from turning round their heads. Above and behind them a fire is blazing at a distance, and between the fire and the prisoners there is a raised way; and you will see, if you look, a low wall built along the way, like the screen which marionette players have in front of them, over which they show the puppets.

Glaucon: *I see.*

Socrates: And do you see men passing along the wall carrying [514c] all sorts of vessels, and statues and figures of animals made of wood and stone and various materials, [515a] which appear over the wall? Some of them are talking, others silent.

Glaucon: *You have shown me a strange image, and they are strange prisoners.*

Socrates: Like ourselves. And they see only their own shadows, or the shadows of one another, which the fire throws on the opposite wall of the cave?

Glaucon: *True, how could they see anything but the shadows if they were never allowed [515b] to move their heads?*

Socrates: And of the objects which are being carried in like manner they would only see the shadows?

Glaucon: *Yes.*

Socrates: And if they were able to converse with one another, would they not suppose that they were naming what was actually before them?

Glaucon: *Very true.*

Socrates: And suppose further that the prison had an echo which came from the other side, would they not be sure to fancy when one of the passers-by spoke that the voice which they heard came from the passing shadow?

Glaucon: *No question.*

Socrates: [515c] To them the truth would be literally nothing but the shadows of the images.

Glaucon: *That is certain.*

Socrates: And now look again, and see what will naturally follow it. The prisoners are released and disabused of their error. At first, when any of them is liberated and compelled suddenly to stand up and turn his neck round and walk and look towards the light, he will suffer sharp pains; the glare will distress him, and he will be unable to see the realities of which in his former state he had seen the shadows; [515d] and then conceive someone saying to him, that what he saw before was an illusion, but that now, when he is approaching nearer to being and his eye is turned towards more real existence, he has a clearer vision—what will be his reply? And you may further imagine that his instructor is pointing to the objects as they pass and requiring him to name them—will he not be perplexed? Will he not fancy that the shadows which he formerly saw are truer than the objects which are now shown to him?

Glaucon: *Far truer.*

Socrates: And if he is compelled to look straight at the light, [515e] will he not have a pain in his eyes which will make him turn away to take refuge in the objects of vision which he can see, and which he will conceive to be in reality clearer than the things which are now being shown to him?

Glaucon: *True.*

Socrates: And suppose once more, that he is reluctantly dragged up a steep and rugged ascent, and held fast until he's forced into the presence of the sun himself, is he not likely to be pained and irritated? [516a] When he approaches the light his eyes will be dazzled, and he will not be able to see anything at all of what are now called realities.

Glaucon: *Not all in a moment.*

Socrates: He will need to grow accustomed to the sight of the upper world. And first he will see the shadows best, next the reflections of men and other objects in the water, and then the objects themselves; then he will gaze upon the light of the moon and the stars and the spangled heaven; and he will see the sky and the stars [516b] by night better than the sun or the light of the sun by day?

Glaucon: *Certainly.*

Socrates: Last of all he will be able to see the sun, and not mere reflections of it in the water, but he will see it in its own proper place, and not in another; and he will contemplate it as it is.

Glaucon: *Certainly.*

Socrates: He will then proceed to argue that this is that which gives the season and the years, and is the guardian of all that is in the visible world, [516c] and in a certain

way the cause of all things which he and his fellows have been accustomed to behold?

Glaucon: *Clearly. He would first see the sun and then reason about it.*

Socrates: And when he remembered his old habitation, and the wisdom of the den and his fellow-prisoners, do you not suppose that he would felicitate himself on the change, and pity them?

Glaucon: *Certainly, he would.*

Socrates: And if they were in the habit of conferring honors among themselves on those who were quickest to observe the passing shadows and to remark which of them went before, [516d] and which followed after, and which were together; and who were therefore best able to draw conclusions as to the future, do you think that he would care for such honors and glories, or envy the possessors of them? Would he not say with Homer, "Better to be the poor servant of a poor master, and to endure anything, rather than think as they do [516e] and live after their manner?"

Glaucon: *Yes, I think that he would rather suffer anything than entertain these false notions and live in this miserable manner.*

Socrates: Imagine once more such a person coming suddenly out of the sun to be replaced in his old situation; would he not be certain to have his eyes full of darkness?

Glaucon: *To be sure.*

Socrates: And if there were a contest, and he had to compete [517a] in measuring the shadows with the prisoners who had never moved out of the den, while his sight was still weak, and before his eyes had become steady (and the time which would be needed to acquire this new habit of sight might be very considerable) would he not be ridiculous? Men would say of him that up he went and down he came without his eyes; and that it was better not even to think of ascending; and if any one tried to loose another and lead him up to the light, let them only catch the offender, and they would put him to death.

Glaucon: *No question.*

Socrates: This entire allegory, you may now append, dear Glaucon, to the previous argument; [517b] the prison-house is the world of sight, the light of the fire is the sun, and you will not misapprehend me if you interpret the journey upwards to be the ascent of the soul into the intellectual world according to my poor belief, which, at your desire, I have expressed whether rightly or wrongly God knows. But, whether true or false, my opinion is that in the world of knowledge the idea of good appears last of all, and is seen only with an effort; [517c] and, when seen, is also inferred to be the universal author of all things beautiful and right, parent of light and of the lord of light in this visible world, and the immediate source of reason and truth in the intellectual; and that this is the power upon which he who would act rationally, either in public or private life must have his eye fixed.

Glaucon: *I agree as far as I am able to understand you.*

Socrates: Moreover, you must not wonder that those who attain to this beatific vision are unwilling to descend to human affairs; for their souls are ever hastening

into the upper world [517d] where they desire to dwell; which desire of theirs is very natural, if our allegory may be trusted.

Glaucon: *Yes, very natural.*

Socrates: And is there anything surprising in one who passes from divine contemplations to the evil state of man, misbehaving himself in a ridiculous manner; if, while his eyes are blinking and before he has become accustomed to the surrounding darkness, he is compelled to fight in courts of law, or in other places, about the images or the shadows of images of justice, and is endeavoring to meet [517e] the conceptions of those who have never yet seen absolute justice?

Glaucon: *Anything but surprising.*

Socrates: Anyone who has common sense [518a] will remember that the bewilderments of the eyes are of two kinds, and arise from two causes, either from coming out of the light or from going into the light, which is true of the mind's eye, quite as much as of the bodily eye; and he who remembers this when he sees any one whose vision is perplexed and weak, will not be too ready to laugh; he will first ask whether that soul of man has come out of the brighter light, and is unable to see because unaccustomed to the dark, [518b] or having turned from darkness to the day is dazzled by excess of light. And he will count the one happy in his condition and state of being, and he will pity the other; or, if he have a mind to laugh at the soul which comes from below into the light, there will be more reason in this than in the laugh which greets him who returns from above out of the light into the den.

Glaucon: *That is a very just distinction.*

Socrates: But then, if I am right, certain professors of education must be wrong [518c] when they say that they can put a knowledge into the soul which was not there before, like sight into blind eyes.

Glaucon: *They undoubtedly say this.*

Socrates: Whereas, our argument shows that the power and capacity of learning exists in the soul already; and that just as the eye was unable to turn from darkness to light without the whole body, so too the instrument of knowledge can only by the movement of the whole soul be turned from the world of becoming into that of being, and learn by degrees to endure the sight of being, and of the brightest and best of being, [518d] or in other words, of the good.

Glaucon: *Very true.*

Socrates: And must there not be some art which will effect conversion in the easiest and quickest manner; not implanting the faculty of sight, for that exists already, but has been turned in the wrong direction, and is looking away from the truth?

Glaucon: *Yes, such an art may be presumed.*

Socrates: And whereas the other so-called virtues of the soul seem to be akin to bodily qualities, [518e] for even when they are not originally innate they can be implanted later by habit and exercise, the virtue of wisdom more than anything else contains a divine element which always remains, and by this conversion is rendered useful and profitable; [519a] or, on the other hand, hurtful and useless. Did you never observe the narrow intelligence flashing from the keen eye of a clever rogue—

how eager he is, how clearly his paltry soul sees the way to his end; he is the reverse of blind, but his keen eyesight is forced into the service of evil, and he is mischievous in proportion to his cleverness.

Glaucon: *Very true.*

Socrates: But what if there had been a circumcision of such natures in the days of their youth; and they had been severed from those sensual pleasures, such as eating and drinking, [519b] which, like leaden weights, were attached to them at their birth, and which drag them down and turn the vision of their souls upon the things that are below—if, I say, they had been released from these impediments and turned in the opposite direction, the very same faculty in them would have seen the truth as keenly as they see what their eyes are turned to now.

Glaucon: *Very likely.*

Socrates: Yes, and there is another thing which is likely, or rather a necessary inference from what has preceded, that neither the uneducated and uninformed of the truth, [519c] nor yet those who never make an end of their education, will be able ministers of State; not the former, because they have no single aim of duty which is the rule of all their actions, private as well as public; nor the latter, because they will not act at all except upon compulsion, fancying that they are already dwelling apart in the islands of the blest.

Glaucon: *Very true.*

Socrates: Then, the business of us who are the founders of the State will be to compel the best minds to attain that knowledge which we have already shown to be the greatest of all—they must continue to ascend [519d] until they arrive at the good; but when they have ascended and seen enough we must not allow them to do as they do now.

Glaucon: *What do you mean?*

Socrates: I mean that they remain in the upper world: but this must not be allowed; they must be made to descend again among the prisoners in the den, and partake of their labors and honors, whether they are worth having or not.

Glaucon: *But is not this unjust? Ought we to give them a worse life, when they might have a better?*

Socrates: [519e] You have again forgotten, my friend, the intention of the legislator, who did not aim at making any one class in the State happy above the rest; the happiness was to be in the whole State, and he held the citizens together by persuasion and necessity, making them benefactors of the State, [520a] and therefore benefactors of one another; to this end he created them, not to please themselves, but to be his instruments in binding up the State.

Glaucon: *True, I had forgotten.*

Socrates: Observe, Glaucon, that there will be no injustice in compelling our philosophers to have a care and providence of others; [520b] we shall explain to them that in other States, men of their class are not obliged to share in the toils of politics: and this is reasonable, for they grow up at their own sweet will, and the government would rather not have them. Being self-taught, they cannot be expected

to show any gratitude for a culture which they have never received. But we have brought you into the world to be rulers of the hive, kings of yourselves and of the other citizens, and have educated you far better [520c] and more perfectly than they have been educated, and you are better able to share in the double duty. Wherefore each of you, when his turn comes, must go down to the general underground abode, and get the habit of seeing in the dark. When you have acquired the habit, you will see ten thousand times better than the inhabitants of the den, and you will know what the several images are, and what they represent, because you have seen the beautiful and just and good in their truth. And thus our State which is also yours will be a reality, and not a dream only, and will be administered in a spirit unlike that of other States, in which men fight with one another [520d] about shadows only and are distracted in the struggle for power, which in their eyes is a great good. Whereas the truth is that the State in which the rulers are most reluctant to govern is always the best and most quietly governed, and the State in which they are most eager, the worst.

Glaucon: *Quite true.*

Socrates: And will our pupils, when they hear this, refuse to take their turn at the toils of State, when they are allowed to spend the greater part of their time with one another in the heavenly light?

Glaucon: [520e] *Impossible, for they are just men, and the commands which we impose upon them are just; there can be no doubt that every one of them will take office as a stern necessity, and not after the fashion of our present rulers of State.*

Socrates: Yes, my friend, and there lies the point. You must contrive for your future rulers another and a better life [512a] than that of a ruler, and then you may have a well-ordered State; for only in the State which offers this, will they rule who are truly rich, not in silver and gold, but in virtue and wisdom, which are the true blessings of life. Whereas if they go to the administration of public affairs, poor and hungering after their own private advantage, thinking that hence they are to snatch the chief good, order there can never be; for they will be fighting about office, and the civil and domestic broils which thus arise will be the ruin of the rulers themselves and of the whole State.

Glaucon: [521b] *Most true.*

Socrates: And the only life which looks down upon the life of political ambition is that of true philosophy.

## CONFIDENT AND COMPETENT IN AN EVER-CHANGING WORLD

Kristi Quiros

When you were making the choice of what school to go to after graduation you had a lot of options. You could have gone to a technical school, a community college, or a large research institution. To my utmost delight, you chose Texas Lutheran University and I'm so glad you did! Was it an easy choice or a hard one? What were your reasons behind choosing this place? Some common reasons I hear from students are: the ability to study in a particular academic program in which they are interested; a friendly atmosphere; a strong feeling of community; or that "just felt right" feeling after a campus visit. However, one reason I have never heard is that TLU has a liberal arts-based curriculum. Many students don't really focus on that or if they do note it, they are not really sure what it means.

Now that you have started the Freshman Experience class, you have begun to talk more about liberal arts and why this approach is so important and central to the Texas Lutheran education. As you have read in Dr. Johnston's chapter, liberal arts is about getting a broad education that teaches analytical thinking, problem solving, and creativity from multiple perspectives and disciplines. No matter what their major, all TLU students take classes in the arts, natural sciences, social sciences, and humanities so that they can see how the different academic disciplines work and what they study. One learns what questions are posed, how problems are analyzed, and how creativity contributes to solutions within each field. Students learn specific content, but also practice different ways of thinking.

That's another thing that you may not have been aware of when you chose to come to TLU, that learning diverse approaches to thinking is a major piece of your TLU education because we want you to develop different ways to use your mind. By moving through the distribution of classes required in all degree plans at TLU, you will develop the habit of making connections among seemingly separate ideas, of imagining experiences from perspectives other than your own and of forming a greater understanding of your ethical responsibilities. These habits of thought cannot be developed by studying only one field, but happens through exposure to all of them. Enlarging these "habits of the mind," as they are sometimes called, is not important only in the academic world but in your personal one as well. These habits provide you with a framework to support your quest to know yourself better. They will help you address the big questions you have about your own life. They will enable you to begin piecing together the puzzle of what you want to do with your life and help you plan how you will move creatively toward meeting this developing vision.

## Will I Get a Job?

Now comes the question that all students ask as their parents nod in shared concern: “All of that is well and good, but can I get a job?” Fortunately, the answer is that you will graduate from TLU with the specific content valued in the market place, and also with skills you have learned to put the content into practice. Best of all, there are no separate lists of classes to take to develop the skills you need because you learn those throughout your whole TLU experience, both in classes and in experiences beyond the classroom. In order to move you in this direction, TLU has identified *competencies* for students to achieve by the time they graduate.

To be competent is to develop the ability to do something well, especially as measured against a standard. TLU has identified competencies that it wants all students to develop in varying degrees during their four years here. Competencies are the things that you can *do* as a result of what you have *learned*. There are 16 of them overall and while you will work on all of them at one time or another while you are here, you will reach a greater level of achievement in some depending upon your chosen focus. The competencies are as follows:

Foundations	Basic Quantitative Literacy
	Critical Reading
	Engaging Faith Traditions
	Modern Language
	Self Awareness & Development
	Written Communication
Distributions	Advanced Quantitative Reasoning (QR)
	Aesthetic/Expression (AE)
	Creative Thinking (CT)
	Inquiry & Analysis (IA)
	Intercultural/Global Knowledge (IGK)
	Problem Solving (PS)
	Scientific Literacy (SL)
Cross-Disciplinary	Civic Engagement (CE)
	Ethical Reasoning (ER)
	Oral Communication (OC)

Each course offered within the General Education Program identifies three things: the academic department and/or content covered, what distribution category it falls within, and what competency is addressed. For example, Composition I (COMP 131) covers composition (what you learn), is found within the “Foundations” distribution category, and addresses the “Written Communication” competency (what you do). So as you take courses, you are simultaneously accumulating not only credit hours but also competencies for your degree plan. While taking courses is the only way to accumulate credit hours, there are two ways of accumulating

competencies. Competencies are gained through the courses we have just described, but also through the co-curricular modules.

A key aspect of TLU's educational approach is for students to develop the ability to recognize lessons and concepts learned in multiple settings, many of which occur outside of the classroom. The "doing" part of your learning—as measured in the degree plan by the competencies—happens everywhere on campus, whether you are in a residence hall, on an athletic field, at the Career Development Center, or over in Africa while studying abroad. For example, if you are a Resident Assistant in the halls you are learning skills found within the competencies of Problem Solving, Creative Thinking, Oral Communication, and Ethical Reasoning. Or if you are attending workshops in the Career Development Center about choosing a career and options to consider post graduation, you are practicing skills found within the competencies of Inquiry & Analysis, Problem Solving, and Self-Awareness & Development. In order for you to identify the learning that happens so naturally outside of the classroom and give you credit for it in your degree plan, the co-curricular modules were created. Every semester modules within competency categories are offered in a variety of topics and settings. You will register for them when you sign up for your classes. Which modules you choose is up to you and determined by what you find interesting and by what competencies you would like to focus on and develop for your post graduation plans of work or graduate school.

The record of things you have done in relation to the competencies is another way to show your widening knowledge and growing cognitive abilities. In distinctive contexts you will gain different approaches to thinking that will help you face the multitude of challenges that await you in life. You will encounter "Problem Solving" when running Chemistry experiments, translating a design from paper to canvas in Art, formulating arguments for an essay in Political Science, or mediating a dispute between your roommate and suitemate. All are vastly different problems that require very different skill sets or habits of the mind. This is why taking a breadth of classes all based in different perspectives is so important.

### A Valuable Record of Your Learning

This is one of the most valuable things that choosing Texas Lutheran will give you that you probably didn't know at the time you made your decision. You will leave here with a transcript that you can take to employers or graduate schools that reveals not only what courses you completed, but also what skills you have developed and practiced by applying the acquired knowledge. With TLU articulating the competencies you are achieving in your overall educational experience, you also are guided in translating what you have learned into what you can do. Bottom line: you have learned how to learn and you know how to apply the lessons. This education will translate positively in different areas such graduate school, jobs, and eventually a career or two or three. Knowing both content and competencies gives you the flexibility you need in today's fast moving world.

Students and their families want colleges to help them plan for their futures and achieve their goals. This includes asking the big questions of where your gifts and talents can help meet the needs of the surrounding community. You will learn how

to feed your passion, give back to the world, and also make a good living for yourself. Employers are looking for candidates who have critical and creative thinking skills, who relate well interpersonally, who have had engagement and understanding of diverse cultures. They want you to be an outstanding and productive contributor to their team. This is true of the first job you get after graduation and the position you will hold ten years from now that has yet to be created. Yes, you will leave with technical skills and specific knowledge in your chosen major, but the longer term payoff to the investment you are making in your education at Texas Lutheran is the development of lifelong learning skills that will enable you to adapt and succeed within an ever-changing environment.

Your choice to come to Texas Lutheran was a good one for all of the reasons you knew when you decided to enroll and for those you are only now coming to understand. The work, the time, and the investment will be worth it.

*CARPE DIEM!*

Or, How One First-Generation College Student Lived to Tell Her Story!

Judith Dykes-Hoffmann

### The Decision

At age seven, I decided to make my first jump off the high diving board at the local pool. I can still recall that day long ago as I paced back and forth across the diving board trying to decide whether or not to make the jump. But jump I did and oh how I loved the flight down to the cool water. That is how I felt making the decision to attend college. They were both very scary days! I paced up and down the diving board that day long ago trying to decide whether or not to dive into the water; I paced in the same manner as I worked up the courage to finish the paperwork that would hopefully end with my acceptance to a four-year university. You see—it was a *jump* for me in that no one in my family had ever gone to college. In the same way that the girl of seven had no prior experience at jumping into the deep end of swimming pools from a high diving board, no one in my family had experience with higher education. To make matters even tougher, I was a female and the women in my family became wives and mothers. If we worked outside the home, we were secretaries, and secretaries did not have any use for a college degree.

I was also afraid of what some in my family might think about me wanting to do something they had never done. Would they think less of me or would they be proud of me? The one thing I knew was that I loved learning and college was a place where I could learn what was necessary to change my future. I also had family, friends, and co-workers who told me I was smart, which gave me the confidence to dream of the possibilities of continuing my education. After much thought and apprehension I decided this was something I had to do. I desired the knowledge and freedom that a higher education would bring me. I was about to become what is commonly known as a “first-generation college student,” and I never knew how this experience would make my college career different from others around me.

### The Beginning

The biggest issue for me was I had no idea what to expect about anything. I am sure to a certain extent all first year students feel that way. Since no one in my family had ever gone to college, no one offered me advice, told me what to look out for, warned me what to expect, or described for me the agonies and triumphs of college level work. What I knew of college was what I had seen in the movies or on television. I did not know whether to expect John Belushi in a toga ala *Animal House*

or a Sam Kinison type history professor screaming at me about Vietnam as he did to Rodney Dangerfield in the comedy *Back to School*.<sup>1</sup>

At that time the college I had chosen, Texas Lutheran College, had no formal orientation for first year students and certainly no special session for first timers like me to explain the ins and outs of college. Since I chose to commute to school, I was relieved that I did not have to worry about finding my way around the residential portion of the campus, to wonder about who would be my roommate or where I would find something to eat. I still fretted, though, about the other half I had to negotiate. The only thing I knew about the first day and my first class was the building, room number of the classroom, and the time that class started. Off I went with my heart pounding into the classroom.

I knew right away after I sat down in my chair that this was nothing like high school. I walked into my first class, a history class. Moments later the professor walked into the room and introduced himself as “Dr. Thomas.” I was sent into instant shock. The first few minutes I did not hear another word out of his mouth as I was totally confused! I thought to myself, why do I have a medical doctor for a history teacher? I was afraid that I was in the wrong class or worse yet the teacher had walked into the wrong room. I sat there trying to look *normal* and worked hard to focus in on what he was saying. I finally calmed down, let my worries go, and found that I thoroughly enjoyed listening to what he had to say. I actually walked out excited about the class. It was later that I found the nerve to ask another student about this *doctor* thing. I learned doctor was the proper title used for a faculty member who had earned a PhD in a specific discipline. Of course, at that time I did not even know what a PhD was or what it meant to have one. The student went on to explain to me that our professors not only had a bachelor’s degree, but that they had gone on to earn more advanced degrees in graduate school. Naturally when I found out about graduate programs I was clearly amazed that there were more degrees to be earned beyond a bachelor’s degree. This world of higher education might as well have been in a foreign country or on another planet, as I did not understand much about it.

### Adjusting to this New World of Mine

Over time I slowly adapted to my world of little-knowns and more unknowns and accepted the fact that my experience was not like others in my classes. As a coping mechanism I often found myself listening in on conversations around me to pick up on those small things I would have known if I were not a first-generation student. One day I heard a student ask another if she had “bought her blue book yet?” I immediately conjured up the images in my mind of all my textbook covers and felt panic when I realized not one had a blue cover! Oh no, I thought, I screwed up and my professor would be angry that I was missing a text. Or worse, I feared I had missed some of my reading assignments. Instead of showing panic on my face I coolly sat there and listened that much harder to the conversation. When I heard the

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<sup>1</sup> These two films are used in this paper as historical context for the author. A more modern film that compares would be *Legally Blond*.

female classmate reply that she'd go by the bookstore after class to make the purchase, I slyly walked into the bookstore later that day, walked up to the counter, and proudly asked, "Where can I find the blue books?" The clerk pointed to a corner of the store and there, to my relief, were piles of "blue books," and when I picked one up I quickly realized this was not a book at all but blank pages of paper stapled together with a blue cover on it to be used on exam day. Whew! I was relieved. I guess that I had at least one to two of this type of "oh-no" incidents every day that first semester of my college experience.

When I would go home and tell my family about these experiences or about how I had overcome these obstacles by relying on my wit and courage, they just stared at me and had little to say in response other than "Honey, we are so proud of you that you are in college!" Argh! No one understood and no one could tell me how to avoid these moments—something I desperately wanted to do. From not knowing what a blue book was, to finding my classrooms, to knowing what to call my professors, to obtaining financial aid, to learning about available scholarships and finally to discerning how to fill out a degree plan and filing graduation paperwork—I had to figure all this out mostly on my own. Looking back to those years I now inwardly chuckle when I think about how I was surrounded by thousands of people yet felt totally alone as if I lived on an island. It seemed like I spent much of my first semester constantly confused. I know that my friends who were not first-gens like me had fewer moments of panic setting in.

For you, the reader, if you are a first-generation college student I do not have to explain what it feels like. You are experiencing it firsthand. If you are from a family of college graduates, you cannot fully appreciate the additional angst and emotions that first-gens go through. There is no doubt that all first year college students experience elevated stress levels upon entering higher education, but first-generation students have an additional layer of stress on top of these other worries. And, unlike you whose parents or grandparents went to college, we first-generation students have no one at home who fully understands. However, for all students it is important to understand what is meant by the term first-generation student, to know there are many to be found across college campuses in the United States, and to realize there are common experiences shared by first-generation college students.

### Just What is a First-Generation Student Anyway?

What defines a first-generation student? In my case I was the first person in my family to ever enroll at a four-year university. There was no doubt about me being a first-generation college student. However, the often cited definition by Fuji A. Adachi, which he first coined in 1982,<sup>2</sup> is broader than my experience. According to Adachi, a first-generation student is one who is the first person in a family to *complete* a college education and earn either an associate's or bachelor's degree. You can still have a parent or parents with some college experience, but you are the first to finish.

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<sup>2</sup> There are different definitions for the term *first-generation student*. The U.S. Department of Education uses the Adachi definition; therefore, it is the one used in this paper to define the term.

There can be some first-gens like me with no family college experience, but also those who might come from families with a bit more knowledge about higher education.<sup>3</sup> Let's look at some data.

**Percentage distribution of 1989–90 beginning postsecondary students according to first-generation status, by type of institution**

	First-generation student	Parents have some college	Parents have bachelor's or advanced degree
Total*	43.4	22.9	33.7
Institution type			
Public 4-year	29.5	26.8	43.7
Private, not-for-profit 4-year	25.0	21.6	53.4
Public 2-year	50.5	21.8	27.8
Private, for-profit	66.8	20.9	12.3

\*Students in other less-than-4-year institutions (private, not-for-profit; public, less-than-2-year; and private, not-for-profit less-than-2-year) are included in the total, but not in the detail because the sample sizes were too small. Note that details may not sum to totals due to rounding.

SOURCE for chart data: U.S. Department of Education, National Center for Education Statistics, 1989–90 Beginning Postsecondary Students Longitudinal Study, Second Follow-up (BPS: 90/94), Data Analysis System.

As this chart indicates, first-generation students constitute a group significant in number. By the late 1980s it was estimated that 66 percent of the U.S. college population fell into that category (see table above). The numbers were expected to increase over the next several decades and on into the twenty-first century.<sup>4</sup> In the fall of 2012, 47.6 percent of the freshmen were listed as first-generation students. Since 2002 TLU has averaged just under half of its freshman class to be first-generation students. The highest percentage during this period was in 2008 with 54 percent of the freshman class being first-gens to its lowest in 2009 with 44 percent listed as the same.<sup>5</sup>

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<sup>3</sup> Nnadozie, Emmanuel, et al. “Undergraduate research internships and graduate school success,” *Journal of College Student Development*, (March/April: 2001) <http://findarticles.com> (accessed July 9, 2010).

<sup>4</sup> Khalilah A. Payne, “First-Generation College Students: Their Challenges and the Advising Strategies That Can Help,” *The Mentor: An Academic Advising Journal*, Penn State’s Division of Undergraduate Studies, Jan. 31, 2007, [www.psu.edu/dus/mentor/070131kp.htm](http://www.psu.edu/dus/mentor/070131kp.htm) (accessed July 7, 2010).

<sup>5</sup> Jean Constable, “First-Generation in Fall Freshmen Classes 2002-2009,” TLU Institutional Research Report, generated 9 July 2010.

## Shared Experiences

There are higher education organizations that have collected information about first-generation students. They have found common or shared characteristics about the group that can help shed light on understanding certain obstacles this group faces upon entering college. One is they tend to come from families who hold traditional working class or blue collar jobs.<sup>6</sup> These are forms of work that often involve manual labor, are paid hourly, and do not require a four-year college degree. They also pay less. According to the U.S. Census Bureau the average salary in 2000 for one holding only a high school diploma was \$30,400; whereas, a person with a college diploma from a four-year institution in 2000 earned on average \$52,200.<sup>7</sup>

Incomes also influence home purchases or rental opportunities. Since a family with no college graduates on average will earn less money, this results in that family living in a home or apartment of lower property value. Homes with lower property value influence school taxes. Schools in neighborhoods with a lower tax base have less money to spend on resources needed to educate the neighborhood children. With less money to spend on students the quality of their education could be negatively impacted. This in turn could lead them to be less academically prepared for college level work and in need of remedial classes in writing and math if the student plans to pursue higher education. It can even lead to lower SAT and ACT scores. The above certainly applies to my situation. I grew up in a working class neighborhood that fits the previous description. The homes were small and much less expensive than others in my town. This generated less tax revenue for our local school. Nevertheless, teachers and parents worked very hard to provide us with a solid education. One thing I knew was that lower incomes did not mean less capability to learn or less effort.

Another common finding for the group concerns the college application process. As a result of not having many—if any—family members who've gone through the process, first-generation students often know less about the financial aid applications and the available scholarship opportunities. Because first-generation students tend to come from families who earn less, financial assistance is often a necessity, thus, understanding this process becomes very important. In addition, first-gens often work while attending school to help support their families, or they might have extra family obligations such as watching younger siblings while parents work late or work a night shift. This fact leads to time management issues when balancing work and school responsibilities and again, because there is no one in the family who finished postsecondary education, family members often do not understand these time constraints upon the first-gen student when making requests for extra help around the house. The first-gen student can become torn between

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<sup>6</sup> Khalilah A. Payne, "First-Generation College Students: Their Challenges and the Advising Strategies That Can Help" *The Mentor: An Academic Advising Journal*, Penn State's Division of Undergraduate Studies, Jan. 31, 2007, [www.psu.edu/dus/mentor/070131kp.htm](http://www.psu.edu/dus/mentor/070131kp.htm) (accessed July 7, 2010).

<sup>7</sup> "Average Annual Earnings-Different Levels of Education" U.S. Census Bureau, Current Population Surveys 2000. <http://www.earnmydegree.com/online-education/learning-center/education-value.html> (accessed Aug. 4, 2010).

giving time to family responsibilities and the responsibilities of getting schoolwork completed. Nevertheless, any student—whether they are a first-generation student or not—would probably find it a challenge to get in extra study time or possibly keep their grades up under these extra pressures.<sup>8</sup> I know I spent many days with almost no free time because after going to work, attending classes, reading assignments, working on papers, studying for exams, and helping take care of a house, it was all I could do to get in eight hours of sleep. However, even though my family may not have fully understood the process I was going through, they were as supportive as they could be and helped me get through some difficult days.<sup>9</sup>

While first-generation students may share common traits that society may see as less positive or could prove to be obstacles, these commonalities were a source of strength for me that I leaned on, and they helped in my success. As previously mentioned, I worked while I went to school, had family obligations, but I never struggled with time management. My years of juggling responsibilities sent me to the time management school of hard knocks. I learned the hard way long before I went to college about what would happen if I put things off to the last minute, so I had improved greatly here by the time I arrived at TLC. Because I had to work so much in my younger years, I was not afraid of hard work. I also was not that bad at high school academics. While my family never pushed me to make good grades since all I needed was to get out of high school, it was still important for me to do my best work. Besides, I was naturally curious and enjoyed learning about new things and ideas. I may not have graduated in the top ten percent, but I was not in the bottom either. Nevertheless, because my family never envisioned college in my future, I was still underprepared academically for college in some areas and had to work harder than others to get myself *up to speed*. I was not prepared for reading fifty to one hundred pages a week and writing papers in almost all my classes. As a result, I was a regular at the Writing Center and Supplemental Instruction (SI) sessions, and I participated in study groups.

While I invested all this extra time and energy, I still came from a family that struggled financially to make ends meet. Since both my parents only had a high school education, they worked hard to pay bills and provide me and my two brothers with the things we needed. It was more important in my family that we all get out of high school and get to work, rather than further our education. The idea of taking on another four more years of education was seen as a luxury, and in my family we did not get that many luxuries growing up.

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<sup>8</sup> Khalilah A. Payne, “First-Generation College Students: Their Challenges and the Advising Strategies That Can Help” *The Mentor: An Academic Advising Journal*, Penn State’s Division of Undergraduate Studies, Jan. 31, 2007, [www.psu.edu/dus/mentor/070131kp.htm](http://www.psu.edu/dus/mentor/070131kp.htm) Retrieved July 7, 2010.

<sup>9</sup> There are other characteristics shared among first-generation students not discussed in this paper. For insight into multiethnic issues for first-generation college students see “Exploring the Experiences of First-Generation, Multiethnic Undergraduate College Students” by Jody Donovan and Lehal Johnson, [http://www.sahe.colostate.edu/Data/Sites/1/documents/journal/Journal\\_2004\\_2005.vol14/Exploring\\_Experiences.pdf](http://www.sahe.colostate.edu/Data/Sites/1/documents/journal/Journal_2004_2005.vol14/Exploring_Experiences.pdf)

## The Impact of Being the First

Up until this point you might have the impression that being a first-generation student is a burden and something of a disadvantage. It is true that we have unique challenges, but we also have some wonderful advantages as first-generation students. First and foremost is the potential to break out from a low income earning future. Had I not obtained my diploma I was headed for a career as a secretary, clerk, or maybe a bank teller, jobs I worked at before attending college. These are all honorable careers and entail hard work; however, they often have a ceiling on income that never gets much beyond minimum wage. This fact helps to explain the lower annual salary previously mentioned. With my college diploma I had the luxury of looking at many more career opportunities and no longer had to be disappointed when the job ad came with the statement “college diploma required”. Another advantage, that some might see at first light being a disadvantage, is that a first-generation student does not know what to expect and there is really no one else’s experience to compare to. While you may not know how to maneuver through the financial aid or registrar’s office, you don’t have any of your uncle or cousin’s horror stories to stand in your way. I remember hearing some students talk about their parents saying things like “I did not like this” or “we got into trouble about that” or “you better avoid class with that professor” or “you can’t live in that dorm.” I quietly smiled and thought to myself how glad that I was that I did not have to deal with all that. Again—paying attention to one’s surroundings can pay off. As a result of not knowing, first-generation students have the whole world before them—so *carpe diem*—or “seize the day!” I took advantage of every opportunity, event, lecture, and so forth that came along because I honestly did not know any better. I am much richer and wiser as a result.

Finally, since I was the first in my family to go to college, I was able to set the standard for others to follow in my footsteps. Again, this could be seen as a disadvantage as it does bring added pressures; however, I saw this as an opportunity. Knowing that I was a first-generation student and how much my degree was going to open up a new world for me, I wanted to express my experiences in a positive light, hoping I would encourage others in my family to follow my chosen path. I, too, wanted others to break out of a life of limited opportunities. And as to that new world, I had no idea how exciting higher education can be! Since I was never told by a family member about a college education, I had no idea how liberating learning could be. The more I learned the more my desire to know intensified because this was new to me in a way that those coming from a home where college graduates were the norm could not understand.

## Looking Back

As clearly as I remember the day I decided to go to college I also remember graduation day. For all of us graduates it was one of the best days in our lives. We were surrounded by family and friends who cheered us as our names were called. We all walked across the stage with smiles that stretched from one ear to the other. We were happy, relieved, and proud to be called college graduates. My heart pounded as I heard my name announced by the academic dean. I don't recall much after I heard my name, but the photo captured by the official photographer shows TLC's president handing me my diploma, so I know I was there. The one thing I do vividly remember after climbing down the stage stairs and walking back to my seat was seeing the faces of my parents. They positioned themselves to where I would have to walk right past them on the way back to my assigned seat. To my dying day I will never forget those two smiles and the looks on their faces. Parents are proud of their children no matter what, but when I looked into their eyes I could see all the faces of my ancestors looking back at me and feeling the pride of generations. I had done it! I had not only taken myself to a new level, I had taken my family there as well.

I sometimes wonder how my life might have turned out had I not gone on to earn my college diploma. I am sure that I would still be working at my secretarial job making not much more than minimum wage. I try not to do that exercise very often because I tend to be a forward-looking individual. Instead, I proudly have three post-secondary diplomas. I have a bachelor's, a master's, and a PhD. I am now the doctor meeting first-generation students! The new world shown to me those years ago opened up a world of learning that just does not stop and I love it. Of course, when I told my family I was going to graduate school to continue my education beyond my bachelor's experience, they were so confused. Even though they knew I had graduated and did so with honors,<sup>10</sup> they asked me what was wrong. Upon further inquiry I learned that my family thought that *graduate school* was for those who had not completely graduated from college or who had something wrong with their degree. Since they knew nothing about the college experience, they thought I was being sent to a remedial program whereupon successful completion I would finally be a "graduate" hence their understanding of the term graduate school. When I explained to them that graduate schools were post-baccalaureate schools located within universities where college graduates went to further their studies, conduct research, and earn post-baccalaureate degrees such as master's or doctorate of philosophy degrees (PhDs), they were greatly relieved. Instead of being concerned they were thrilled. Oh, there are many wonderful things to discover if you are a first-generation student.

Every first-gen experience is different because we are all individuals. There might also be students who are second- or third-generation students who have similar issues and experiences of first timers like me. And, there might even be first-generation students who will finish school and never encounter the things I have

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<sup>10</sup> I am proud to say that I graduated summa cum laude (with highest honors). So much for the idea that first-generation students are low academic performing students!

described in this chapter. Every college student's experience is different. Whether you are the first in your family to go to school or you come from a long line of college graduates, you must not lose sight of what higher education can do and what it is all about. You also need to finish and finish strong. Hopefully, as more and more first-gens graduate, there will come a time when there will be fewer first-generation students, which means we are producing more college graduates across the country. In a recent report, the president of the University of Maryland University College, Susan Aldridge, states that in 2010 researchers estimate that "baby-boomer retirements will soon leave our workforce 14-million shy of the number of four-year degree recipients we need." Furthermore, she writes that right now "65 percent of adults in this country do not have a college degree."<sup>11</sup> This information is startling and also tells us that there will be more and more first-generation college students for decades to come. If you are the first in your family, you must take advantage of the resources and opportunities available to you to help you finish your degree. Do not be afraid to ask questions. If you are the first in your family, you must persevere, even if the pressures to quit become strong. Do not quit. If you are the first in your family, break free and step into an amazing world. Take courage. However, for all of you reading these words draw upon the strength that got you to where you are and made you who you are right at this moment—a college student at a four-year university! *Carpe Diem!*

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<sup>11</sup> Susan C. Aldridge, "No adult left behind," *Austin American Statesman*, Monday July 5, 2010, A9.



## IN AND OUT OF PLATO'S CAVE

A Personal Tale

Juan Rodríguez

*Stories of the past are linked to the formation of selves and others in a complex tapestry of textured narratives.... But it is their real effects that concern me. Myth or history, cultural memory or public history, stories of the past track through us and over us as they provide narrative representations that help us to make our way through the world.*

—Richard R. Flores, *Remembering the Alamo: Memory, Modernity, & the Master Symbol*

### Innocence

*1949. Seven Years Old. Las Yescas Elementary School. For Mexicans Only.*

For three years every morning of the school year, through tears, I have been begging my mother to let me go to school with my older brothers and sister. Every morning for three years, wailing, I have been chasing my older brothers and sister down the pasture path to the place where they would catch the bus. I would run as fast and as far as my little legs would take me. But it was never fast nor far enough. I would sit and cry until I heard my mother calling me home. Without my older siblings, I felt abandoned, left to play alone until they came home. Full of delight, I would run to greet them, pestering them with questions about school, feeling their closeness. The morning grief became afternoon joy.

To my child's imagination school was a new place to play, to make new friends, to learn to write my name. I was so excited, so anxious, the morning I could at long last join my brothers and sister down the pasture path to catch the bus. But Las Yescas Elementary School in the Río Grande Valley of Texas jarred my innocence. I was immediately separated from my siblings and placed in a peculiar world of confusion and dread. Miss Jasper, a white monolingual teacher, did not speak Spanish, my only means of understanding the world. What she could not utter to my understanding, she would emphasize with scorn and deliver with a paddle. For reason or reasons I to this day do not understand, every school day morning of those first weeks of my first semester of school, the good lady would suddenly jerk me by the arm from my desk and dent the back of my legs with a ruler. I did not cry in her presence, but tears would well deep in my eyes.

Something ugly had entered my life, something even my innocence could not forget. I began to cry every morning, begging my mother to let me stay home, please. As I never told any of this to my family, my mother and siblings did not understand my change of heart. Luckily, after only twenty days of attendance, I was

rescued from Miss Jasper's classroom by my family's having to move, as it often did, seeking something to ease the pain in our stomachs.

My vital focus, my intellectual radius, was so narrow then that I did not understand the significance of those initial days of my schooling. Las Yescas Elementary School had introduced me to the figure that would become the most influential in my life, Jim Crow. And there was no way to avoid him. Trapped, I had to figure out ways to negotiate his presence and power in my life until, many years later, I could call him by name.

### Ignorant Bliss

*1950-1951. Jefferson Elementary School. Edinburg, Texas. Experiment in Integration.*

My family's move brought me to an urban "Mexican" school which had much of the same ills the rural Las Yescas had, though I was no longer spanked, as I had learned to withdraw into myself and remain quiet and inconspicuous. After a few months of school, an order came down stating that from each grade two Mexican students would be taken to attend Jefferson Elementary, a new all-white school nearby. From our grade, a cousin of mine and I were chosen for who knows what reasons.

Surrounded by unrestrained hostility and subjected to continual ridicule, we ten Mexicans would seek each other out during recess and sit dejectedly along a low wall on the perimeter of the playground. It would have been suicide to try to play on the new playground equipment. Lunchtime was particularly trying. We, the Mexicans, would be placed on stage in the school cafeteria that doubled as an auditorium. While they ate their institutional food with forks and spoons, we tried to eat our tacos from a brown bag brought to our mouths in a futile and ridiculous attempt to hide what sustained us. At the time, Mexican food was not accepted in "white" spaces. Both students and teachers would point at us and laugh. After a few days of this, we all stopped bringing our lunch, asking to remain in the classroom during the lunch period, never telling our parents why we no longer wanted to take lunch to school.

In the one long year I attended Jefferson Elementary, I began to accept the reality presented to me. There was no other choice at the time and at my age. I had nothing with which to counter. Ridicule and shame, I concluded, were a part of schooling for us Mexicans. Thus, after a few months, I became numb to Jim Crow injury and simply played dumb when it arrived like an evil stranger. Seeking bliss in my ignorance, I came to accept non-acceptance as natural to my schooling.

Despite duress, at Jefferson I did manage to learn the alphabet, scores of disjointed words in English, and most important of all, I learned to observe from the very margins where I had been placed. Without being conscious of it, I was learning how to survive in a white world. I had to learn to pretend to be unaware, oblivious to all abuse. I learned to cope by diving deep into myself, ignoring the world around me at school and around whites. I sought the refuge of family, the only relief and joy of my days then.

*1951-1953 Ackerly, Texas. On the Migrant Stream.*

The 1950s hit us particularly hard. It was a punishing decade during which Jim Crow tightened his grip on people of color. No longer able to survive in the Valley, my family joined the massive army of Mexican cotton pickers that yearly trekked *al norte* in search of employment, of ways to keep their families fed.

My parents enrolled me in Ackerly Elementary, the only Mexican in my grade. The school was integrated because, as a small rural school, its budget could not fund a separate school for Mexicans, and there were no African Americans in the district. Besides, it was expected that Mexicans would attend school, if at all, only during the short harvest season. My family, however, stayed in Ackerly for two years. By this time, I had become quite an expert in dealing with the white world. Be quiet, be pleasing, be dumb, and smile and bow before Jim Crow. I began to find my way in school with the help of one or two white students who “liked” me and whom I sought to please in return. I was learning to become a pet kangaroo, the exotic animal out of its context. I did not then nor do I today understand fully why my urge to belong was greater than the hurt of humiliation and the loss of self-respect.

False Consciousness  
Brown Scholarship Boy Stuck to the Shadows on the Wall  
*1953-1961. New Home, Texas. Scholarship Boy.*

After Ackerly’s dry land farming bore no harvest during the devastating drought of the 1950s, my family wandered about once again in search of employment. By chance, it was found in a small, rural town in the heart of irrigated lands and the Bible Belt. I didn’t know it at the time, but New Home Elementary and High School would steer me toward a life in academia.

When my siblings and I were initially enrolled in the school, we were taken to an old, red brick gym to join all the other Mexican migrant students on its spacious floor. Though we were segregated, I saw that local, non-migrant Mexican students were attending classes with the white students. I was bewildered. What made those Mexicans special? I did not understand.

After a couple of months of harvest, the army of Mexican cotton pickers deployed elsewhere. We stayed behind because my father had landed a year-round job on a local farm. We were soon integrated into the white school as local Mexicans, thus becoming one of “our Mexicans,” as I often heard white teachers refer to us. Oddly, I began to feel a sense of pride in being “special,” in the privilege bestowed upon me by whites at school.

For the first time in my schooling and despite the clearly marked social boundaries still remaining for Mexicans [*No dogs, Niggers, or Mexicans Allowed* signs polluted the landscape], I began to feel as if I belonged in school. The only problem was that I did not know much English, and Spanish, my native tongue, was prohibited and punished on school grounds. Good fortune and chance, however, placed me in Mrs. Edith Head’s fourth grade English class. She was the superintendent’s wife and the meanest, most stern teacher I have ever faced. She was merciless and unforgiving in her teaching. But she was fair. She measured all her

students, brown or white, with the same ruler, both literally and figuratively. Whatever English I know, I owe to her. May she rest in peace.

Once I could communicate in English, my sense of belonging in school soared. I became an insatiable reader of all books assigned. Eager to please my teachers and impress my fellow white students, I daily studied and did my homework long into darkness. I became a scholarship boy, the student of color who excels academically and who in almost all cases ceases to identify with his ethnic group. I was promoted from the sixth to the eighth grade at the same time that my best white friend was demoted from the eighth to the seventh grade. As the superintendent's wife, Mrs. Head must have had a hand in my promotion, I am sure. I graduated valedictorian of both my eighth grade and senior classes.

My unprecedented academic success in middle and high school was blinding. It created a reality much like that experienced in Plato's cave, creating a false consciousness in me that was so undeniably real and magnetic. My mind had been colonized. I began to see the world through white eyes. Having been told many times by white teachers and school friends that I "was different than those other Mexicans," despite the obvious fact that among those other Mexicans were my own siblings and parents, I believed them. The sense of exceptionalism was a special privilege bestowed upon me by whites, and it pleased me greatly. I began to deny myself, my parents, my culture and people. I began to idolize whites and their world. I had become a genuine coconut, a Tío Taco, a sell-out. Jim Crow had made his point and won.

### First Difficult Move Toward Turning Around

*1961-1968 Texas Tech University. BA and Masters Under Jim Crow*

As valedictorian of my senior class, I was by State law granted a tuition scholarship of \$100.00 to a Texas college or university. Though I dreamed of enrolling at the University of Texas at Austin, my financial situation narrowed my options to Texas Technological College some twenty miles away from New Home. The immediate reality was that I lost all the white privileges I had gained in high school with great difficulty. Jim Crow was alive and imposing on the Tech campus, contributing in part, I am sure, to the fact that only a handful of Mexican American students were enrolled at Tech at the time. Another critical obstacle to Mexican American enrollment was the lack of funding. To my recollection, loan or grant programs for which Mexican Americans could apply were non-existent then. Consequently, I was faced with having to work very long hours to support myself and, after my sophomore year, my family. I worked seventy-two hours a week and carried 12 to 15 credit hours every semester of my undergraduate studies. After earning the BA, I stayed at Texas Tech and earned a master's degree.

Allow me a slight digression. Some fifteen years ago or so, I was contacted by the alumni office at Texas Tech. The editors wanted to run a feature story on me as one of the most successful Tech alums. They sent for my review a draft of the article someone in their office had penned. I read it carefully, critically, and weighed the offer. I rejected it. My experience at Tech was not the paradise described in the

piece; it was hellish, and not one word of that reality was mentioned. I could not sell out again. Tío Taco was dead.

During my stay at Tech, however, the most extraordinary thing happened. The sharp knife of social change began to carve up the nation and the world. In 1964, the force that would stun and put to ground, though—sadly—not kill, the viciousness of Jim Crow was approved by Congress, the Civil Rights Act of 1964. By law now, the colored were free to roam, restless and curious, all public spaces, before the exclusive domain of whites. My personal world exploded. I broke through the circumscribing cocoon I had built for my protection. I organized the first of many protests I would organize in the coming decades. I began to look at my own social and academic reality from the outside. I was at the turning-around point in Plato's Cave. Jim Crow had a name and could be called to account.

A Faint Light Glimmers in the Distance  
The Dawning of a New Understanding of the World  
*University of Iowa (1969-1972). Doctoral Studies.*

I arrived in Iowa City with a wife and three children in tow and with my intellectual and physical radii largely expanded. Though I excelled in my studies at Iowa, earning a four-point in all my coursework and even passing my comprehensive exams with honors, my attention and focus were in the social world around me. The Chicano and Anti-Vietnam Movements demanded most of the hours of my day and night. I no longer had to worry about financial matters, as I had a more than generous fellowship to see me through. As my involvement in social protest became more apparent, I learned an important lesson. There was a price to pay for trying to change the world. The various trips to jail for demonstrating did not have an impact on me. What has had a lasting impact on my career are these words from my dissertation director, "As long as I am director of your dissertation, you will not get a degree from this university as long as you keep insisting on using *that* critical approach and as long as you continue to disgrace this department with your ludicrous public acts." Much to his and my department's chagrin, I was approaching literary analysis from a socio-historical point of view [examining a text in its socio-historical and cultural context], an approach anathema to a department enamored of formalist critics for whom a text was self-contained, needing no context with which to understand it. I left the University of Iowa an ABD, all but dissertation, a non-official and therefore non-rewarded title. To the same extent that I had been rewarded in the past for accepting the world as presented to me, I was now punished for trying to change the world, for trying to maintain my intellectual integrity.

I took my ABD to my first teaching job at the University of Arizona in sunny Tucson. What an elephant's grave! Fresh out of doctoral studies and a vibrant social protest environment, I was stranded in a department that shunned any mention of intellectual curiosity or social involvement. When I began to organize protests on and off campus, my chair called me to his office and said, "Here, we believe in evolution not revolution. If you want to stay here, I don't want to see your picture in the paper anymore." A few months later, as luck would have it, I got a call from

someone who would become a friend and mentor, Joseph Sommers (RIP). He was offering me a teaching position at the University of California at San Diego (UCSD), the place where my schooling really began, where I began to walk out of Plato's Cave.

What a different intellectual world UCSD was! My colleagues were some of the top intellectuals in their field. They were friendly, unassuming, accepting, engaging, and challenging. There was Herbert Marcuse, Diego Catalán, Fredric Jameson, Carlos Blanco, Humberto Eco, Terry Singleton, Rosaura Sánchez, Sylvia Winters, Shirley Williams, and so many others. They lived and breathed social change. They taught me a method and a conceptual language with which to try to understand the world. They introduced me to books and authors who were never mentioned in all my previous schooling, not even in graduate school. There was a whole other world that had been kept from me. I was angry at all my previous teachers for keeping me tethered to Plato's wall, for I came to realize that all my previous schooling had been a constant feeding of data bits, of information without context, that were to be memorized and then regurgitated on exams. In all my previous years of schooling, I had been rewarded for my ability to memorize and recall. In other words, I was praised and rewarded for knowing a lot but, paradoxically, for understanding little or nothing at all. My schooling had been much like the ten-o'clock news on television are today, lots of information but no context. Truly, I had been taught by the banking method of education that Paulo Freire mentions in his studies of pedagogy. And even when I was socially active, demonstrating for social causes, I was merely an activist, for I had no ideological framework to understand and guide my protests. In short, I was demonstrating for the sake of "making noise," as Freire properly defines such protests.

My course of action became clear. I had to return to the texts I had read in all my previous schooling, to re-read them under a new critical light, and at the same time, read the new texts and authors I was discovering with the help of my colleagues. For the very first time in my life, school was purposeful, fun, engaging, exciting, as was my involvement in social causes. But before I experienced these feelings, I had to know the pain felt by the individual who in Plato's Cave turned away from the shadows, from false consciousness, to the initially blinding light of consciousness.

### Critical Consciousness

I became a voracious reader, resentful in the recognition that all my previous years of schooling and sacrifice had taught me little beyond disjointed, disconnected data bits. No one had ever taught me to connect the dots, or even that the dots needed connecting. I realized that there is a politics of education, that the transmission of knowledge is not neutral but involves the power to determine a particular vision of the world. To the extent that those in power in a particular society control the educational process, they impose a consensus view of the world, a view that upholds and celebrates their power. At the same time and in response, those out of power, the marginalized, develop—consciously or subconsciously—a revisionist view of the world that though suppressed and ignored by those in power, appears in subtle and

not so subtle ways from time to time. For example, I began, as did other Chicano middle-class individuals, to pronounce place and personal names in Spanish without the hint of English. I even began to place accent marks where appropriate in the many Spanish surnames that appear in the American-English public record: Martínez, Rodríguez, Hernández, García. These were the subtle signs of trying to *revise* the world. The more obvious sign was our active participation in the Chicano Movement for social change. For my part, I am very proud of my having helped to establish Chicano Studies, particularly the study of Chicano literature, as a legitimate body of knowledge in academia, a feat not easily accomplished and one that is still under attack these days.

More directly related to my personal story, I came to realize, slowly but surely, that Miss Jasper, my first school teacher, was as much a victim as I, for it was not uncommon for white administrators to punish and demote white teachers by assigning them to colored schools. Miss Jasper was merely striking out at us because she must have felt she could not strike at those who had the power to determine much of her life. In time, I came to see that whites, too, were poor and discriminated as a social class, a class they occupy, then and now, in greater numbers than ethnic Americans of color. In fact, in terms of real numbers, the majority of the poor, the hungry, the unemployed, the incarcerated, the uneducated, the dropouts, the drug addicts in the United States are white Americans. These are the invisible victims of marginalization, victims of false consciousness tethered to the wall in Plato's Cave. In short, those that laughed at our tacos were merely blind to their own situation. *Forgive them, Father, for they know not what they do.* And I have, for I now know that racism is a social disease that dehumanizes both the perpetrator and the victim.

So the acquisition of knowledge, education if you will, was a site of contention. Texts, I learned, were not to be memorized but analyzed. What was most important was not what a text said, but what it meant. Analysis required historical context and a recognition that texts hold different levels of meaning. As Freire implies, there is a difference between a liberal and a liberating education. The former reaffirms and cements the way things are while the latter opens the mind to new ways of seeing the world, to new ways of thinking about the world. Liberal education is generally presented as an ahistorical phenomenon with each bit of information having equal value, inevitably leading to note-taking as the essential component of learning and regurgitation as the principal means of evaluation. The lack of context in liberal education distances the learner/student in time and space from that which is to be learned, thus leading to the notion in the student's mind that most of what she learns is irrelevant. On the other hand, liberating education, Freire argues, leads to empowerment, to immediate relevancy insofar as it is understood as preparation for changing the world, the ultimate purpose of popular education, in his view.

Coming to consciousness, walking out of the cave, has brought both an enormous joy and an expected pain. The joy comes from understanding that knowing is an exciting lifetime endeavor; that there is always a higher level of understanding to be sought; that there are always new texts to read, new ideas to explore, new perspectives to gain; that there is always a brighter fire to face. The pain comes from the fact that coming to consciousness leads to counter-hegemonic

views of the world, views that—because they go against the prevailing (and rewarded) consensus view of the world—will make the critically conscious a persona non-grata among individuals who seek the rewards those in power can grant. But such marginalization is part of the politics of knowledge, part of the process of *problematizing* the world, as Freire points out. I am reminded that the individual who comes to consciousness, who turns around in Plato’s Cave, returns to convince the tethered individuals of a new reality, only to face hostility.

### Conclusion

Education—in its Latin root—has to do with “bringing up,” with “rearing,” as parents rear or bring up their children. In this respect, education is closely related to Plato’s Cave insofar as they both involve a “showing the way.” By “learning the way out of the cave,” an individual can learn to make his or her way through the world.

## EMBRACING THE EXPERIENCE

## Discovering a Love for Learning and a Passion for Chemistry

Santiago Toledo

What is the first thing that comes to mind when you read the following description?

*Bachelor's degree in chemistry with minors in math and physics, obtained a PhD in bioinorganic chemistry from the University of Washington studying the reactions mechanisms of metalloenzymes and currently teaching chemistry at a university.*

Some words that come to my mind when reading this are: confusing, boring, too much chemistry, hard. The description allows you to make conclusions about my academic career. But it tells you only about one dimension of who I am as a person; my goals in life, my passions, and personal story are not mentioned. Let's pretend you own a company that is hiring a person. You must make a decision about whom you will hire. Based on the limited information provided to you on the paragraph above, it would be nearly impossible for you to tell whether I would be a good employee for your company or not. You need multiple perspectives to make an educated decision of this magnitude. Of course, this same need is often present whether you are getting to know a person, reading a newspaper, understanding government policy, learning about a new culture, or adapting to a new job.

Let's try an experiment together.



Describe what you see on the left.

Some of you may see a line, some of you may see a mistake in typing, and some of you may see a long slanted poorly drawn slash. I personally see the molecule ethane, a two-carbon molecule often used in the chemical industry. My background in chemistry allows me to see a chemical compound. However, when seen from other perspectives that simple drawing can be perceived very differently.

Perspective was instrumental in helping me find out what I am passionate about in life and how to connect these passions with my career of choice. The story that follows reflects on my journey into the deep levels of the discipline of chemistry. This essay will tell the story of how perspective and other factors led to my passion for the study of chemistry. Learning about a new academic discipline like chemistry resembles the experience of moving to a foreign country. I have had the opportunity to experience both situations and I hope to show you how similar they are.

## Landing on New Ground

According to the immigration records, I am a legal resident alien of the United States of America. I was born in Quito, Ecuador twenty-nine years ago. I am an immigrant, one among millions in this country. I came here eleven years ago with the goal of learning English immediately after graduating from high school. Little did I know that that trip would lead me to immigrate and embark on a journey away from what I once called *home*. It all started with a somewhat naïve decision to study abroad as a high school student. This decision brought my perspectives and me on an unavoidable collision course of shocking proportions.

In 1999 when I left Ecuador, the internet was not very widespread in my home country. My access to world information, and particularly the United States, was limited to what I learned in high school English classes and on TV shows. My family voted me the least likely to leave mommy's side. Everyone thought I was going to fail at my attempt to experience the world. I wouldn't doubt if there were people betting I would be back before the end of my scheduled year aboard. Five days prior to my departure to the United States I was notified by the exchange student agency that I had been placed in Victoria, Texas. Other than the geographical location of Victoria, I didn't know much about the culture, people, food, or lifestyle in Texas. I knew nothing about the weather except that someone had told me that it got warm in Texas. In the highlands where I grew up *warm* means 78 degrees, so I packed my t-shirts and the only pair of shorts I owned, shorts from my soccer uniform. Prior to my departure my host family called me and we struggled unsuccessfully to communicate in each other's languages. The next thing I knew I was on a plane bound for Texas. My level of understanding of what I was about to do was ridiculously small. I still have no idea how my parents let me go under those circumstances. I have no idea why I decided to do such a crazy thing.

For the trip, the exchange agency gave every student a card which had our name, our status as exchange students, and the information about our connecting flight. The other students and I laughed at the idea of needing such a card. Mockingly I tucked it into my pocket and forgot about it. When we landed, I managed to get lost in the airport and quickly realized that the English which earned me A's in Ecuador could not do what was necessary in actual practice. Suddenly, that silly card tucked in my pocket was the only thing to save me.

Stepping off the airplane, I learned that my perspective on what *hot* meant would have to be radically adjusted. It was 104 degrees when I landed. Following that shock, my host family and I stammered through our first awkward encounter, and then the real lessons began. I was introduced to Jessica, a friend of my host family. Well, my parents had taught me good manners, so I kissed her cheek and gave her a hug. Yes, you guessed it! Wide-eyed, she had a different perspective on this exchange. I knew that I had done something wrong. This was my first tough lesson of culture shock. Jessica never spoke to me again that year. This little story shows once again the intense level of my ignorance. I couldn't communicate, I didn't understand the culture, and I was far away from everything that was familiar to me, far from everything I had called home.

After a month of nothing but shocks and novel cultural experiences in my host country, I was feeling sad and homesick. Do you have any idea what it is like not to be able to express how you feel? Sure, I could say the words sad, bad, happy, and excited when people asked me how I felt, but our feelings as humans are much more complex than these basic words express. I didn't have my music, my friends, my family, my favorite meals, or my culture. My *home* was replaced by confusion, new people, and all manner of strangeness. Several nights I cried myself to sleep because I felt powerless. Many nights I went to bed with painful headaches, I think mostly from trying to learn the new language. At that moment of my year abroad I had to make a decision. One option was to endure the sadness and wait for it to be alleviated by phone calls from home. I could grit my teeth and bide my time until I could return home to all things familiar. Fortunately, I chose instead to embrace the strange experiences, as I met new people and gained a new perspective on life. As a result, I learned to speak English that I could use every day and to understand the world more deeply.

### Rough Landings in the Airport of Chemistry

Becoming a chemist was a lot like entering into an unknown world. I came to college uninformed, intimidated, and scared. My limited perspective was often confused by the new complexity. I felt confident with my diploma tucked away in my pocket, but soon found that my high school math, science, and social science A's were not going to be sufficient to navigate the world of college that met me. I was faced once again with learning yet another language and entering yet another world.

Starting college is intimidating and scary. My level of ignorance about university life was like the lack of knowledge I had about Texas when I left my home country. The little I knew of college came from word of mouth, the internet, or movies. Coming out of high school and having been accepted to college gave me a sense of confidence. Just as I had inflated my own sense of confidence mocking the flight information card in Houston, now my grades in high school math, science, and social science courses made me overestimate my readiness for what lay ahead.

In college I was once again faced with the challenge of learning yet another language. Listening to my first chemistry lectures was like chatting with my host parents in the airport. The professor was talking, but he was not making any sense to me. In addition to the foreign language he was speaking, I had to figure out the new teaching and learning styles that sometimes made me feel like I was pecking Jessica on the cheek again. The grades from those first weeks in class stared back at me wide-eyed accusing me of doing wrong. At night, I struggled to fall asleep, tormented by the headaches that accompanied my exploration of the new language and culture of chemistry. Though I could not imagine it that first semester, my headaches would eventually give way to sleep and in time I would dream of becoming a chemist.

For my undergraduate training I was very fortunate to attend Texas Lutheran University. Although I did not really know what career I wanted to pursue, I was well aware that my family and I were investing a lot of money and sacrificing a lot

on this unknown exploration. Fortunately for me, during my years at TLU I got a four-year crash course on perspective and an introduction to looking at the world from a variety of angles. This ultimately helped me choose a path. I can now see how my experiences in finding my passion started with learning the language of chemistry in those first classes. The words that first stammered off my tongue eventually became my daily vocabulary. With this proficiency, I found that more and more of the concepts made sense. I saw how different areas of research fit together and supported each other. I slowly assimilated the methods that chemists have used to gather their research data. I spent time in the laboratories and became proficient at the processes that make experiments so useful. By the time I graduated, I had learned the history that had shaped chemistry over centuries, and more importantly, I became a resident of that discipline ready to make my own contributions.

The process of becoming a citizen in the world of chemistry was rather messy. I originally wanted to become a physicist or engineer, since I loved science, but I had hated my high school chemistry courses. I took chemistry my first semester at TLU to get it out of the way early and be done with it. During that first difficult semester of college, I struggled to learn the language of chemistry. I would read and reread pages from the chemistry book over and over before I began to understand them. I could not comprehend many of the words because I had no context in which to make sense of them. My classmates seemed more at ease learning the material and wondered why I had to spend so much time reading. The language skills they had learned elsewhere made me feel even more behind. I felt incapable of moving forward. Yet I had known these feelings before, so I drew on my earlier experience. I chose to also embrace this strange experience and allow chemistry to give me a new perspective on life. I would learn this strange language and come to understand the chemist's world more deeply.

Yet the language of textbooks was not my only challenge. A university lab was also a new world for me. In Ecuador, the limited amount of equipment meant that the teacher did the experiment while the high school students merely watched. We did not touch a thing. With my hands unoccupied, I would wonder why the teacher was repeating experiments that others had already done. What new knowledge could come from that? But in the university laboratory, doing the work myself, I came to appreciate this training. With practice I learned to be meticulous about my work and to carefully observe what was happening. Writing in my lab books taught me how to organize my thoughts and document scientific experiments so that later on I would be the one developing new and innovative research. After hours and years of training I knew I had the tools to go out and develop new, groundbreaking science. The road to proficiency is often painful and full of ups and downs, but undergraduate training is the perfect place to navigate them. Looking back, those hour by hour, day after day periods spent in lab made me a chemist.

After a first year of chemical training I was told by my advisor that it would be best if I continued learning chemistry. This time he steered me into a class called Organic Chemistry. This was, according to most of my peers, the devil incarnate of all classes. During this class I found myself applying the language I had learned in the first year and learning a whole new level of this language. I was putting paragraphs together with the words I had learned during my first year. Also, I was

exposed to a pictorial representation of the molecules we had talked about in the first year. I was able to draw molecules and in my head take in the idea that a line represented two carbon atoms or that a circle represented a group of electrons traveling around a molecule. It was truly a different world I was seeing. I felt I could make sense out of what I had thought to be nonsense just a short time ago. I could open books in Organic Chemistry and more or less follow what they said on the first time through. I could also look at the ingredient labels of some household products and picture their chemical structure. I was rather surprised at how fast my understanding of a subject moved in college. The analogy of a rollercoaster seems to fit.

By my junior and senior years, the upper division classes gave me a vision of the whole landscape of chemistry. Although their course titles and descriptions each sounded different, they each gave us another perspective on the fundamentals. I was holding a magnet that was drawing the information of the first two years together into a coherent whole. I now worked alongside a faculty member. The theory I had gathered moved into practice. I was working alongside my professor modifying the physical properties of plastics. With everything I had learned, now I was shaping the world in practical ways!

### Meeting the Neighbors

In my years at TLU I took classes in sociology, art, history, language, and international affairs. Each new discipline offered more experiences similar to those I had in my first chemistry encounters. The liberal arts curriculum gave me the freedom to explore and put my major into perspective. In the four years of taking science courses as well as classes outside of my area, I gradually developed an understanding of the key differences between social sciences, humanities, and the natural sciences. In the natural sciences there is not much room for interpretation of the theories being presented. Most of what is taught corresponds to laws and theories that have been subject to decades of research and experimentation in order to substantiate them. On the other hand, the humanities are constantly morphing and generating perspectives through processes that are also rigorous, though different from those that arise in the natural sciences. Some aspects of the social sciences resembled the processes of the scientific method, yet the human elements they studied, and the complications associated with that, also distinguished them from my own discipline's practices. This very fundamental understanding brought to light the particular values of the major I had chosen. By contrasting these distinctive approaches, I became aware that not everything in the world can be as black and white as the subject matter of the natural sciences. I realized that there is much uncertainty associated with human behavior and societal problems that can only be understood with the help of multiple points of view. In retrospect I find this to be a beautiful example of the complementary nature of a liberal arts education.

I was not always convinced of the power of a liberal arts education. I was initially frustrated at the idea of having to take classes like theology, history, and art. "Scientists don't need those kinds of classes," I told myself. "What a waste of time!" I considered these extra classes annoyances and obstacles to my future and my

goals. My parents also started questioning my decision to attend TLU. My family and I were unfamiliar with the concept of a liberal arts education; it seemed to contain a lot of unnecessary *fluff* to us.

With time I came to realize how important and formative it was for me to be exposed to the *languages* of a variety of disciplines throughout my journey. During my first semester in college I had to take one of these perceived *fluff* classes at TLU. I took this class with a faculty member from the political science department. The rumor was that this class was not very useful, and it was filled with busy work. This was not so. My Freshman Experience class quickly became an oasis for me during the long hours spent working on science and math. In this class, we were encouraged to share our perspectives about a variety of subjects. The written assignments made us think about philosophical problems that faced young learners. I felt that my opinion mattered as much as everyone else's as this class became a forum for conversation and healthy debate. We quickly learned about some of our peers' strong personalities and also about insightful individuals that only said something when they felt it was absolutely necessary. This class was a crash course in the new world of college, a place full of diverse opinions and personalities. I felt encouraged by the interactions during class. They made me realize that I was surrounded by people from a variety of walks of life, religious beliefs, and disciplinary passions. More importantly, I was able to compare and contrast the different ways of thinking my peers had to the scientific minds I was surrounded by in my major. This was a wonderful lesson about the larger world through which scientists have to navigate. Often it is hard for scientists to realize that the majority of the world doesn't speak their language. Not everyone takes science classes in college and few take as many courses as I have taken. Therefore they have limited vocabulary and training in what scientists do; they are like I was in that first chemistry class. Therefore, it is imperative that scientists learn to listen, to understand, and eventually to communicate with the rest of the non-scientific community. My Freshman Experience class showed me the importance of open-mindedness and open communication.

One challenge that I initially faced during my years at TLU was to be able to comprehend the religious affiliation of the University. At the time, I had not been exposed to many Christian denominations other than the Catholicism in which I was raised. My grandma back home was concerned that the Lutherans were out to brainwash me and take me away from years of Catholic upbringing. Her reaction was due to ignorance yet she represented the fears most of my family had at the moment. As I struggled to communicate the reality of what I experienced at TLU to my family, I managed to teach them some about the religious affiliation of the school. TLU was a healthy atmosphere of ecumenical work, learning, and mutual understanding. As my college years progressed I met people from a variety of religious affiliations. Grandma's fear aside, these people were not out to convert me or change what my beliefs were. Most of these people were excited about their faith, hopeful, and willing to make a positive impact in other people's lives.

I personally had worried that as a scientist my views of the world would be questioned in a religious institution, and that this pressure might compromise the values of my discipline. I need not have worried. TLU did not obstruct, oppose, or

limit scientific understanding with a narrow doctrinal posture, but rather facilitated open conversation and understanding between religion and science. This was a relief because I found no contradictions between my religious values and the world of science, its value system, and its complexity.

Science in general is constantly being challenged about its ethical stand when it comes to new discoveries and methods of experimentation. Although limited discussion about this matter was brought up in my science classes, I had the opportunity to explore ethical issues in yet another humanities class I had the privilege to take: Latin American History. You may ask why study Latin American history if I was from Latin America? Shouldn't I know all this? When United States students learn history, they tend to hear a limited perspective on even their own history. A United States history class in other countries has a completely different perspective on what has happened and why it matters. In the same way, I could gain a new perspective on my own heritage by taking a course in the U.S. By taking such courses, and reading North American media as they described events back home, I started to see things about my heritage I had never appreciated before. Seeing the country progress from an outside perspective helped me be more objective when it came to the politics of the ongoing changes. For example, this outside perspective of my homeland also helped me realize that Ecuador had an unfortunate culture of racism and segregation that was accepted and widespread. Social interactions, communication, and people's attitudes that I had taken as natural all of a sudden seemed questionable and even unfair, cruel, and inhumane. This class made me think about ethical issues of my own upbringing and, indirectly, made me sensitive to ethical issues that may come up in my career as a chemist.

During this class I also learned about how the cause-effect relationships of history led to the current state of the Ecuadorian culture. For the first time in my life the current condition of my country and its people started to make sense and fit into a historical perspective. I no longer accepted the norm or simply believed uncritically what I had been told. I started to learn to analyze and view things in light of the details before formulating my conclusions. "This sounds a lot like a scientific approach," I thought. What I had once thought to be unlikely—finding science lessons in a history class—had happened with ease.

### Lessons Learned and Movement Forward

This was the messy path I took during my undergraduate training as a chemist. It is important to point out that not all of my learning experiences came to me through the wonderful classes I was taking in chemistry and other sciences. A lot of the learning and complementary aspects of my education came from engaging in learning with people of diverse beliefs as I took college classes outside my major. In four years I had gone from being illiterate in the language of chemistry to being able to communicate and get around in that world. I had gone from simply knowing content to applying content and eventually to putting into practice my knowledge through research and experimentation. In those years I also understood the value of the scientific method and the differences between the scientific approach and that

of other disciplines. I went deep into the world of chemistry. But I also broadly expanded my education by visiting other disciplines. I learned how to communicate more effectively with people who had other training and other ways of thinking. I am confident in saying that every class I took contributed in one way or another to my formation as a chemist.

Through all these experiences I came to conclude that the mystery and excitement of research and scientific experimentation were a passion of mine. I had been captivated by the beauty of the complex—yet logical—world of research. So there it was. After a lot of exciting topics, class experiences, new language learning, large amounts of reading, and assimilation of new information, I had made a decision about my career. I wanted to be a research chemist...of some sort. Notice how indecisive that still sounded. As I graduated I realized how broad and multidisciplinary the world of chemistry itself was. This world contained many worlds. I told myself that there was no way I was going to stay within the small glimpse of chemistry I had gained. I needed to go deeper in my learning experience (just at a time when I thought there is no way to go deeper...) and the next logical step to satisfy my curiosity was graduate school. That is a subject for another day, but suffice it to say, the wisdom I gained in becoming educated at TLU provided me with the know-how to go yet deeper in the next phase of my journey. I had gained a perspective on learning that allowed me to move into new perspectives. I had learned how to learn.

## THE WRITE THING

### Writing and the Well-Examined Life

Annette Citzler

From our beginning, we were story-tellers, and we still are. I have a story. You have a story. We all need to tell our stories, and we all hunger to know the stories of others.

In our busy, highly technological and digitized lives, we can hardly imagine how it must have been eons ago, when bands of humans gathered under the stars at night, in too little light to do the work of the day, but enough light to enjoy one another's company. I remember being mesmerized by the night sounds while living in rural Liberia in West Africa in 1985, as groups of people gathered in the dark, around cooking fires or under kerosene lanterns, to play music, to sing and dance, and to tell stories. It was really not that different from my own family's sitting around a television set at night in the 1960's in America, except that someone far away in New York City or Hollywood was telling the stories to us, singing to us, playing the music for us.

Even today in a fully-developed modern society, the process of story-telling or listening to the stories of others fills much of our time. We go to movies or even make movies, or make or watch YouTube videos, or read books on our Kindle or write them on our ipads, or text someone about what we are doing—those are our forms of story-telling in the 21<sup>st</sup> century. The practice of story-telling is an inseparable part of our culture, identifying us as humans.

Perhaps other animal species have stories to tell also, and perhaps we will someday decipher the songs of whales that loop their way through hundreds of nautical miles of ocean;<sup>1</sup> perhaps someday we will unearth the language of elephants, transmitted through the deep waves of sound so low in frequency that humans cannot hear it, but can only sense the vibration in our bones as an elephant herd grazes nearby.<sup>2</sup> It is highly possible that someday language and the ability to communicate between individuals will no longer distinguish us from other animals. We may discover that language and communication through sound or other means is something that forms the distinct culture of dolphins or gorillas, just as it forms our own.

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<sup>1</sup> Clark, Christopher W., "Moving with the Herd," *Natural History*, Vol. 100 #3 (Mar., 1991), pp. 38-42.

<sup>2</sup> Payne, Katharine, *Silent Thunder: In the Presence of Elephants*, New York: Simon and Schuster, 1998.

But I want to argue in this essay that writing is in a different category from oral/aural communication: it is a distinct artifact of our culture, our society, our species, something that takes on its own existence, its own place in time once we set the words down, whether on a rock wall or a barn door or on paper or in a digital file. While some chimpanzees may now have been taught by humans to communicate using letters and objects,<sup>3</sup> and some elephants may have learned to paint abstract pictures,<sup>4</sup> and so on, there is no evidence yet that other species naturally engage in creating language-based artifacts to communicate with one another. Thus humans are unique in this respect: that we record things in writing for posterity.

But, so what?

Why is it significant that humans *do* engage in this process? Writing, I believe, has become the primary way we can expect to tell our stories to people we will *never* meet and speak to in person. It's the way we communicate across geographic space, sending our words to people living miles away or oceans away, or—through space probes—galaxies away. It's the way we communicate across time, across generations of humans, leaving behind us words that will tell our stories to people living 200 years from now or 2000 years from now. This implies that we humans have a consciousness of not only space but time, and of a progression of events through time, and even of an evolution of ourselves as humans through time. Writing, after all, did not exist for the first humans, and it may sometime in the future be replaced by a more sophisticated means of communication that will define still-more-highly-evolved human beings.

For now, when we consciously set down our thoughts and ideas and give them directly to others—or leave them indirectly for someone after us to find and dispose of or disseminate—we are in a very real sense acting on the impulse of human beings to immortalize ourselves somehow. Not all of us will have children, and even those of us who do nevertheless recognize that children have lives and ideas of their own. While they may carry our genes, there is not much likelihood that they will believe the same things we do or have precisely the same values we do, much less think like we do. And so we cannot rely on them to pass down to later generations the great ideas we believe have occurred to us, nor to pass on accurately an account of the major events in our lives. And so we write them down ourselves ... in diaries or journals, letters, epic poetry, dramas, novels, memoirs, essays, weblogs, research papers, advertising jingles, and haiku.

Why do we bother? Is our yearning for immortality purely egotistical? Could it be a grasping for the transcendent? Is it conviction that our ideas will matter to those who read these words later? Maybe it's a little bit of all of those, maybe some more than others for particular individuals, but for every writer, writing shapes our

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<sup>3</sup> Hanly, Elizabeth, "Listening to Koko," *Commonweal*, Vol. 131 #12 (June 18, 2004), pp. 14-17.

<sup>4</sup> "Pachyderms Paint Pictures," *Current Science*, Vol. 76, #11 (February 1, 1991), p. 3.

very thinking about our own lives, and so most of us do it because we *need* to do it, for our greater mental health and our clearer thought processes.

When Socrates asserted that the “unexamined life is not worth living,”<sup>5</sup> he could just as well have been suggesting we should take up pen (or ipad) and write down our life story for posterity. Writing has, in fact, become something that shapes every part of our lives, and in many cases makes it not only *worth* living, but even possible *to live*.

### Is There Human Life Without the Printed Word?

Explore with me for a few moments what our lives would be like without written language. First, you would not be reading this ... we would need to be in the same room so you could hear me saying this to you, or otherwise you would need to be listening to me or perhaps listening and watching me through Skype or some other form of techno-communication. Everything in our world on which letters or words are critical would be gone: no texting; no e-mail; no billboards; no mail delivery of printed materials; no newspapers and magazines and books, neither in hard form nor online; little need for printers other than for photographs; no license plates on cars; no restaurant menus; no trademarks or names for products involving the alphabet; no catalogs; no stop signs—or at least not with the word “stop” on them—no instruction manuals for new appliances; no textbooks or term papers; no calendars; no report cards; no greeting cards; no labels on food items or other consumer items; no inscriptions on cemetery gravestones; no printed ballots for elections; no birth certificates or other court records; no health records; no cookbooks or written recipes.

Second, our world would be a much-impooverished place intellectually and technologically. There would be no simple, low-tech way to convey ideas from one generation of people to the next. We would not have anything but people’s memories to help us learn about the past. If an event from 1900 didn’t stick in someone’s mind, or probably several minds, belonging to people of different generations, the latter of whom had to have heard about it rather than experienced it personally, it couldn’t have been conveyed to you now in the 21<sup>st</sup> century; if a set of instructions for how to operate a particular tool did not exist, and you knew no one who had previously used it, tough luck. Our knowledge of history would be limited to pictures that could have been drawn about events of the past: maybe we’d have memorialized the Vietnam War with a series of engravings of war scenes carved into black granite in Washington, DC, instead of with the names of those who died. Without written communication, the limits of human memory would prevent our knowing anything about the ancient Egyptians or the ancient Mayans or other civilizations whose written words, with meanings long-forgotten, we have deciphered only in recent times.

Third, there would be a very different concept of what we mean by culture: we would be able to talk about the difference between the truth and a lie, but we would not have this enormous body of writing that we call fiction, as well as plays and

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<sup>5</sup> Plato’s *Apology* (38a).

movies based on such works: we'd have only the stories that are made up and passed orally from one generation to the next as a way of passing down the whole sense of what our culture means and what it has come from. Imagine not having any of the works of Jane Austen or George Elliott or Hermann Melville or F. Scott Fitzgerald or Ayn Rand, none of Jack Kerouac or Hunter Thompson or Anne Frank except what might be recited aloud in a two-hour stage show some evening performed at a downtown theater or in a YouTube clip. And imagine all those actors and performers having to memorize their lines by listening to someone else say them out loud over and over, and their repeating them over and over to get them down perfectly.

Finally, the scope of education and all the disciplines of the academic world would be almost minute rather than the vast expanse of texts about which you have recently committed yourself to learn during your higher education years. The only sense of history we would have is whatever could be contained in the memories passed from one generation to the next. Theology would be sung or danced, rather than read from a sacred book: would we claim to know much at all about the life of Jesus? What about engineering? Without written records we could not know that the Romans were the ones who built the roads and the amphitheatres and the viaducts all over Europe, the Mediterranean area, and the Middle East. It would not be that easy to tell one another orally about all the artwork painted on the walls of caves in Lascaux, France, or on the ceiling of the Sistine Chapel. And it would be devilishly difficult to have the same appreciation for music, from classical to reggae and country-western to rap, if not a single piece of music had ever been published in a printed format, much less described in a written essay explaining it or critiquing it.

Without writing, the only technology we could convey from one generation to the next is whatever could be passed along by word of mouth directly from one user to another. Whatever science we might have would be conveyed by demonstrations or by sound, and that might be a very small universe of knowledge indeed. Imagine trying to explain the human genome without the use of the letters A, C, G, and T!<sup>6</sup> Without writing, people probably could have fought all the wars ever fought, and happily we would probably have done so with more rudimentary weapons, but we certainly could *not* have ever sent human beings to the moon already.

### Cultivating the Habit of Writing

The interior life of the mind is surely one of the things that make us truly human beings. Our inner voices talk to us often with words; we hear ourselves think with words. Many people believe they can think better about something by writing their ideas down, because seeing the words on paper helps them make sense of what they are thinking. The last two decades of research in psychology and neurobiology have demonstrated the role of language in brain development;<sup>7</sup> those of us who are

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<sup>6</sup> These letters stand for the four bases of DNA: adenine, cytosine, guanine, and thymine. See *The Double Helix*, by James D. Watson (1968, Penguin Books, p. 42).

<sup>7</sup> Kuniyoshi L. Sakai, "Language Acquisition and Brain Development," *Science* 4 November, 2005 (Vol. 310, No. 5749, pp. 815-819).

practiced writers know that putting thoughts down on paper helps us to think more clearly, or at least to put our thoughts into good order; the artists who drew animals on walls of caves were the forerunners of millions of us in later millennia who would instead carve initials or names on rocks at sites where we camped or picnicked or stared in awe at the natural vista displayed before us.

While a precious few of us in each generation are talented enough to become professional visual artists, conveying ideas in abstract symbols or in naturalistic shapes and colors, many more of us are able to convey ideas in words, once we learn to write. If born into one of the now-dominant literate world cultures, we spend many years in early childhood learning our letters, and simultaneously we learn to write our name, then later the entire alphabet; eventually we learn to form our ideas into words and sentences and finally paragraphs. If we are really talented, we are able to write essays not only comprehensible to others but weighted with meaning and perhaps feeling. While the internet has now made all of us into published authors, some few of us even succeed in making others willing to pay us for what we write, and so we make our living from the written word in one form or another.

That so many of us, whether professional writers or not, rejoice in putting words onto paper or on a screen is an indication of the power that writing has in identity-formation for us as individuals. Some of us rely on seeing words appear on paper to process information, and our memory depends on writing down what we hear in order to remember it. Many of us become so accustomed to putting our thoughts onto paper that we cannot conceive of a world in which we would *not* write down things.

Some of us are habitual letter-writers, though precious few still depend upon the postal mail service to send and receive those letters. The professional biographers who owe their success to letters written by and to the subject of their research are legion. From very early on, the regular habit of letter-writing has given us insights into the intimate personal life-details of people whose thoughts would never have come to us otherwise. The letters exchanged between John Adams, our second U.S. President, and his very smart wife Abigail during his time as U.S. envoy in Paris, for example, are tremendously helpful, giving us precious insights into both diplomacy and life on the home front in the first decade or so after our independence from Great Britain.<sup>8</sup> E-mails and texting are the modern-day equivalent of those longer, less frequent documents, and the intimacy of our thoughts that these convey is not one whit diminished. Except to make us more concise in our writing, e-mails and text messages will surely prove comparable to written letters of centuries and millennia past in their revelatory power to later researchers.

Another personal habit of writing is that of journaling, or keeping a daily diary. John Evelyn (1620-1706) and Samuel Pepys (1633-1703) made this practice famous in the English language, but there are countless others like them around the world and in still earlier centuries who wrote down their thoughts and observations from their daily lives on a regular basis. Diarist Anna Comnena (1083-1153), for example,

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<sup>8</sup> *The Letters of John and Abigail Adams*, Penguin Classics, 2003 (ed. by Frank Shuttleton).

the daughter of Byzantine Emperor Alexius I, is recognized as the first woman historian, and her work is valued for providing a non-European perspective on the first crusade.<sup>9</sup>

While journaling is a habit that humans have made use of ever since we have had the knack of writing, it is particularly important in the sciences. The journals of Diane Fosse and Jane Goodall, researchers for gorillas and chimpanzees, respectively, were the crucial basis for published papers that enhance our understanding of primate behavior and provide wondrous insights into the nature of human beings as well. Professional writers often use journals to keep track of ideas and snatches of conversations that they want to remember, perhaps for future use in a book or essay or play they expect to write. Creative people of all backgrounds and walks of life practice journaling as a means of recording and bringing order to their sometimes disparate thoughts and ideas. For the sake of their mental health, people under stress often resort to journal-writing to help them cope with the pressures of their lives. Journaling by people who are traveling is a long-standing practice in human history.

The practice of writing carries at least three identifiable functions in human existence: writing can be a means of self-identity for individual persons; it functions as a way for cultures to perpetuate themselves; and writing is a business for many of us, a means of making a living. Let's consider just a few occupations, one of which you might yourself be considering as a future professional endeavor: every discipline has its own characteristic writing. In business, there are corporate annual reports, news releases, investing prospectuses, contracts, and analysts' reports on stocks. In psychology, there are case notes, court reports on the sanity of alleged criminal perpetrators, and research reports. In journalism, there are on-air scripts, story proposals, investigative reports, editorials, features, and news stories. In law enforcement, there are incident reports, court filings, and settlement proposals. In government and politics there are legislative bills, briefing papers, solicitation letters, and speeches.

Will your profession require you to write with skill and imagination? The overwhelming odds are undeniably, *yes*. Whether there are financial rewards and promotions based directly on your writing ability is perhaps less important than the greater facility with language in general that comes from the practice of writing. You become a more confident person when you write well because you can meet people and carry on a conversation more easily; you can get up and make presentations and find the right words to answer spontaneous questions; you remember more details about the possible solutions to a problem when you have written about it; all of these things increase your value to an employer or add value to your own business if you are an entrepreneur. And you're just overall a more interesting person for other people to be around!

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<sup>9</sup> See *The Alexiad of Anna Comnena*, Penguin Classics, 1979.

## What about Writing at TLU?

And now for the more immediately practical side of this essay: what will you need to know about writing as you start your academic career here at TLU? The wary first-year student will realize that none of his or her professors will necessarily agree on the acceptable format, let alone content or writing style, for an assigned paper. A paper that might earn an A+ from an English professor might well earn a C, or an even lower grade, from a theology professor or a business professor. Why is that? Some of us focus the grade mostly on content and style; others grade equally on the basis of composition and content; others look more at form than at content, especially when the subject of the paper is something that is largely a mystery to us. All of us learned to write from different people, and we come at this from very different disciplines, which may use writing in very different ways. From legal briefs to medical reports to court documents to poetry to weblogs to research articles, every discipline has its own rules for writing.

So what's a new TLU student to do when it comes to writing papers? Virtually every professor would agree on one central thing: re-write, re-write, re-write. No essay or paper is ever totally perfect, even though it has been re-written, and even significantly revised, 10 to 20 times. Even the best of writers often profess themselves to be unsatisfied with something that has been published to widespread acclaim. This means, for an unseasoned writer, that it is crucial to start early on a paper or other written assignment, so as to leave time for revision, for consultation with others, for mulling over the wording or organization of the ideas. And the second thing we professors would all probably agree on is that the student should be absolutely certain he or she knows what the assignment is before beginning.

And here are other suggestions that at least some of my professor-colleagues would agree with: 1) work from an outline of the central ideas or arguments you are trying to make; 2) do thorough research using reliable sources; 3) in the editing process, include the habit of reading the paper *out loud in front of a mirror*: it will help you find more of your errors; 4) use the Writing Center to get professional help with problems or errors you are encountering frequently; 5) find someone else—perhaps another student in the class—who will read over your paper and give you pointers on where you might make further improvements in wording or grammar or organization.

Finally, keep in mind that none of us emerged from our mother's womb already knowing how to write perfectly. We all have to do this, because it's in our very nature as human beings to want to tell our story to others, and a bit of suffering to get better at this work of writing is to be well expected. As an educated person, you, too, will soon be equipped to tell your story ever more effectively to the world. And you, too, will leave your words behind later, whether in a diary, a journal, a collection of text messages, a research paper, a short story, a novel, a play, a blog, an essay, a book of poetry, or maybe even something else we haven't thought of yet!

No matter how you leave your words behind, be assured that the rest of your writing life, both in the time you are here at TLU and after you graduate, can be a genuinely exciting, story-telling enterprise! And in this community of learning, we're *all* here to help you make it so.



## QUANTITATIVE THINKING

### Why We Make You Take a Math Class at TLU

Betseygail Rand

You can get by in life without numerical literacy. Plenty of Americans do every day. The problem is that they are taking the longer route on everyday problems, because they avoid the shortcuts offered by logical thinking. Worse, they are gambling that a large crisis—signing a predatory house loan, being unable to understand the results of a genetic test—doesn't come their way. Math gives you the ability to navigate these situations. Math allows you to trust your own judgment.

When you get to your math class at TLU, we will outline everything that could ever go wrong, and teach you how to avoid it. (Oh, I'm kidding. We won't. We couldn't possibly.)

But when you get to your math class at TLU, we will give you simplified, distilled instructions for applying easy math to any context. (Again, I'm lying. I'm sorry.) Neither of these will happen. Let's take a look at how math, as a discipline, is laid out.

Math is like a house which has been built over a millennium, by adding walls here and there, until it stretches out like a maze. It had no single designer. Its paths and structure stretch out like a building complex. New rooms are being added on every day. This makes math hard to learn. Each day in a math class, you are plopped down in a new room in this house. You are taught the rules of the room. You are expected, gradually, to see how the rooms are connected. Eventually, you are expected to understand the layout of the house.

Wouldn't it be easier if math were like a traditional novel, with a beginning, middle, and end? You could start, work your way through it, and finish. I'd be out of work. Fortunately for me, we've got an unwieldy maze of math to deal with. My job is to determine the most relevant material for you, and take you on a tour through those rooms. Your job is to master that material.

So what is the most relevant material for you?

Fortunately, there is one easy answer that applies to everyone. (Again, I'm lying. What's with the lying?) Actually there is not one single answer that applies to everyone. What you want to do with your life informs which math courses will be most appropriate for you to take. Let's take a look at which majors are best served by which math classes.

*But first, didn't I take math in high school?*

You did. You passed the TAKS test, possibly with flying colors. You proficiently answered questions on assorted topics including geometry, linear equations, quadratic equations, and some word problems. And more. Are you done?

Probably not. Let's go back to the house, which symbolizes the big, messy building complex of mathematical topics. You have been in the basement. I hadn't even told you there's a basement, but there is, and it's dreary. Upstairs, on the main floor, it's more interesting. But we've kept you in the basement.

So what's upstairs in the real House of Math?

There is a lot. Enough to keep mathematicians employed indefinitely. (I myself spend time tiling the floors of the Dynamical Systems wing.) At TLU, we want to expose you to the parts of the house which are most useful to you. This depends on your major and what you want to do with your life.

Our entry level math classes are College Math and College Algebra.

College Algebra: - for majors in business administration, physics, chemistry, biology, math, computer science, psychology, political science, and certain tracks within kinesiology and education.

What do these majors have in common? They all require at least one class—math, chemistry, economics, biology, computer science, statistics, or physics—that uses material from College Algebra. College Algebra is foundational for any profession which communicates information using equations and graphs. This includes scientists and engineers, social scientists, anyone with a biology bent, some business majors, some kinesiology majors, and math majors.

What is covered in College Algebra? College Algebra covers linear equations, quadratic equations, functions, graphs, exponential functions, and logarithms. In other words, you've seen all the math in College Algebra before. It was all on the TAKS test.

If you are taking a math or science class which requires algebra skills, you must know your algebra cold, already, or you need to review algebra in College Algebra. This class is *still* in the Math Basement.

(Of course, if you are already great at algebra, you can take Elementary Functions or Calculus. But you must have been dreaming about Calculus ever since you were a small child, you nerd. We welcome you to the sunny first floor of the House of Math!)

College Math - for majors in English and communication, modern languages, fine arts, sociology, and certain tracks of kinesiology and education.

College Math covers logic and set theory, counting and probability, a bit of statistics, and a bit of personal finance. Good news! This class is not in the dreary basement.

This is the class we recommend if you won't be taking future classes with mathematical content. You will be introduced to new topics that you didn't see in

high school. It will force you to think in new ways, like learning to count up the total number of hypothetical events that could possibly happen. It covers mathematical topics which don't even have equations and variables.

What is a logical statement? Suppose someone says "If we drive our cars, we will experience global warming. We don't drive our cars. Therefore, we do not experience global warming."<sup>1</sup> This statement certainly smells fishy. How can you identify exactly what is wrong with it?

This is not an easy class. In terms of the House of Math, this class is a short tour around the first floor. Welcome! Pity the poor basement-dwellers.

*But why, oh why? Why do we need to take College Math?*

So we've covered the content of the two introductory courses. But you all are a curious bunch, full of questions like "Will this be on the test?" and "Can I leave now?" Surely you are asking *why* you need a math class, if you are not continuing on in a field with mathematical content.

*Reason 1: At TLU we believe that an educated adult forms her opinions based on grounded information about the world.*

Unfortunately, the media do not provide us with grounded information about the world. Rather, we are given a misleading mess of distortions intended to sell us stuff, persuade us, convince us, and romance us.

Therefore, the first goal of a math class is to give you the skills to assess incoming information about the world. We want you to be well-prepared for situations where you are presented with numerical information, and expected to make sense of it and connect the numbers with their meaning in the real world.

*Reason 2: We at TLU believe that in order to be an educated adult, you must be able to express yourself.*

What is your ideal hobby? Football, horses, Facebook, unicorns? Let's say you love unicorns, and you land your dream job managing Unicorn Tears for the Top Secret Services division of the US government. Under your brilliant guidance, Unicorn Tears have increased from 5% to 6% of all tears. You worked your pants off for this single percent increase, and it's time for your performance review.

You walk in boldly and proclaim, "Under my leadership, there has been a 20% increase in percentage points of Unicorn Tears!"

Did you just lie? Is that true? What if your nemesis pipes up with "Bah! She merely raised Unicorn Tears from 5% to 6% of all tears." Will you be able to defend your presentation of the data? Communication of results requires a solid mathematical background.

(For the record, you told the truth. You did increase Unicorn Tears percentage points by 20%. Nice job! Briefly, this is because we're using percentages in two different ways in this problem. 20% of five apples is one apple, and so a 20%

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<sup>1</sup> Example provided by Rebecca Clark, personal communication, May 2010.

increase of five apples gives you six apples. In this problem, instead of apples, our units are percentage points. So a 20% increase of five percentage points is one percentage point, yielding a total of six percentage points.)

Reason 3: *TLU is a liberal arts university. We want to expose you to a little bit of everything.*

Perhaps you will fall in love with a new subject and surprise yourself. By way of analogy, a friend of mine has a three-year-old daughter. The household rule is that when presented with a new food, the girl must take a “No, thank you” bite. She must try each item before saying “No, thank you.”

It is reasonable to think of your math class at TLU as your “No, thank you” bite. And who knows, perhaps you will love it. (I personally love math. For me, it contributes to the richness of life. Maybe one day you’ll sit in my office and we’ll wax philosophic about the joys of math for math’s sake.)

Reason 4: *There are true calamities which require mathematical competence.*

Many are financial, where an unscrupulous business preys on mathematically illiterate people. When they say “low, low interest rate,” what number should you have in mind? Can it change? How much are you actually paying over the life of the loan?

When I was pregnant with our first child, I tested positive on the Down Syndrome test. This belies a very complicated statement of probabilities: testing positive under the Down Syndrome test means that the probability that your child has Down Syndrome exceeds the miscarriage rate for amniocentesis. Amniocentesis is the only method which determines Down Syndrome with full certainty. The rate of miscarriage from amniocentesis is around 1 in 250.

How do you navigate the mathematical content of such a situation? Have they just provided you with evidence that your pregnancy is risky, or have they just reassured you that your pregnancy is safe? Can you phrase your questions to the genetic counselor, who is there to help explain the results? Or is it all so confusing that you feel overwhelmed?

Generally with these high stakes situations, non-mathematically literate people can find someone to help them. A resourceful person can collect advice from several sources and make a judgment call. Nevertheless, having the security to navigate the mathematical nuances yourself is a valuable thing.

Reason 5: *The last reason to take a math class is probably the most uncomfortable reason, but it exists nevertheless: people will judge you.*

Many educated people have an invisible inventory list of skills in their head, and they use this list to assess each other. Reading Shakespeare and Proust, knowing the anatomy of a cell, playing a musical instrument, and having a basic understanding of supply and demand could be on this list. (Please note: I have never read Proust and have forgotten the basic anatomy of a cell. Very few of us achieve everything on other people’s lists.)

Mathematical literacy is commonly on people’s lists. Educated people expect a basic level of mathematical literacy from each other. It indicates an ability to think

logically, to communicate information symbolically, and to understand data and numerical relationships.

Is this hostile and judgmental? Perhaps. Is mathematical literacy connected to being a good person? No, not at all.

Regardless, people are judged based on their mathematical fluency. If we provide you with a solid math background, then you will be able to identify judgmental situations and cooperate, or choose not to cooperate. Without the math background, you are at the mercy of circumstances.

In other words, mathematical literacy carries a social cachet, like playing an instrument or being able to fix cars. It's not strictly necessary, but it provides evidence that you are a well-rounded, educated adult.

### In Conclusion

We've outlined five reasons why every student at TLU must pass a math class:

1. to be able to assess incoming information,
2. to be able to communicate numerical information,
3. to give yourself an opportunity to discover your untapped love for math,
4. to prepare you to navigate rare, high-stakes situations, and finally,
5. to teach you what our society considers to be a basic mathematical literacy.

You're free to reject these reasons. Of course, if you find them inadequate, you won't be excused from your math requirement. But you'll be able to eloquently defend why you don't want to take a math class. (Please note: you should not burden your math professor with your eloquent reasons. But I bet your Freshmen Experience professor would love to hear them.)

Finally, I give you...

### How to Succeed in Your Math Class

Your brain is a muscle. By exercising it, you become faster and stronger, mentally. Often students believe that it is a fact that they are bad at math, and so they spend their time focusing on being frustrated instead of exercising their math muscles. It is not a fact that you are good or bad at math; your performance just reflects whether your math muscle has been developed yet, or not.

Getting in shape can be painful, and it must be done gradually. You cannot get in shape the night before a track meet. (This is why we teachers roll our eyes when we hear of a student pulling an all-nighter: the student is trying to get in shape overnight. What a futile task.)

Let's say you play soccer. At practice one day, your coach demonstrates a fancy new move that you've never seen before. Being an earnest young soccer player, you pay attention very closely. You even ask her to repeat the move a few times.

Did you just master the move? Of course not; you didn't even touch the ball. Yet math students often watch the instructor solve a problem on the chalkboard, and believe they are all set for the test.

Back to soccer practice. Your coach breaks the move down into four motions. She constructs a drill that gives everyone a chance to practice those four motions. Gradually she has you put them together in faster succession.

Did you just master the move? Of course not. Yet math students often practice simple problems in class, and assume they fully understand the material.

Back at soccer practice, it is time to scrimmage. You discover that under pressure, you completely fall apart when you try to execute your new move. That evening, you take the ball out and practice, again. You keep trying to execute the move in scrimmages. It takes hours of practice, spread out over days or weeks, but since you are determined, you eventually master the move. Eventually you can perform the move smoothly, under pressure, in a game.

This is true in math as well. Being able to slowly work a problem on the homework is not the same as having mastered a concept. But you are training your math muscle with each problem. You will know you're in shape, mathematically, when you can demonstrate understanding under pressure, on a math test.

It just takes time, and a willingness to build your brain's math muscle until it is in great shape. Math competency is just a muscle that anyone can train and develop. You just have to put in long practices, outside of class.

### How to Build Your Brain's Math Muscle

1. Go over your notes after every class. Outline your notes on a separate sheet of paper so that as more material accumulates, you'll develop an organized sense of the big picture.
2. Take the homework seriously. The goal is not to finish the homework as fast as possible; the goal is to train and develop the math muscle in your brain.
3. When you get stuck, there is much help available. All your instructors hold several hours of drop in office hours per week, and there is also free tutoring available. It's free! And it's tutoring! Get lots of help!
4. When studying for a test, pick new problems and force yourself to solve them without using your books and notes. If you get stuck, review the topic, and then try a similar problem without using your books and notes. Now you're actually scrimmaging. You are practicing understanding the material under pressure.
5. Students do worse when they don't get enough sleep. Get enough sleep. It's more important than most students think it is.

Keep at it! You'll do great! Good luck! If you have any questions for me, I'll be in a far-off corner of the House of Math. Kthxbye!

## FAITH ASKING QUESTIONS

### Theological Study in an Academic Context

Phil Ruge-Jones

For many people, theology, the academic area that thinks about God and God's ways in the world, should be a discipline that provides clear-cut answers to life's most perplexing questions. They walk into a university theology course and expect it to be Sunday School on steroids. They have heard that God speaks a clear word which God's creatures simply must listen to and obey. One of my students a few years back told me about how her church prepared her for university life. Jenna Burleson-Davis wrote:

I can remember faith in high school: forced, competitive, homogenous. I spent my high school years involved in a fundamentalist youth group of a large church in east Texas. Faith was difficult there—particularly for my curiosity. I can remember—as clear as if it happened yesterday—one bible study in particular. Three close friends and I sat in a circle, beginning a 7-week bible study on 'preparing for college'. The bible study was to get us ready for life after high school, to prepare us for making decisions away from our parents and our home church.

The bible study began by quoting a speech by a Princeton University president, to a crowd of new university students. The president spoke of the college experience as one where assumptions will be questioned, where identities will be changed, where new opinions will form and old ones will fade. He spoke with a high respect for questions, and with a certain faith in the process of questioning. He encouraged the new college students to embrace this period of uncertainty and multiplicity, because they will be stronger for it.

I read on. The bible study proceeded to explain its perspective on this speech: clearly, college is going to try to get you to question what you've been taught. Professors are going to tell you that the world is more complex than you ever thought—that some of your previous conceptions are flawed, that your home church isn't necessarily right. Then the study got to its main point. But the professors are wrong for that, they are satanic and deceptive. When you hear perspectives other than what you grew up with, you should reject them. You need to hold onto the truth that your parents have taught you, that your home church has taught you. They love you and raised you right. That truth is real. There cannot be multiple truths because everything is black and white. Do not get lost in the "land of the grey," giving into new ideas and questioning long-held beliefs.

I stopped reading and peered over my workbook to find my friends nodding. I wasn't as easily swayed. I had followed their "unquestioned black-and-white" for years and I knew where it led: to passive aggressive judgment and deep internal frustration.

Jenna soon found out that the bible study was correct about what would await her at Texas Lutheran University. Every day in classrooms, in lunch conversations, in the books she read, in international travel, in bible studies with her new friends, and in late night conversations, she was challenged to rethink what she had accepted as true, and to discover dimensions of reality that she never knew that she never knew. Yet she also discovered that the home bible study was wrong about the nature of this questioning. She came to confess that God, not Satan, was behind this process. She watched as a broader, more complex understanding of God's good creation unfolded within and around her. Questioning became a way for her to exercise her faithfulness. God was present in the whirlwind of discovery. Let's unpack Jenna's discovery.

### Questioning in the University

Men and women of faith embraced what Jenna discovered long before she was shown this possibility. Anselm of Canterbury, an archbishop, monk, and theologian of the eleventh century, offered a definition of theology that is still important today: faith seeking understanding. His slogan suggests that faith is restless in its quest to understand God. I translate his motto as *faith asking questions*. The reasons we ask questions about matters of faith at Texas Lutheran is at least in part because we belong to the university culture that embraces discovery, critical thinking, and multiplicity mentioned by that Princeton president. At TLU Jenna found herself asking who she was created to be, how God is active in the world, how religious language functions, in what ways her community of faith has been fruitful and in what ways it may have forgotten its purpose. Our mission statement celebrates "the liberating potential of the disciplined pursuit of academic excellence within the context of academic freedom." This applies to the full range of academic disciplines such as business, chemistry, history, and dramatic media. But it also goes with the discipline of theology. The mission statement goes on to claim, "In working to bring learning and faith into intimate relationship, Texas Lutheran University is discovering afresh that each can strengthen, clarify and enrich the other." We will explore what this might mean in the final section of the chapter.

### Questioning in the Bible

Our theology courses ask questions in part because of their university context, but even more importantly, Christian theology's primary source, the bible, also models such questioning. If God or an angel shows up today, we would immediately follow through on whatever God demands, no questions asked, right? Wrong. Within the biblical text, immediate positive responses to God's call are very rare. God appears to Abraham and Sarah in their old age and promises them children as numerous as the stars of the heaven. They respond with laughter and ask God if their age has been taken into account (Genesis 17:17; 18:12). When God calls the prophet Jeremiah, Jeremiah questions God regarding the wisdom of choosing someone so young for such a grand task (Jeremiah 1:4-10). When Moses, the most celebrated person of faith in the entire Hebrew Scriptures, encounters a burning bush and

hears the voice of God sending him to free the people of Israel, he raises up a fist full of objections (Exodus 3, 4). In the New Testament, Mary points out to God's angel that women who have not had sex do not bear children (Luke 1: 26-38). The apostle Paul on the road to Damascus finds the need to question the whole direction his life of faith has taken (Acts 9).

Even Jesus himself screams out a heart-wrenching question from the cross, "My God, my God, why have you forsaken me?" (Mark 15:34) This is not the first question that Jesus asks. In the Gospel of Mark, Jesus asks seventy questions culminating with that question about his forsakenness. These questions in the story create engagement with those reading or hearing the gospel and invite them to formulate questions of their own. Even Jesus' way of teaching in parables offers riddles rather than straightforward answers. His stories make people think and rethink what they assume they already know. One scholar summarizes how a parable functions in this way, "At its simplest the parable is a metaphor or a simile drawn from nature or common life, arresting the hearer by its vividness or strangeness, and leaving the mind in sufficient doubt about its precise application to tease it into active thought."<sup>1</sup>

This quotation reminds us that people of faith should expect the bible to direct questions at them. The bible interrogated Jenna with new questions during her time at TLU and I hope it will do the same for you. With great frequency the Scriptures ask us to reexamine our most basic assumptions. The prophet asks us, "Why do you spend your money for that which is not bread, and your labor for that which does not satisfy?" (Isaiah 55:2) The questions that Abraham and Sarah, Moses, and Mary asked of God flowed out of what God had first asked of them. When a man asks Jesus about limits to those he must treat as his neighbor, Jesus turns the question back, asking him whose neighbor he will choose to be (Luke 10:25-37). Often the greatest challenges to personal faith convictions come not from a skeptical world but from the God who escapes our every attempt at domestication.

### New Questions in Every Age

We also must ask questions about the faith because we encounter issues in life that the faith-filled people of yesterday never faced. Think of all the new possibilities and challenges that Jenna faces that her grandparents never knew. My own grandparents grew up in a world that did not contain nuclear weapons or pick-up trucks with drivers texting their friends. They had never known of people traveling to the moon or of scientists unraveling the mysteries of our DNA. My grandparents did not have neighbors practicing different world religions, nor did they play with any child who had two daddies, nor did they have computers that opened them up to see genocide unfold in Africa or heavy metal music played in Baghdad. Each of these new realities invites fresh questions of the faith that neither Moses nor the earthly Jesus ever had to ask, but that Jenna and you might. The God who is mystery has created a world filled with mystery whose unfolding in both glorious and tragic directions invites us to think things anew, even the things of God.

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<sup>1</sup> C. H. Dodd, *The Parables of the Kingdom* (Glasgow: Collins, 1961), 16.

## New Questions at Every Age

Meanwhile, *your* life is unfolding as you get older. The answers that worked for you when you were seven years old may no longer satisfy you today. Just as you have progressed beyond a third grade understanding of math and geography, you also can mature in your understanding of God. You face brand new experiences. A roommate challenges your way of seeing the world. A biology class makes you wonder about evolution and creation. A friend dies in a freak car accident. And then you realize that your faith must evolve so that it can take these challenges seriously and come out on the other side with hope. Faith can be your partner as you examine this world and your place in it. Sometimes this deep reflection will happen in a theology course or another class that gives you tools to think about such things. But at least as often, growth will happen far from the professor's presence as you and some friends dig deep into the questions you pose over waffles during a late night discussion at IHOP.

Some of you come with a different faith than Christianity, and your otherness will be a gift to the conversation. You might remind us of how that central Buddhist figure, Siddhartha, found that wisdom started when the suffering of the world questioned the comfort he had known. Or you might remind us of the Sufi poet Hafiz's musing on the limitations of religious explanations in a pain-filled world:

Dear world, I can offer  
An intelligent explanation  
For our suffering,  
But I hope it really makes sense  
To no one here,  
And come morning,  
You are again at God's door  
With ax and pickets,  
Eloquent petitions and complaints.<sup>2</sup>

We each come to know ourselves more clearly when we encounter those who see the world differently, especially when their truth breaks open the things we have taken for granted.

Some of you may find yourself in a time when religion does not seem to matter to you. You are invited to reflect on the shape that mature faith might take in those whom you will encounter in life. And you will be challenged to engage critically a more profound vision of faith than what you may have heard and rejected up until this point. While you may still in the end rebuff the claims of faith, you will do so in conversation with a more sophisticated articulation of that faith.

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<sup>2</sup> Hafiz, *The Gift: Poems by Hafiz the Great Sufi Master*, trans. Daniel Ladinsky (New York: Penguin Compass, 1999), 88.

## Questioning Our Knowledge of the One who is Mystery

If I was out watching baseball at TLU's Katt-Isbel Field and an impressive wind was pushing homeruns over the centerfield fence, I could not capture that wind in a box in order to show its power to my students in class the next day. Wind in a box is no longer wind. One of the common ways that many religions speak of God is *spirit*. In both of the original languages of the bible, Hebrew and Greek, the word for spirit can also be translated as wind. God the spirit cannot be enclosed in our conceptual boxes since *God in a box* is no longer God. The box cannot contain God's mystery.

The bible models faith asking questions because the God who addresses people through revelation never ceases to be a mystery. God who is infinite cannot be captured in finite concepts. Even our most refined knowledge of God at best points us toward God or gets us thinking in the right direction. What we know can never eliminate divine mystery. The ancient stories of Israel tell of a prophet named Isaiah who had a vision of God's presence filling the Temple. Facing this mystery, he confesses that his eyes could only see the hem of God's garment. Yet the hem alone filled the Temple (Isaiah 6:1-8). We need to be constantly paying attention so that we do not confuse our glimpses of God's garment with the whole of who God is.

We require our students to take theology classes at TLU because the dynamic nature of God must be explored anew in every generation. Author Kathleen Norris noted how she lost interest in her church: "I drifted away from religion when catechism came to the fore, and well-meaning adults who taught Sunday school and confirmation class seemed intent on putting the vastness of 'God' into small boxes of their own devising."<sup>3</sup>

One of the most influential Christian theologians of the last century, Karl Barth, wrote volume after volume on God. His *Church Dogmatics* on the shelves of the Blumberg Memorial Library has fourteen volumes with each housing 500 pages of very small print with a multitude of detailed footnotes. Barth was once asked what God thinks about his work. His response was something like, "God looks at me and says, 'Here comes Karl with his wheel barrel full of books thinking he has me figured out.' And then God laughs." We could throw up our hands and declare God a mystery before the work of theology even starts. Yet it is quite another thing to have poured yourself into rigorous academic work for thousands of pages, over years and years of effort, and then to realize how inadequate your knowledge of God remains. Barth invites us to the humility that knows we must continue to question what we believe we know of God.

### This Can Be Done

The process of examining one's deepest convictions is not without turmoil and anxiety. The intellectual rearranging of your mind's floor plan will be a constant reality through your courses each semester. Some days everything that was once trustworthy may feel called into question. Yet what you are actually experiencing is a

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<sup>3</sup> Kathleen Norris, *Amazing Grace: A Vocabulary of Faith* (New York: Riverhead Books, 1999), 2.

deepening and ripening process that is ultimately creative rather than destructive. In his book *In Face of Mystery: A Constructive Theology*, Gordon Kaufman promises us that we *can* endure the transitions that we undergo as we rethink our deepest convictions. He writes, “We are quite capable, thus, of living in a world even while it is being reconstructed, and of ourselves participating in the reshaping of our concepts and categories at the very moment we are using them to order our experience and give it meaning.”<sup>4</sup>

Jenna, whom we met at the beginning of this chapter, also testifies to the beauty and more profound complexity she experienced when she allowed her faith to ask deep questions. She describes the maturing process she underwent at Texas Lutheran University:

Soon enough, I found that in contrast to the constricting faith of high school, college nurtured my thoughts and brought fresh, trusting air to my questions. Theology and philosophy classes added new perspectives to my faith, and campus ministry groups provided friends with similar questions. A variety of professors took time to pursue my thoughts with me, to engage the learning process. I was even able to study abroad in the African country Namibia where diverse friends and experiences brought me to question my upbringing. Contrary to the bible study in high school, there was nothing evil about this questioning. In fact, I was able to recognize and address deeply held family patterns, the process of which strengthened my relationships with siblings and parents. With time, my whole family began to question assumptions, address issues, and ultimately heal. We were better off for the questions we asked. We were stronger and healthier. And so my faith has changed. It is now more authentic than ever before: voluntary, open, heterogeneous, alive.

I would add that Jenna’s experience is also my own. I was aided in the process by the conviction that a greater mystery held me as I reflected on the awe-inspiring majesty of God. While I questioned much of what I had simply assumed to be true, I entrusted myself to the God who wishes to be known and who holds us in divine arms of love even when we ourselves cannot hold it all together. The mystery that created the cosmos and everything in it invites me to humility and care in my own reflections. I know that when I glimpse God, it may only be the hem of that infinitely vast divine garment. Yet, even more, I confess that this majestic One has chosen in love to dwell among us. In Christ Jesus, the Creator of all willed to be among us beginning as a child wrapped in swaddling clothes who later grew in wisdom and stature. When his spirit moves within us, we too can become children of God. If the awesomeness of God invites caution, fear, and trembling, the wondrous love of that same God creates in me trust and courage to question my understanding of the One who dwells beyond all words.

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<sup>4</sup> Gordon D. Kaufman, *In Face of Mystery: A Constructive Theology* (Cambridge, MA: Harvard University Press, 1993), 50.

## The Continual Conversation

Few areas of theology are so persistent in university life as the question of the relationship between faith and reason. In particular, students encounter this tension when they begin to notice in a science class that the world's beginning was not a seven-day affair as the first chapter of the bible seems to declare. For many, this results in a crisis that demands that they choose between faithfulness to God's Word or to the discoveries of the natural sciences. Some endure this tension by compartmentalizing their life. "In my morning devotions I will let my mind dwell within Genesis' claims; in my biology class, I will commit to memory the processes of evolution." Such a maneuver not only creates an artificial dividing line through the heart of the campus but also etches its scar through the student's own life and integrity.

But how can we reconcile this conflict? In his book *Faith Seeking Understanding*, Daniel Migliore suggests three things that need to be kept in mind when reflecting on the relationship between theology and the sciences. These three points echo the confidence of the TLU mission statement when it says that these different areas "can strengthen, clarify and enrich the other." First of all, Migliore suggests that we must not confuse two very different ways of talking about things:

On the one hand, there is the language [of science] that speaks of data, empirical evidence, causal connections, and probable theories; on the other hand, there is the language [of faith] that speaks of rich symbols, images, and poetic cadences. To try to equate the scientific description of the origins of the world with the symbolic and metaphorical affirmations of biblical faith and theology is, as Karl Barth once put it, like trying to compare the sound of a vacuum cleaner with that of an organ.<sup>5</sup>

My own way of assimilating Migliore's point is to use the analogy of a loving relationship. I turn to my beloved and confess, "Before I met you, I did not breathe; there was no life within me; my heart did not pound beneath my rib cage." If she responds, "Really? Do you have a doctor's file to verify that?" she has totally missed my point. I am not offering a scientific description of the beginning of our life together but rather a poetic image that points to the enlivening spirit she has brought to me. If she insists on hearing it as a scientific description, she totally misses my point. To reduce my poetic cadences to data is to make of my words so much less than I intend them to be. The opening chapter of Genesis is not a scientific description of how the world came to be but a poetic confession of the gift of God who mysteriously is the source of our lives and cosmos.

Yet, Migliore continues, the differences in language do not mean that these two disciplines need be at war with each other. The theologian can embrace the claims of science and the scientist is often a person of faith even though she doesn't allow her faith to taint her research. Just as my life is richer with the inspiration that comes from both poetic utterances *and* doctor's charts, so also life in the academy can

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<sup>5</sup> Daniel L. Migliore, *Faith Seeking Understanding: An Introduction to Christian Theology* (Grand Rapids, MI: Wm. B. Eerdmans Publishing Company, 1991), 95.

know wholeness across campus in spite of the different purposes, methods, and kinds of language employed in different disciplines. Migliore claims:

There are multiple levels in the world of our experiences (physical, chemical, biological, personal, social, moral, religious), and each level is intelligible on its own terms as well as open to new understanding at a higher level. This means that we can explore the congruence of scientific and theological understandings of the world without insisting on a proof or disproof of the one by the other.<sup>6</sup>

As a specific application of this commitment he states, "...there is nothing inherently inconsistent in holding both to evolutionary theory and to faith in God, the creator."<sup>7</sup>

Finally, Migliore notes that not only is an intellectual war unnecessary between these diverse ways of thinking, but that these different broad fields of thought actually make positive contributions to each other. Theology's fluency in the language of metaphors can join in fruitful conversation with a scientist like Jacob Bronowski who has called attention to the way metaphors play a key role in scientific understanding.<sup>8</sup> Bronowski points out that while the day to day operations of science may focus on data and theory, often those practices are held in poetic metaphors that grant shape to the information gathered. Theology might also help sort out the role of moral and ethical issues as scientists discern where and how their creative energies will be focused. Science, in turn, can offer practical guidance toward particular ways that faithful people might address situations of crisis. How can faithful people serve their neighbors in need without assistance from science that would allow them to address issues from famine to the AIDS pandemic?

Even in terms of the theological issue most central to this chapter, science has much to teach theology. When my colleagues tell me that the universe is over billions and billions of years old, or that there are over one hundred and seventy billion galaxies in the observable universe, or when a biologist explains to me the complexities of the double helix that makes up my DNA or the complex interconnectedness within various ecosystems, how can I *not* be filled with wonder and awe and humility at the majesty of God's creation? What is more, I appreciate the observation by my colleague John McClusky, who is an astronomer, a chemist, and person of faith, when he hints at the two dimensions of mystery—majesty and love—that I mentioned earlier. After reflecting on the wonders of the cosmos and our planet's tiny place within it, he confesses, "... God is not only interested in the big, powerful, and important, but also the small, the meek, and seemingly insignificant."<sup>9</sup> This simple comment sets my mind on a quest to understand God's mystery once again.

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<sup>6</sup> Ibid., 96.

<sup>7</sup> Ibid.

<sup>8</sup> Jacob Bronowski, "The Nature of Scientific Reasoning" in *The Norton Reader: an Anthology of Expository Prose*, Tenth Edition. Linda H. Peterson, ed. (New York: Norton, 1988), 901-905.

<sup>9</sup> Lecture in Jackson Auditorium; Seguin, Texas (October 6, 2009).

## WELLNESS FOR LIFE

### Seven Components of Healthy Living

Casi Helbig

Just how important is your health to you? Have you ever noticed that everything else in life takes a back seat when you are sick? For example, have you ever tried to study for a major exam with a bad head cold or played in a big game while suffering from allergies? While good health is one of our most valuable possessions, we often take it for granted until it is lost. Wellness is defined as “an active process through which people become aware of, and make choices toward, a more successful existence”(National Wellness Institute, 2006). In the past, health professionals emphasized *treatment* of disease rather than its *prevention*. When we found ourselves in poor health, we sat in the doctor’s office and listened to the experts tell us how they would address the problem. Today the prospects of good health for Americans have never been better! We can now find cancerous cysts at very early stages with mammograms. We can now calculate growth patterns of babies prenatally with sonograms. We can determine the exact level of an injury through MRIs. And thanks to our immunizations and modern medicine, diseases such as polio, are obsolete, while others such as diabetes, can be treated. Health professionals encourage people to take an active approach in their health care, emphasizing the prevention of disease. In order to participate actively in wellness, one must control risk factors, the conditions that threaten wellness and increase the chances of developing or contracting disease (Anspaugh et al., 2009). Common risk factors include the use of tobacco products, abusing alcohol, inactivity, a diet high in fat and cholesterol, and lack of sleep. Using this proactive approach, people partner with health care providers to share in making decisions; the shift from passive to active participation places responsibility for wellness on the individual. So what does it take to maintain good health? In order to achieve a high level of wellness, one must maintain and balance multiple components of wellness. While wellness textbooks differ on how many components exist and which ones should be emphasized, this article will focus on the following seven: 1) spiritual, 2) social, 3) emotional, 4) intellectual, 5) occupational, 6) financial, and, of course, 7) physical.

#### Spiritual Wellness

When considering wellness, spirituality may be the last area people consider. Often physical fitness is the first thing that comes to mind. However, the body, mind, and spirit are intricately woven together, and for ultimate wellness, all parts must be considered. Spirituality is a belief in a source of value that transcends the boundaries of the self (Anspaugh, et al., 2009). Spiritual wellness encompasses values, ethics,

and morals. While spirituality does not necessarily adhere to any particular religious structure, it does involve a belief in some form of higher power, or God. Common spiritual practices include participating in Sunday school, worship attendance, prayer, reading scripture, and practicing forgiveness. The relationship between spirituality and a range of health conditions, including cancer, arthritis, drug abuse, sleep disorders, obesity, cardiac conditions, and psychological disorders is unmistakable and of growing interest among health researchers. Studies link regular church attendance with reduced chance of dying from stroke or heart disease, with lower blood pressure, lower suicide rates, and reduced depression. Many physicians today include prayer as an important part of recovery, thus testifying to the advantage of adding spirituality to modern medicine and physical therapy.

Forgiveness, in particular, is a new topic of interest to health researchers, as well as a practice emphasized by all major religions. Evidence suggests that the ability to forgive contributes to psychological and physical well-being. In a study of college students, participants who focused on personal grudges had elevated blood pressures, pulse rates, and muscle tension. In contrast, these factors returned to normal when participants learned to forgive (Mayo Clinic, 2005). What is forgiveness? Forgiveness begins by acknowledging the hurtful event and how you feel. Forgiveness is not condoning hurtful actions, forgetting what happened, looking the other way, excusing someone, or seeking revenge. Instead, it means letting go of the pain, even if the act was cruel and extreme. By forgiving, you choose to no longer define yourself as a victim and this takes the power of the perpetrator away. For example, a victim of abuse must learn to forgive their perpetrator, as hard as that is, so that the process of healing can begin and focus can return to necessary tasks, such as wellness (The International Forgiveness Institute, 2006). In addition to major violations, there are also minor grievances, such as roommate arguments or family disagreements. No matter the nature or degree of the offense, forgiveness is critical for achieving wellness. "Forgiveness breaks down walls, frees hearts, mends countries, restores families, and draws out the best in us. It can turn hatred into tenderness and the desire to destroy into a passion to protect. It is more powerful than any weapon, government, or wealth." (Thrall, McNicol & Lynch, 2004).

Is spirituality a separate box, having no connection to the other components of wellness, only to be opened on Sunday morning? Can spirituality stand up to the progress of science when it comes to wellness? "Most Americans want it all. We want to cheer on science's strides and still humble ourselves on the Sabbath. We want access to both MRIs and miracles" (Cray, 2006). It is time that we see spirituality as an essential component to overall health and wellness.

## Social Wellness

Social health involves interacting successfully with people and developing and maintaining intimacy with others. Numerous studies report on the advantage patients surrounded by a network of family and friends have over patients without a social support system in recovering from surgery or coping with chronic conditions (Anspaugh, 2006). According to the Mayo Clinic (1999), nearly 7,000 participants

were monitored for more than 17 years. Those lacking social connections were two to three times more likely to experience premature death than their socially connected peers. The same study discovered that older people who stay socially connected to others by volunteering live longer than those who don't volunteer. Social activities, such as visiting friends, attending church or playing games, forestall infections and protect against disease. Researchers suggests that adults, young and old alike, should stay connected either to other people, pets, or favorite hobbies (New England Journal of Medicine, 2000).

*The Social Report 2006* identifies five indicators of social connectedness: 1) telephone and internet access, 2) regular contact with family and friends, 3) trust in others, 4) loneliness, and 5) contact between young people and their parents. People are defined by their social roles, whether as students, athletes, friends, employees, or countless other roles. Everyone wants to feel like they belong and have a role to play in society. Support networks are also critical places to call on for help during difficult times. Social relationships contribute to a person's wellness, while loneliness and feelings of isolation have the opposite effect and thus can be detrimental to physical and emotional health (Ministry of Social Development, 2006).

## Emotional Wellness

The ability to control stress and express emotions appropriately and comfortably is critical for overall wellness. Achieving emotional wellness allows you to cope with setbacks, failures, or stressors. Many studies report on the connection between wellness and emotional health. Anger, for example, is linked to heart attacks. In a six-year study of 12,986 men and women, 256 participants had heart attacks. Individuals who were more prone to anger were almost three times more likely to have a heart attack than those who were less prone to anger (Ahmad, 2000; Tufts University, 2000). More recently, researchers followed medical students for 36 years following medical school. Students who became angry quickly under stress were three times more likely to develop premature heart disease and five times more likely to have an early heart attack (The Cleveland Clinic Foundation, 2006). Researchers now suggest that a history of anger is as strong a risk factor for heart attacks as is smoking and high blood pressure (Harvard Medical School, 2000). How does anger contribute to heart attacks? It induces a stress response that releases a myriad of chemicals that speed the development of fatty deposits in the heart and arteries (Anspaugh et.al., 2009). When angry, the body acts as if it is under attack and it prepares itself chemically and hormonally to defend itself. Stress hormone levels are elevated over time, possibly inducing disease. Therefore, anger management therapy is critical for overall wellness in individuals with a penchant for high levels of anger.

Many other health problems are rooted in emotional stressors. "Health conditions ranging from hives to cancer may have as their origin a breakdown in the body's immune system caused by the body's response to emotional stressors" (Anspaugh et al., 2009). Dr. Hans Selye (1975) was the first to define the term stress as the "nonspecific response of the body to any demands made upon it." A stressor is any physical, psychological, or environmental event or condition that initiates the

stress response. Stressors disrupt the body's hormone balance, which may trigger health problems. Stress-coping techniques are critical for preventing and treating many health problems. "It is often said that stress is one of the most destructive elements in people's daily lives, but that is only a half truth. The way we react to stress appears to be more important than the stress itself" (Siegel, 1988). The effect of stress can be used both positively and negatively, either as motivating or destructive. The college years are often a time when stress can become a major factor. Common stressors of college life include academic performance, money problems, loneliness, choice of major, lack of privacy, social alienation, sexual pressures, drug pressures, and relationship decisions.

As any wellness textbook will illustrate, each time a stressful event occurs, a series of neurological and hormonal messages are sent throughout the body. The limbic system contains centers for emotions, memory and hormone production and includes the pituitary gland, thalamus, and hypothalamus. The hypothalamus sends a hormonal message to the pituitary gland, which then provides fuel to respond with the fight or flight response. Other physiological changes that are initiated are increased blood pressure, increased heart rate, increased oxygen consumption, and the release of hormones called endorphins, which decrease sensations of pain. Studies show that chronic stress suppresses the body's ability to initiate an effective immune response. Our immune system is a part of the body's defense against illnesses and disease. Because stress affects the immune system, the body becomes more susceptible to a multitude of ailments, from colds to cancer. It is critical to be aware of one's stressors and how to combat stress. Common stress relievers are: prayer, books, movies, TV, exercise, reading/learning scripture, hobbies, and music. Scripture refers to taking a Sabbath, and while it may sound like an outdated term, there are huge benefits to emotional wellness for college students to take time to rest.

If powerful emotions such as anger and stress can have a negative effect on health, might it also be true that powerful positive emotions, such as humor and laughter, are good for health? Recent studies now suggest that laughter may be heart-protective. Researchers at the University of Maryland found that people with heart disease were 40 percent less likely to laugh in uncomfortable situations and were less likely to recognize humor, compared with people of the same age without heart disease (Consumers Union, 2001). How does laughter protect the heart? The answer is not clearly understood, but according to Consumers Union (2001), some possible explanations include: 1) Laughter decreases serum cortisol, a stress hormone related to several diseases, including heart disease; 2) laughing releases chemicals, such as nitrous oxide (also known as laughing gas), that relax blood vessels; 3) laughter increases blood levels of immunoglobulin A, an antibody that fights bacterial and viral infections; 4) laughter may boost disease-fighting T-cells and natural killer cells; 5) laughter involves the contraction and relaxation of muscles in the face, shoulders, abdomen, and diaphragm which may alleviate pain due to arthritis; 6) laughing changes the normal breathing pattern, ventilation, and circulation. As stress and responsibilities increase, people often don't take the time to laugh. This list is evidence that laughter is in fact the best medicine.

## Intellectual Wellness

The intellectual component of wellness involves lifelong learning and striving for continued growth. It assumes responsibility for eliminating the discrepancy between knowledge and behavior, often referred to as the health-behavior gap. For example, college students are aware of the risk of binge drinking or drinking and driving, yet many continue to participate in those activities. For wellness to occur, people must act on the information they learn. An intellectually well person applies the concepts of locus of control and self-efficacy. Locus of control refers to a person's view or attitude about his or her role in wellness and illness. Locus of control may be either internal or external. When people view problems concerning their health as out of their control, they have an external locus of control. However, people who have an internal locus of control view their own behaviors as having significant effects and can change the course of their health (Anspaugh, 2009). Examples of external locus of control are blaming an alcohol addiction or uncontrolled anger on genetics, while examples internal locus of control are adding physical activity and reducing food portions in order to hit a healthy weight. People with optimistic attitudes recover faster from surgery, have less heart disease, have better mental health, and live longer than people who have a pessimistic outlook (Consumers Union, 2004; New England Journal of Medicine, 2005; Tufts University, 2003).

Another related influence on intellectual wellness is self-efficacy. Self-efficacy refers to "a person's belief in his or her ability to accomplish a specific task or behavior" (Anspaugh, 2009). For wellness to be achieved, people must see themselves as successful and believe that they can accomplish a task. Obese men and women participated in an eight-week, very-low calorie diet program. Those who had a higher level of self-efficacy and didn't blame their weight on things outside of their control (e.g., metabolism, heredity, etc.) lost more weight than their peers who experienced low self-efficacy (Wamsteker et al., 2005). Researchers conclude that locus of control and self-efficacy work together as strong predictors of health behaviors and success. While locus of control establishes an attitude toward one's role in achieving wellness, self-efficacy establishes behavior.

In addition to the role intellectual wellness plays in making good health choices, there is also a link between movement and brain development. Animal studies show that those who were allowed to exercise have more brain connections and greater brain density than their peers who were deprived of exercise. Rats were divided into two groups, one with exercise toys and the other without. After a period of time, the brains of both groups were compared. The exercising rats had brains that outweighed their sedentary counterparts, and that included more neurons and dendrites. Studies on children are more limited; however, early childhood preschool programs that offer a variety of stimuli appear to have a positive effect on IQ (Gabbard, 2008). It appears that the brain and the body have a reciprocal positive relationship on each other.

## Occupational Wellness

The ability to achieve a balance between work, school, family, and leisure time is known as occupational wellness. Striving for occupational wellness adds focus to one's life and allows for personal satisfaction in life through work. Changes in careers and jobs create stress and can make occupational wellness a challenge. The average person will change careers multiple times over the course of a lifetime. Women in the work force who are also mothers experience added stress when trying to juggle both family and work. It appears that occupational wellness can have a direct impact on physical wellness, and vice versa. For example, an unstable employment history and shorter duration of current job are linked with a greater prevalence of smoking and greater alcohol consumption (Metcalf, et al., 2001). Likewise, it is easier for healthy persons to find work, as well as to maintain long-term employment. An inability to achieve occupational wellness can negatively impact a person's life. However, a great deal of satisfaction for meaning and purpose is discovered when occupational wellness is achieved. Victor Frankl says, "Life is never made unbearable by circumstances, but only by lack of meaning and purpose." We were created to do God's work in many different ways. Occupational wellness is much more than finding a way to make a living and setting boundaries to the number of hours worked. It is also finding a way to use the strengths that God has given you while serving others.

## Financial Wellness

In today's economy, the topic of finances is on everyone's mind. Most people don't think of connecting health and finances, and it is doubtful that you would see this component in any wellness textbook. However, the two can go hand in hand. The number one reason for divorce revolves around the topic of money. In addition, it is often a cause of stress, stress-related disease, and suicide. According to a 2004 National Omnibus Survey, 60% of working Americans experience moderate to high levels of financial stress. It is critical that the culture of college students regarding money matters changes, not only for the economy of the nation, but also for individual wellness.

It may not be difficult to convince you that financial health ties into emotional health. However, many college students think that money management does not relate to them yet because they don't have any money to manage. Most college students are still financially dependent upon their parents to some degree, so topics such as health insurance, retirement savings, investing, and giving do not seem to be applicable to them. However, the college years are the perfect time to start thinking about money matters. You see, financial wellness is about being educated and forming a philosophy of how you want to live your life.

According to Dave Ramsey, "One definition of maturity is learning to delay pleasure. Children do what feels good; adults devise a plan and follow it." For example, let's say you want to purchase some new furniture for your first apartment, which is valued at \$4,000. Most furniture stores will sell their financing contracts to finance companies. This means you will have borrowed the cost of the furniture at

24% with payment of \$211 per month for 24 months. So, you will pay a total of \$5,064, plus insurance, for that \$4,000 set. But if you save the \$211 per month for only 19 months, you will be able to pay cash. If this is true for furniture imagine what it means for even larger purchases like a car or truck. Do you realize how much money you can save if you decide you are never going to have a car payment? The New Testament letter to the Hebrews 12:11 says, “No discipline seems pleasant at the time, but painful. Later on, however, it produces a harvest of righteousness and peace for those who have been trained by it.”

What about those little decisions we make on a daily basis? For example, think of the money we spend on lunch or on gourmet coffee. The power of compound interest is shocking! What would happen if you took the \$5 that you spend a day on coffee—which costs you approximately \$150 per month—and invested it instead. If you invested \$5 a day from the age of 16 to 76 at 12% interest, you would have earned \$19,371,943! That is why it is not too early to start thinking about money. Daily decisions can make a *huge* impact. Evaluate each purchase asking if it really is worth the cost in the long run. Building wealth is a marathon, not a sprint, and discipline is a key ingredient. According to Ramsey, “You will either learn to manage money, or the lack of it will always manage you.”

There are many myths out there that college students buy into, such as that car payments are a way of life, a credit card teaches responsibility, a new car purchase can get you a better deal, and debt helps build credit. College students are a prime target for credit card companies. They will often rely on credit during the college years, and end up working years to pay off the debt that has accrued.

Should we even be concerned with building wealth? Psalm 62:10 says, “If riches increase, do not set your heart on them.” We know that we cannot serve two masters. We cannot serve both God and money. So why should we be concerned with building wealth at all? Just as we have been asked to take care of the physical body that has been given to us, we should also be good stewards of the financial means given to us. There is a security and a feeling of responsibility when we are wise with money decisions. In some cases, you may be changing your family tree by deciding not to live in debt. In addition, living a debt-free life will set you up to be able to give to others. There is enormous joy when one is able to give to others. Booker T. Washington once said, “The happiest people in the world are those who do the most for others.” Therefore, it is imperative to educate oneself on money matters and make financial wellness a priority. It will positively affect relationships, quality of life, and overall health and well-being.

## Physical Wellness

The physical component of wellness involves the ability to carry out daily tasks. It includes performance-related components, health-related components, maintenance of adequate nutrition, as well as avoidance of tobacco, drugs, and alcohol abuse. Most textbooks will agree that there are six performance-related components of physical fitness: reaction time, agility, power, balance, speed, and coordination. These are necessary for children as they enter the sports skill phase (ages 6-12) and begin to get more competitive in sports. These components are also essential to

maintain during the aging process to help senior adults carry out necessary tasks, such as driving and independent living. Most wellness textbooks agree that there are five health-related components. Therefore, emphasis will be placed on *cardiovascular fitness, muscular strength, muscular endurance, flexibility, and body composition*.

Technology has increased productivity in America while reducing and in some cases eliminating the amount of physical work for the labor force. Physical fitness for most of the population can no longer be attained on the job, and Americans must now find time during leisure hours to exercise. Of the five health-related components, *cardiovascular endurance* is the most important and the foundation of total fitness. Physical inactivity has been officially recognized as a major risk factor for cardiovascular disease by the American Heart Association (2006). Cardiovascular disease is the leading cause of death in the United States, accounting for 37.3 percent of deaths (American Heart Association, 2006a). Approximately 1.5 million heart attacks occur each year, and 500,000 of these result in death. The latest Surgeon General Report suggests sixty minutes of physical activity with a low to moderate intensity most days of the week. The suggested sixty minutes of activity can be spread out over the entire day and can include daily tasks such as walking to the car or taking the stairs. Aerobic activity, in which oxygen demand can be met continuously during performance, is the necessary prescription for a healthy heart. Popular aerobic options include walking, jogging, cycling, rollerblading, skateboarding, skiing, swimming, hiking, as well as individual and team sports.

Evidence continues to grow for the importance of *muscular strength and endurance*. The muscular system improves through resistive forms of exercise, such as weight training and calisthenics. Sixty-five percent of the body's muscles are located above the waist, and most aerobic activities provide limited stimulation of upper body musculature. Therefore, strength training and aerobic exercise complement each other. Aerobic activities target the heart and lower body, while resistance training hits all of the upper body muscles and core. The benefits of resistance training are numerous, but some of the most important include better posture, increased bone density, less lower back pain, better sleep, elevated mood, and weight management (Anspaugh, 2009).

*Flexibility* may be the health-related component that is most often neglected. The goal of flexibility training is to increase the range of motion of a joint or series of joints. Young people are more flexible than adults because tendons lose their elasticity with age. It is uncommon for flexibility to decline in one's early to mid-20s. There are many benefits to flexibility training, but the most important is retaining independence. Inflexible muscles around the joints will eventually inhibit activities of daily life, such as dressing and bathing. Other benefits of stretching include improved posture, reduction of tension, prevention of low back pain, relief of muscle cramps, relief of muscle soreness, prevention of injury, and faster recovery after injury. The most common method of flexibility training is the static stretch, which involves slowly moving to the desired position, and holding that position for a minimum of ten to fifteen seconds. Stretching exercises can be included in the warm-up prior to aerobic exercise, in the cool down following exercise, or on non-exercise days. Stretching should only be done after five to ten minutes of light cardiovascular activities. Stretching cold muscles increases the probability of

incurring a soft tissue injury. The highest payback from stretching comes at the end of an aerobic or resistive workout. Pilates, tai chi, and yoga are popular techniques designed to increase range of motion. While flexibility training may be the most neglected health-related component, it is also the one in which performance gains, through daily stretches, can be made at a faster rate than the others.

The final health-related component of physical fitness is body composition. From the perspective of health and fitness, the body's composition can be separated into two categories: fat and fat-free mass (i.e., water, muscle, protein, minerals, bones, blood). *Body composition* is defined as the ratio of fat to fat-free mass. Excessive fat, especially when stored in the abdominal region, increases the risk for numerous health issues, including Type 2 diabetes, high blood pressure, heart disease, stroke, and some forms of cancer. Secular trend is the comparison of one generation to the next in terms of growth and development. Adult obesity rates have grown from 15 percent in 1980 to 32 percent in 2004, regardless of region (Levi, Juliano, & Segal, 2006). Sixteen percent of children and adolescents (ages 6 to 19) are obese. This rate has doubled during the past twenty years among preteens and tripled among teenagers (Neergaard, 2006). Experts believe that this secular trend is causing females to hit puberty earlier due to increased levels of estrogen. In addition, researchers predict that average lifespan could begin to decrease. The cause of obesity is a complicated interweaving of inactivity, overeating, age, metabolism, gender, heredity, and an unhealthy food culture. It seems like the more legislation-regulating nutrition that we pass, the fatter we get. The only hope for America in terms of obesity is to dramatically decrease portion sizes, replace soft drinks with water, and implement daily physical activity. This is not something we can legislate. While our schools are working hard to combat this epidemic, this is a battle that must be fought in the homes as well. Parents and teachers will have to join together to change lifestyle patterns and save lives. In addition, until our spiritual and emotional areas of life are fulfilled and healed, we will continue to go to food for comfort.

On the flip side, a growing number of Americans are obsessing over body fat and body weight. This is particularly true of the college population. Dieting is at an all-time high, and even children are getting the message that dieting is fashionable. In a recent kinesiology capstone project, Seguin 2<sup>nd</sup> graders were given a questionnaire on nutrition and fitness. Over 50 percent of 2<sup>nd</sup> graders answered that they "needed to lose weight." This can lead to an obsession, which has now been termed orthorexics, an unhealthy obsession with healthy eating (Pollan, 2008). Michael Pollan's *In Defense of Food* claims, "...we are becoming a nation of orthorexics." While the term does not refer to an eating disorder recognized by the Diagnostic and Statistical Manual of Mental Disorders, it can lead into eating disorders. Anorexia nervosa and bulimia nervosa are eating disorders familiar to most Americans. Anorexia nervosa is a refusal to maintain a minimally normal weight for age and height. The hallmark of the disease is a refusal to eat. Bulimia nervosa is characterized by alternate cycles of binge eating and restrictive eating. Binges are usually followed by purging, primarily by self-induced vomiting supplemented with laxatives, diuretics, or excessive exercise. Causes of eating disorders are usually a combination of biological, social, and psychological factors.

Eating disorders, if left untreated, have both physical and psychological ramifications that will negatively affect all areas of life. The physical ramifications include low energy level and electrolyte imbalances. Psychological ramifications include guilt, shame, depression, self-disgust, and anxiety. Our ultimate goal in this area should be freedom, freedom from obsession and unrealistic expectations, freedom from gluttony and laziness. First Corinthians 6:19 says, “Do you not know that your body is a temple of the Holy Spirit, who is in you, whom you have received from God? You are not your own.”

Wellness requires the consistent balancing of spiritual, social, emotional, intellectual, occupational, financial, and physical dimensions. If one of the components is missing or weak, it will invade other areas of wellness like a cancer spreading throughout the body. The mind, body, and spirit are inseparably linked. A breakdown in any one of these can threaten health and wellness. Rather than a one-time goal, achieving wellness requires a lifelong commitment. However, in the long run, a life of health and wholeness is worth the cost and sacrifice.

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## TOWARDS MEANING

### From Reductive to Holistic Engagement

Kyle Olson

I have a proposal for you. Ready? Here it is. Most everything you know about art is wrong. And you aren't alone. Many professionals who make a living in some way from art don't have a concrete understanding of art. I'm not alone in thinking this either.<sup>1</sup> There are a good number of valid arguments as to why this is the case. For instance, we might blame particular artists or art movements for creating confusion, steering art off course, or for emphasizing ambiguity. Or we could place blame on a variety of historical movements or even contemporary developments. We could use the rhetoric of the economist to analyze detrimental effects of the art market on art history. However, I don't think these are complete or convincing arguments. Actually, the reason for the pervasiveness of this confusion is much simpler than that and offers a glimpse at a larger problem within art. The problem lies in the type of behavior I have started in the last few sentences. By offering a variety of possibilities with various levels of validity I have set up a situation where I will act as an interpreter. I will argue for or against something. I will hopefully do so convincingly or persuasively. I will analyze both sides with enough depth and vigor as to convince you my interpretation is logically sound. Analysis and interpretation can be destructive, but they need not be. When consciously used as a secondary resource, these activities can be useful in the Visual Arts and in the Arts more generally. However, when they become the primary means of understanding and experiencing art, then the holistic experience of art itself is lost to the immediacy of interpretation.

As pointed out, the confusion exists among the experts and the untrained. A reason for the persistence of the problem among experienced members of the field is that professionals spend intense amounts of time studying and practicing analysis and interpretation. The nature of the material, the amount and intensity of time, and the enrichment gained through these practices all cause professionals within the arts to confuse interpretation and analysis with the primary form of engagement with art. They no longer serve as *enriching* tools, but instead become the *primary* means of

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<sup>1</sup> Various contemporary criticisms that support this statement are readily available including those by Dennis Dutton and Daniel Siedell. For instance see Dutton, Dennis, *The Art Instinct: Beauty, Pleasure, and Human Evolution*. (New York: Bloomsbury, 2008). For a supporting critique from an uniquely Christian commentator see Siedell's, *God in the Gallery*. (Grand Rapids, MI: Baker Academic, 2008). A shorter work by Siedell can be found in his article "Art After Fifth Grade" <http://www.cardus.ca/comment/article/2150/art-after-fifth-grade>.

experiencing art. This confusion then trickles down to everyone else through a wide variety of channels such as conversation, advertising, or essays.

Again analysis and interpretation can be good. However, when art is forced into a fixed framework in order to reinforce the thoughts and assumptions of the interpreter, we can definitely claim this misuses analysis and interpretation. Art serves the interpreter rather than the interpreter serving art. But not every case is this cut and dry.

Let me then offer some examples to help clarify the dilemma of interpretation. Try this: think back to when you could be excited by almost anything. You had yet to experience cynicism or irony. Back then emotions were intense and immediate. Can you recall an instance where you experienced joy physically and mentally at the same time? Did you play in the cool mud on a warm day? Did you experience the feel of the wet earth in your hands as you made a little mud fort. No, not something you did? How about a sandbox or a beach? Can you recall the feeling of damp grains sticking between fingers and toes as you learned how to pack sand into plastic buckets that would become castle walls or turrets? You turn the container of packed sand over and then pull the bucket or cup up, your anticipation over what might happen becomes joy at seeing the sand slide out of the bucket and stand by itself.

Still not you? How about the feeling of dipping your finger into one paint color and then another not knowing what happens when two colors mix. As you slip your finger across the slick paper you experience the joy of seeing those colors mix in front of your eyes. Depending on how you dip your finger in the colors and how you slide your finger and rotate your hand the colors mix differently but only where they meet. It is so easy to do and such a new experience that you giggle a little and the mixing colors respond as the giggle reverberates through your body and out to the tip of your finger.

These are the types of experiences that are closest to what I would call a holistic art experience. In this experience, the whole is much greater than the sum of the parts. Reducing these experiences to smaller parts as part of systematic approach to interpretation does not offer anything to either the person who experienced the art or to the interpreter. An immediate and powerful experience affects our body and mind simultaneously and makes us aware of both in a very particular way. Why is this holistic experience so rare for us?

## Fragmentation

One of the hallmarks of our postmodern lives is the fragmentation we experience in so many ways. The industrial revolution chopped up work into isolated tasks vis-à-vis the assembly line. As time progressed we saw entire businesses with a stratified workforce; blue collar workers did bodily work while the white collar workers made money by thinking. This fragmentation was not reserved for places of work. As industry compartmentalized activities into physical and mental tasks, we also have seen a parallel rise in leisure activities that cater to one or the other of these aspects of ourselves. Movie theaters invite us to disconnect from our embodied selves. So does the television. We have gyms where you can plug in an mp3 player to occupy your mind in one way, while your body does something unrelated. Does it matter

that we would create a separation of activity for mind and body? I think so, because it ultimately violates something fundamental about being human.

## Being Human

Make a list of qualities that make you unique from other things in the world. Then try to find other observable things, such as plants or animals that have the same quality. Most likely you would find at least one other thing that shares that quality. I might start my list with “I have brown hair.” Many other animals, even some plants have brown hair or hair-like qualities. Quickly most physical traits could be checked off the list. I might then jump to something like “I have feelings”. Finding something else with feelings doesn’t seem too difficult. I would guess that you would say that many animals have feelings. If a dog is kicked it yelps in apparent pain. Pain is a feeling. But perhaps that’s not quite what I had in mind when I first thought of feelings. Perhaps I believe that feelings are on a continuum from simple to complex and that human uniqueness is on the complex end of the spectrum. Pain felt when someone kicks you is at one end of this spectrum but at the other end are more important feelings that make us unique. I might put love at that end.

Finding a good way to test an animal’s capacity for love might prove difficult for me, but I am serious about testing this list and finding something that makes me truly unique. So maybe I look at love as an array of qualities. This array has qualities such as affection, loyalty, and physical expression. I turn to my dog, Skoon. Affection: definitely, she drapes herself over me and looks me in the eyes. Loyalty: she keeps coming back to me and stays by my side when human companions have betrayed me. Physical expression: her tail wags vigorously upon my return; she licks of my hand; she barks in joy. I am a contented dog lover, but a frustrated philosopher on a quest for human uniqueness. My dog seems to possess every quality I can think to add to the array of conditions that make up love. My list still has no qualities on it that are not found elsewhere.

Yet I think to myself that there must be something different about being a person. Perhaps uniqueness lies in our ability to do exactly this: contemplate our selves. Do other animals have this kind of consciousness? I don't know how to test for this. What is more, pinning consciousness down is very difficult. Very smart people have been trying to do it for a very long time.

Specific experiences raise the question well. For instance, modern medicine can, with anesthesia, change the state of your consciousness but can’t control or affect the contents of your consciousness. Does that make sense? To perform surgery on you we have to carefully make sure you aren't asleep. You basically need to be in a light coma that can be turned on or off. We can do that to you. We can change you from awake-and-counting-backwards to comatose-but-not-asleep. That's changing the state of your consciousness. But we can't affect the contents of your consciousness, at least not with any precision. So we can't make you see a red bird speaking Portuguese to a green anteater. If we could do that we would be affecting the contents of your consciousness.

For all its mysteries, we do have a lot of experience with consciousness. Without consciousness to animate them, our bodies don't seem to be worth much.

And without a body to animate, does consciousness even exist?<sup>2</sup> So only when mind and body join together are we people. It is that simple. The fragmentation we looked at earlier seems to do violence to our self.

### Art and Consciousness

Now that we have a framework for understanding ourselves as a whole, we can return to the question of interpretation and art. I don't think there is an honest artist who would say that they make art to stick in a closet or who, once their work is created, thinks that it should be destroyed. Beyond visual artists, poets write in order to be read; composers want their notes to be heard. This desire to share experience is common to the arts and their practitioners.

Yet despite this artistic urge to share, many viewers, readers, and listeners who take the time to engage or view art, end up feeling more confused after they do so. They are understandably frustrated by their awareness of this fact. And so they formulate a question. This question can sour the shared experience for both the artist and the audience. I sympathize with the frustration each of them experience. As an artist I can see how the question can seem to indicate that the one asking it is missing the forest for the trees. I can also relate to the viewer's frustration as he or she feels that *the question* must be asked. Indeed *the question* may seem to be the most salient point for both parties, though the artist dances around *the question* and the questioner dogmatically repeats it. At a recent talk an artist stated that he would refuse to answer *the question* if anyone raised it. His statement is all too representative of the state of affairs between artists who rigorously pursue and share their work and audiences who go out of their way to view and participate with that work. The affair-changing, often offending question is "*What does it mean?*" Such a concise question hardly seems as though it would cause the chaos I've ascribed to it. From the point of view of those asking the question, it shows the artist that they are truly interested in the work and have a special connection that they want to deepen by engaging the artist on the artist's level. I don't want to discount this thought. In fact, if that were the motive the questioners should be congratulated. And let's face it, some blame does lie with the artistic community. We could lay blame on Andy Warhol who may be one of the artists that I mentioned earlier who created confusion. His vacuous interview style infamously avoided real answers. That style still leads many artists to envy him even if they lack the courage to mimic him. However, we would do better to consider the artist's point of view in a more robust form that resonates with the holistic proposal we made earlier.

The late Robert Motherwell made a useful statement about modern artists and their painting that I believe is true for multiple forms of contemporary art and artists:

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<sup>2</sup> One of the most evocative works to consider the nature of consciousness, and its peculiar qualities especially as related to the body is a book I find myself revisiting often as it is responsible for introducing me to the problem. Dennet, Daniel and Hofstadter, Douglas (Ed.). *The Mind's I*. (New York: Basic Books, 1981).

There are so many things that ought to be said about modern painting, about its structure, its relation to the self, its social conditioning, that a single idea is bound to seem fragmentary and misleading. It is for this reason that artists often remain silent, disliking words; but it is false to think that modern artists do not know what they are doing.<sup>3</sup>

Here Motherwell identifies a concept that we previously identified, as problematic in relation to art: fragmentation. He seems to imply that a single answer to such a question as "What does it mean?" will be "fragmentary and misleading." I believe that when Motherwell uses the term fragmentary he is referencing the kind of interpretation we have identified as problematic. This type of interpretation is, as previously stated, so prevalent and so problematic that I want to define it as counter to the idea of the holistic art experience I have been referencing. To do this I want to choose a description that both accurate and evocative. Let's call this problematic interpretive activity "reductive analysis." Such analysis reduces the essential complexity of the work to a singular importance. My choice of the word reductive is quite purposeful. First, "reductive" accurately describes the process Motherwell names, that is, the one that reduces artistic expression to "a single idea".

Second, the definition of the word accurately conveys the negative implications of reduction: presenting a problem in a simplified or especially crude view.<sup>4</sup> Reduction does to art what the assembly line did to work. The creative process is reduced to simplified, fragmented tasks done without awareness of a whole product.

At this point a problem arises. Up to this point I have referred to two separate activities of "analysis" and "interpretation" yet I have just now used the term "analysis" in naming what is the primary antagonist of my argument. Am I in some way saying that the two are equivalent? Or that there is possibly something called "reductive interpretation"? To answer the first question, "No." I do not try to equate analysis and interpretation. One usually precedes the other. My contention is that a person will, when given a problem, engage in behavior that would be called analysis and move then to interpretation. In fact, Dr. McClusky ably outlines this process elsewhere in this book in his chapter on problem solving. To answer the second possible problem as to whether I would allow for reductive interpretation I also would respond negatively.

I want to make a differentiation between what I call reductive analysis and other types of analysis, since I have said that both analysis and interpretation are not necessarily negative. To suggest otherwise would be reckless at best. Looking at the process as outlined in "The Problem of Problem Solving," I would even suggest that my term of "reductive analysis" could be adjusted to encompass all the good and desirable skills of problem solving that are so useful for so many domains of knowledge. In fact, the entire idea of breaking things down and listing them as facts that can be looked at separately is really at the core of what I would call analysis.

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<sup>3</sup> Ashton, Dore (Ed.). *The Writings of Robert Motherwell*. (Berkeley: University of California Press, 2007).

<sup>4</sup> This is the definition found on the Oxford American Dictionary provided with the Macintosh operating system I am using. It conforms to Google's dictionary as well as the Merriam Webster beside my desk.

Whether it occurs in looking at a work of art, a desiccated sample or an array of data, a portion of the activity we call analysis is this cataloguing of facts. My contention is that this is not helpful for understanding the primary experience of a work of art. It is indispensable elsewhere, but is misleading and fragmentary in art. Why does it fail for art?

### Consilience

In some ways my hope to move beyond fragmentation is similar to E.O. Wilson's conception of consilience.<sup>5</sup> Wilson conceives of a new era of knowledge based on the unity of many branches of knowledge as necessary to mitigate the previous era of reductionism in all areas of knowledge. Wilson contends that only by bringing together the advancements afforded by reductive analysis can knowledge make new leaps forward. But it is very important to note that reductive analysis is unable to grapple with the experiential aspect of art. In the same way that consciousness is a mysterious whole, the experience of art is not reducible to fragmented parts.

I would suggest that art's ability to create experiences that have a parallel in the mystery of consciousness is the one distinguishing feature of art. There is a tension between mind and body in the mystery of consciousness. Which is more important? Can one survive without the other? Of course not. Artistic works that are able to become more than decoration or propaganda have a similar tension. The viewer is drawn out of themselves and into the work. But, at the same time, the viewer is keenly aware of themselves contemplating themselves. This creates a tension between the external and the internal or what we might call the Other and the Self. Some readers might have doubts as to the ability of a work of art to "draw" the viewer "out of themselves". I have glossed over one or two things and as I don't want to leave the impression that art has some magic property that can be harnessed to steal your mind, I would like to clear something up.

I would ask the reader if they have ever sat in a car at a stoplight. A bus pulls up beside you. It takes up your peripheral vision on one side. As you sit there with the bus barely in your field of vision you feel yourself start to move backwards. You feel it. But you aren't moving into the car behind you. You glance over at the bus. You realize that it is moving forward and you, in fact, are firmly stopped. This is akin to the visual phenomenon that a rare artist can employ to create physical sensations with something like paint or steel. A gifted artist with a command of materials and keen awareness can create experiences of tension that relates to consciousness as well as to our Self and the Other. I believe that it is this holistic approach to

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<sup>5</sup> I first learned of Wilson's use of consilience at his lecture in 2010 at Trinity University in San Antonio, TX. First published in 1998, *Consilience: The Unity of Knowledge*, Wilson proposes a modification to the traditional use of consilience to include a unity of human knowledge, of the sciences and humanities, through the use of common underlying principles. Paraphrasing part of his lecture, Wilson proposed that humans since the Industrial Revolution have worked in narrower and narrower specialized fields of knowledge which has led to fragmentation of knowledge. Synthesis of knowledge would be useful or possibly necessary to propel our knowledge forward to meet the challenges of the present and future. See Wilson, Edward O. *Consilience: The Unity of Knowledge*. (New York: Vintage Books, 1999).

knowledge that Motherwell implies in his statement.

But there is another issue that weighs heavily on the relationship between artist and viewer when interpretation is used or implied in the question "What does it mean?" That is the question of intent. Oftentimes viewers find themselves wondering what an artist intended the experience to be or to convey. In most cases, the artist is not available to the viewer for their circumvention of the personal process of reflection on experience. The viewer must either spend time with the thing in question or not. Upon hearing the question, "What does it mean?" an artist may jump to the conclusion that the entire purpose of creating the work has been ignored and that a viewer is focusing on the secondary task of interpretation. She may or may not be right, but the point in creating and exhibiting things that we call art is that they are examined and experienced by a viewer. If the artist was to have a concise answer to this query of meaning, then the endeavor seems rather shallow. After all, the task of disseminating ideas can be accomplished much more efficiently through alternate means.

### Engagement

So we can see that it is not questions that are problematic for artists, only questions that undermine complexity or fragment experience. Viewers who sincerely ask questions have been congratulated; indeed many artists are motivated by urgent feelings brought about by some form of questioning. Of course, there are outliers and exceptions, especially within the creative class. We cannot cover artists with a single blanket statement in the same way we cannot cover any other group with blanket generalities.

I must also implore more artists to realize the mistake of not seizing the opportunities brought about by the questioning. Since the opportunity for engagement drives us to exhibit things to communities, let the exchange commence. Engage each other in conversation. Viewer, engage the artist. Artist, engage the viewer. The problem of meaning is a wonderful problem and pursuing it in this kind of conversation couldn't be more important.

Rigorous engagement, observation, and interpretation are needed by both sides. Reductive analysis has a rich tradition in all domains of knowledge and is useful in the arts. Indeed, I often hear works of art compared to children: they have personalities of their own, they talk back, they are prepared for life on their own, but they will be scrutinized and encounter people that the artist-as-parent could never have anticipated. So interpretation will happen. Yet the concern that Motherwell has is my own. What is proposed in reduction? What can those reductions do to our understanding of the whole? This holistic approach, this consilience, is an important goal when reading a thing called art.

Looking at, experiencing, and examining art can produce a vast array of effects for any viewer. The possible outcomes are as numerous as the conditions which may affect an audience at any given time. My goal, and I would wager that of Motherwell and many other artists, is not to advocate for or against experiencing or analyzing art through different techniques. But the most important thing to remember is that you are having an experience. Be aware. Be aware of the thing you

encounter, the art, yourself, and your experience. These dimensions of the experience are as important as knowing that the art is a mid-century expressionist figure study in oil. Take the time to be aware of the experience you are having in mind and body. Take the time to think about all aspects of the experience and what each feeling and thought can offer to your understanding of the meaning of the art or the experience.

The mind is wonderful software for building meaning. We seem to be very good at building meaning. We see a face in an electrical socket in the wall, in the headlights and grill of a truck, in blots of ink on paper. I have believed I've seen a person wearing a hooded sweatshirt standing outside a house when what I actually was looking at was a backlit tree. This is one type of meaning building.

Our minds seem to want to organize the things we experience and build categories around them. When experiencing art, dwell on the whole, not just the parts. Most likely the thing was made for that purpose. To commit to the whole process does take time, and we all feel the continued compression of time. Taking the time for self-reflection while experiencing something without an obvious or ready meaning can be intimidating and frustrating. It may even create feelings of worthlessness. But the reward for the brave act of self-reflection is great: personal consilience. So dig your hands into the mud again. Lift up the bucket in anticipation. Slide the painting fingers across the paper. Giggle and know that your time has been well spent.

## SERVICE FOR THE GREATER GOOD

### From Good Intentions to Liberating Partnerships

Tim Barr

*Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it is the only thing that ever has.*

—Margaret Mead

I was driving along a narrow road in the hauntingly beautiful northern prairies of the United States. It was a summer day in the Oglala Lakota Nation, also known as the Pine Ridge Reservation. Tall grass and a slight rolling of hills continued as far as the eye could see. Much closer, on either side of the pavement, I couldn't help but notice the rural poverty that surrounded us—trailer homes in bad shape, with patched roofs and open windows, often landscaped with cars that hadn't moved in a while.

The further I drove, the more something puzzled me. “Larry, why are all the houses painted the same color?” I was trying to be polite in wording the question that way, because truth be told, the houses were painted in one of the most hideous paint colors I had ever seen. It was one you see more commonly in your toilet than in the local hardware store.

My host sighed. He was a Lutheran pastor who had lived among the Oglala Lakota people for a few years. His response didn't last long, but it has stuck with me. It went something like this:

Every summer, hundreds of youth visit the rez to do a week of Christian service. Lakota people have mixed feelings about this. Some groups are respectful and take time to develop relationships and listen well. Some do not. These houses were painted a few summers ago by a large and particularly industrious group. They came wanting to paint houses. They brought gallons of donated paint with them. Since they did not have enough of the same color to do all of the homes, they decided to just go ahead and mix the colors together. This “paint saving action” produced the color you see.<sup>1</sup>

Almost a decade later, I still wonder what the residents of those homes thought about that group and their Christian service. After all, who wants to live in an ugly home? I'm curious about the youth who painted: do they know that their service wasn't appreciated, that it was a source of ridicule and derision, that it became a

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<sup>1</sup> The details of this loose quotation were verified by Larry Peterson via e-mail on July 22, 2010.

visible reminder that native people are still thrown “crumbs from the white man’s table”?

Ultimately, no matter how noble our intentions might be, service can cause more harm than good, materially and emotionally. An old proverb puts it starkly: the road to hell is paved with good intentions. Let’s put our good intentions to better use. A much more desirable destination awaits us. How can our service accomplish the most good?

## Service at First Glance

TLU prides itself on being a community of faith and learning. We also have a strong emphasis on service, both as an outward expression of our community and as one of its functions, “preparing women and men for lives of leadership and service in a diverse world.” Service is so integral to our understanding of the TLU education that it is listed as one of the twelve overarching goals for TLU students: “every graduate will have a commitment to active community service.”

With this essay, you are hereby officially notified: however you spent your time in high school, for the next four years you will be doing service, and in a variety of ways. Not only that, but you will also be reflecting on service experiences. How were you challenged? What did you learn? How did the experience deepen your understanding of lectures, readings, and other course content?

At the core, service is about giving of ourselves. Much more could be said, but if we peel back all the various layers, service is offering part of who we are to benefit someone or something else.

In thinking about the typical service project, I have identified several commonly held beliefs or axioms. Please read the list below and place a check next to the ones you have either heard someone else say or stated yourself:

- ❖ *The better it’s organized, the better the experience will be.*
- ❖ *Let’s just get to work.*
- ❖ *We’re here to get things done.*
- ❖ *Good service starts with a good cause.*
- ❖ *If it ain’t fun, it ain’t worth doing.*
- ❖ *Serving others makes you feel good inside.*
- ❖ *Any help is good help.*
- ❖ *If we all pitched in a little more, we wouldn’t have these kinds of problems.*

In this chapter, we will examine many of these beliefs, analyzing them in search of an ethic of service that does the most good. What cultural values and assumptions underlie our ideas about service? What does Christian faith have to say, if anything, about this topic? And perhaps most importantly, what is a good approach to service anyway? How will we know if we’re going in the right direction?

## They'll Know We Are Christians by Our Love

In the fall of 2005, hundreds of thousands of survivors from New Orleans and the Gulf Coast flooded into Houston. Many arrived with nothing more than the clothes on their backs. Almost immediately, the Houston Astrodome was transformed into a relief shelter and processing center. Hundreds of volunteers distributed supplies, processed intake forms, and provided comfort and care.

From the very beginning, in the midst of the chaos that ensued, Erick and Alicia Suazo heard a call to service. A Honduran immigrant to the United States as well as a member of a Honduran minority group called the Garifuna, Erick made a cardboard sign that said the same thing in three different languages: "If you are Garifuna, I'm looking for you. If you are from Central America, I'm looking for you." For days, he walked around the Astrodome amidst thousands of people, holding the sign high above his head, hoping it would attract attention.

The plan worked. Little by little, Garifuna and other Central Americans found him. In a disaster that appeared to affect mostly white and African-American English-speakers, his trilingual sign in Spanish, Garifuna, and English was a source of comfort and relief that opened doors. But for the Suazo family, their call to service was just beginning.

None of the displaced families had a place to sleep. Few had money, or transportation, or even food for their next meal. Some had lost family members in the disaster, and many were tormented by mental and emotional health issues. Children, in particular, had nightmares every time it began to rain. For the next few months, Erick, Alicia, and their three children worked tirelessly to network and advocate on behalf of the displaced families. Gradually, they secured housing, furniture, and even jobs for these people. They cared for their emotional and spiritual needs by being available and oftentimes present at all times of the day and night.

When I first met the Suazo family, their ministry to displaced families was already well underway. I marveled at how they had been able to accomplish so much with so little. "How did you do it?" I asked. "What would have happened if you had brought all these families out of the Astrodome and couldn't help them?" Erick explained, "The bible says that even if you only have a cup of cold water, you should offer it to the person who is in need. Sometimes, we don't even have cold water, just plain water, but that is still a blessing to the person who is thirsty. So that's what we did. We offered what we had, and we promised to work with people to help them get back on their feet."

To continue to serve through trials and tribulations, chaos and catastrophe, our service must be rooted in something deeper than our passing whims and fancies. When I reflect on the Suazo family's service, I am captivated by the sheer love that animated it. Compelled by faith, they did extraordinary things. Their abiding love and hospitality was a profound Christian witness to the hundreds of families they served.

What exactly do Christianity and the bible have to say about service?<sup>2</sup> The Christian faith is not the only faith that encourages service, but it is the tradition I know best. It is also the tradition of the overwhelming majority of the students at this Lutheran affiliated university.

Within the Christian bible, service is always directed to those who can't afford it, toward the marginalized, the poor, the oppressed. As others have noted, these concepts of service inevitably lead those practicing them to anonymity and suffering—downward mobility, not upward.

In the book of Isaiah, chapter 58, we read about the kind of fasting—worship—that God desires. God isn't impressed when we observe right and proper religious rituals while also serving our own interests: exploiting workers for our own profit, responding to problems with anger and violence. The writer is clear. God wants us to share our food with the hungry, provide housing for the homeless, clothe the naked, take care of our own people. When we do these things, God promises, I will “satisfy your needs in parched places, and make your bones strong; you shall be like a watered garden, like a spring of water, whose waters never fail” (NRSV translation).

The bible provides a number of models for faithful service, from Shiprah and Puah, the Hebrew midwives (Exodus 1:15), to Tabitha, a member of the early church (Acts 9:36). One of the most famous examples is Mary, the mother of Jesus. In the first chapter of Luke, she speaks about service and God's concern for the oppressed:

With all my heart I praise the Lord, and I am glad because of God my Savior. He cares for me, his humble servant. From now on, all people will say God has blessed me....the Lord has used his powerful arm to scatter those who are proud. He drags strong rulers from their thrones and puts humble people in places of power. God gives the hungry good things to eat, and sends the rich away with nothing. (Luke 1:46-48, 51-53; CEV translation)

A few chapters later, in the same gospel, we read about John the Baptizer preaching repentance and the coming salvation of God. The crowds ask him how they should respond. He tells them that whoever has two items of clothing should share with the person who has none, and those with food should do the same. Tax collectors and soldiers also seek his counsel on how to live a holy life. In effect, John tells them to serve the people by being satisfied with their wages, not extorting anyone for more than is fair.

Perhaps the clearest and most unequivocal biblical message about service is the story of the Lord separating the sheep from the goats in the 25<sup>th</sup> chapter of Matthew. Catholic priest and scholar Michael J. Himes notes that this is the only passage in the entire New Testament describing the final judgment (Himes). He also observes that the criterion for entry into God's realm—“the kingdom of God”—is

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<sup>2</sup> This section on the bible and service grows out of the keynote lecture by Richard T. Hughes, Distinguished Professor of Religion and Senior Fellow of the Ernest L. Boyer Center at Messiah College, during the Sixth National Faith-Based Service-Learning Conference, June 10-12, 2010.

shockingly different from what most Christians expect (being baptized, acts of worship, frequent prayer). In this graphic story, Jesus teaches his followers that when they see the hungry, the thirsty, the new immigrant, the naked, the sick, or the imprisoned, and they serve their needs, they also serve God. Jesus says, “Truly I tell you, just as you did it to one of the least of these who are members of my family, you did it to me” (NRSV translation).

For a moment, contrast this view of judgment and faithfulness with the prevailing contemporary Christian message about entry into heaven. It doesn’t matter whether we are baptized, active in church, or attentive to prayer. It doesn’t matter whether we call ourselves Christians. It doesn’t even matter *why* we serve our sister or brother in need. The only thing that matters is that we serve—not just anyone, but specifically, “the least of these.”

### Inspecting Our Service Baggage

We were running late. After-work traffic had been stop and go for the entire forty-five minute drive. We parked and walked into the building. Before us was a sack lunch assembly line. Most of the dozen or so tables were covered with pieces of cheap bread, laid out in rows, and volunteers systematically walked around squirting mustard from huge squeeze bottles. Other volunteers wearing latex gloves walked along slapping chunks of meat onto the bread, followed by others laying down the top slice of bread, in turn followed by additional volunteers stuffing the sandwiches into plastic bags. On the side, a few people were throwing juice boxes, pieces of fruit, and bags of chips into brown bags along with the sandwiches. At least a dozen people were scurrying about, practically oblivious to our presence in the room. “Hi,” I called out, “we’re the youth group that called and made arrangements to come help tonight. What can we do?”

A few people looked up. One of them might have grunted. Most kept working. One woman pointed us toward the kitchen area. There we met the person in charge, who briefly stopped what she was doing to hand us some gloves and tell us to jump into the assembly line wherever there was room.

We had come because we’d heard that this was a great service project for a youth group: make hundreds of sack lunches for homeless street people using donated food items, then distribute them in downtown. Even if our co-workers were a bit inhospitable and rude, the project had a good cause, sounded like fun, and offered the possibility of getting to know people in a vastly different life situation. We found places to work and got started.

Over the course of the next 30-45 minutes, more people arrived to help make sandwiches, which was a good thing, because we were being reminded constantly to pick up the pace. I was surprised and pleased by the positive reactions of my youth group. With each warning they seemed to buckle down and work even harder. Soon we were told to stop and load up the vehicles for delivery. Before long, we were part of a twelve car caravan driving into downtown, making short stops at half a dozen homeless shelters, quickly dropping off boxes of brown bag lunches before hopping back into our vehicles to depart for the next destination. Aside from a few street

people that we bumped into around the entrances of the shelters, the project was neat and tidy, and before long, we were headed back toward home.

Knowing that reflection and analysis are critical components of any service experience, I took advantage of the ride home to process the experience with the youth in my car. What did they think? How did they feel? What had made an impression on them?

I expected to hear about how they had felt rushed, that the delivery caravan had been a waste of time and gas, that ultimately, this experience had not been very fun or enjoyable. But that's not what they said. Instead, they told me how great it had been, how much joy it had given them to see even a few homeless people and know that they were making a difference in someone's life. More than that, they wanted to come back as a group at least every other week to help in the future.

Their reaction dismayed me. I feared the group was missing the point, one that as their leader I was belatedly realizing myself. We could organize a drive for food, clothing, or other supplies any time we wanted and deliver the materials to distribution points. For that matter, we could make a few sack lunches any afternoon of the week and drop them off at the emergency assistance center in our own neighborhood. The plight of the street homeless wasn't going to change. They would still be hungry the next day. Nor was there any guarantee that we were going to change. Without time to develop relationships and get to know people in a different place of life, our attitudes and perspectives would most likely remain the same. In fact, they might get worse. Any pre-service-experience stereotypes of homeless street people as lazy, dirty, and undeserving might be reinforced and confirmed without the counterbalancing effect of a meaningful exchange—the gift of a relationship—to open our eyes and ears to new understandings.

In hindsight, their positive reaction makes more sense to me. The youth in my group were eager to do good, and they were willing to tolerate a certain amount of stress and rudeness if, at the end of the experience, they were able to see themselves as caring people making a difference. I suspect that any service experience would have accomplished this very basic goal. To them, the details of how it was structured or what it ultimately accomplished were irrelevant. On a basic level, they were simply abiding by Jesus' teaching to care for "the least of these."

While caring about the plight of others is a prerequisite to making a difference, care alone, just like the good intentions I mentioned at the outset of this chapter, will not solve a problem like homelessness. Returning to the bible, Jesus wasn't killed by the imperial authorities simply because he was a nice guy with a big heart. Rather, he was crucified because he represented a challenge to the systems and structures that maintained the status quo. His teaching about leadership turned the prevailing wisdom—then and now—on its head (Mark 10: 41-44). He asked tough questions that challenged the cultural and religious values of his time (Matthew 5:46-47, Mark 3:4, John 8:1-11). The type of service that Jesus modeled was not merely warm and fuzzy; it requires reflection, analysis, and deepening engagement.

Whether or not we serve for religious reasons, we, like Jesus, need to question our contemporary values, particularly those related to service. Most of us carry baggage—ideas, beliefs, stereotypes, and ways of operating—that interferes with our ability to do the most good. Often our baggage blinds and anaesthetizes us to our

own values and dreams for a better world. We become oblivious to the possibility that we are potentially causing harm, or that our time and effort could have far greater impact with a different approach. We want to do good; we're just not sure how. We easily fall into the patterns others have established (the status quo) without realizing that other possibilities exist.

Eventually, I realized that the sandwiches-for-the-homeless experience was an indication that my youth group needed to examine their beliefs about service. With the remainder of this essay, I invite you to do the same, using the checklist from the beginning of this chapter. Imagine that this is a security checkpoint. Before doing any more service, let's take off our shoes and lay our baggage on the conveyor belt for careful scrutiny. What ideas and assumptions are we carrying with us, even if we don't remember packing them for the trip?

*Axiom 1: The better it's organized, the better the experience will be.*

When I interview student worker applicants, I always ask about the service experiences that had the deepest impact on them. Most rattle off a list of events and activities: a mission trip to Mexico, serving food to homeless people at a shelter, mentoring a child through a program like Big Brothers/Big Sisters. These are all admirable. But when did our use of the word "service" come to mean almost exclusively an organized activity that we do in our spare time?

The word "service," at least in this society, often denotes an artificial experience that someone has planned and prepared in order to do something nice for someone else. The experience usually involves going someplace outside of our normal routine to do something outside of our acknowledged skill set. To be even more specific, in most cases, the experience often requires us to use skills and complete tasks that are not paid well on the open market, such as sorting, filing, selling, weeding, digging, and cleaning.

As a result, when asked about service, many of us automatically think about coordinated and controlled—perhaps we could even say contrived—events that we attempt to fit around other, more important components of life. We expect these events to be well-organized. When they are not, we often feel like our time and willingness to offer hard labor have been wasted.

Let's expand our understanding of service to include all the ordinary, small, medium, and large-sized opportunities we encounter to care for others. These opportunities can be organized, but they don't have to be. Many times I have marveled that the most meaningful service—talking to a neighbor, listening patiently to a co-worker's story, a graceful smile—during a well-organized project wasn't planned anyway.

*Axioms 2 & 3: Let's just get to work. We're here to get things done.*

These axioms were plainly obvious in the story about making sack lunches for the homeless. There was a constant pressure to move quickly and manufacture as many meals as possible. No matter how hard we worked, there didn't seem to be enough time.

Attitudes toward time transcend our service experiences. The dominant culture in this country—racially white, ethnically European, and despite significant progress, definitely still patriarchal—is delirious with managing time. The collective mentality of scarcity, embodied in sayings like “time is precious” and “let’s not waste any time,” manifests itself in a constant pressure on everything from our interpersonal communication to our physical health. Some say time is even used as a tool of oppression (Okun).

As a result, when we serve, we not only expect projects to be well-organized, we also expect them to be worth our time. Most of us show up ready to work, ready to get things done, so that when we leave, we will have a sense of accomplishment. To depart without this satisfaction often means to depart with questions about how our time was spent and what could have been organized differently.

Sadly, this relentless attention to time routinely makes us oblivious to more meaningful and natural forms of service that arise out of building and being in community with one another. We easily overlook opportunities to build relationships. Instead, we focus on completing the tasks at hand.

I remember a group of Central American church leaders who traveled to New Orleans a few years ago to share their experiences and practical insights in responding to Hurricane Mitch. They were hosted by a religious organization bringing service groups to New Orleans to rebuild homes. The hosting organization was so consumed with construction tasks that it missed a beautiful opportunity to learn from the visiting church leaders, who were sent out each day to paint and hang drywall just like every other service group. After a week, they still had not been able to share their insights.

As I reflect on service experiences in my past, I cringe to think about the number of times I probably did something similar. How many times have I been so task-oriented that I failed to notice someone with a story to share?

Hugo Saucedo directs voluntary service opportunities within the Mennonite church. Recently, he wrote a column admonishing service groups to stop coming as superheroes trying to save the day:

Every spring and summer, we see idealistic youth and their adult sponsors make the journey to the big city. Their ambitions are modest. They simply want to solve all the problems that a big city faces. They want to end hunger and homelessness, stop teen pregnancy, and build everyone a new house.

They want to bring God to the big city.

The truth is, God is already there. God is present in the soup line and in the homeless shelters. God is caring for the young and the weak. God is encouraging the young parents and providing shelter for those without a roof.

We think that we are doing the most good by feeding the hungry and clothing the naked. We are dead wrong.

*We should treat our journeys into the cities as worship* [emphasis added], not as vacation. We are pilgrims who must realize that we are standing on sacred ground. To truly find God’s purpose, we must yield our control and allow the experience to enlighten us. The good comes when we drop our veiled holiness and allow those who are downtrodden to teach us just how real God is. We are served by them as they share their lives with us...

[We] must understand that it is in our weakest moments that we are closest to God. It is when we realize just how much we are like the poor, which makes us rich in ways we never imagined.

We need to stop rescuing people and start encountering people. We must stop bringing hope and start seeking it (Saucedo).

To do this, we must be conscious about our attitudes toward time. How are we approaching the experience before us? How will we prioritize specific tasks against opportunities to build relationships and be in community?

*Axiom 4: Good service starts with a good cause.*

This axiom seems like a no-brainer. Who wants to donate their time and energy toward filing papers in a storage room for a large corporation (with no potential for future personal gain)?

Not all good causes, however, are created equal. Continuing on the theme of relationships, it is imperative not only to know whom we are serving, but how. We need to examine the impact of our service on the larger community.

I can illustrate this best with another story, this time told by historian and racism educator Tobin Miller-Shearer. He had gone to visit some friends living and working among the Lakota people on the Pine Ridge Reservation. As he was receiving a tour from his host, Harley, they noticed a van stopped on the side of the road. A dozen or so youth were looking under the hood. Harley offered his cell phone so they could call for help.

While waiting, one of the members of the group shared their plans to build handicap ramps on the reservation. They were seeking donations from hardware stores in a nearby town.

After listening for quite a while, Harley told them about an unemployed Lakota carpenter who had built several handicap ramps on the reservation. Due to a lack of funds, he had not been able to receive any payment for his labor, and eventually he had to leave the area to find work elsewhere.

Gently, Harley suggested that the group consider funneling their resources toward the tribe so that local carpenters could be paid to do the same work. The group never acknowledged he had even spoken.

Tobin concludes the story by juxtaposing the frustrated expressions of the well-intentioned, stranded youth against the experiences of local Lakota carpenters. The do-gooder aspirations of incoming service groups were making it difficult for local people to find work. Their livelihood had been taken away by people who had unintentionally done harm while trying to do good (Shearer).

Ultimately, a good cause is not enough. There are lots of good causes. To use the common expression, good causes are a dime a dozen.

*Axioms 5 & 6: If it ain't fun, it ain't worth doing. Serving others makes you feel good inside.*

Just like the last one, these next two axioms also seem like no-brainers. Who wants to volunteer for an activity that makes life miserable?

Once again, let's subject these ideas to greater scrutiny. If service is primarily about having fun or feeling good inside, whom are we really serving? If we are primarily serving our own needs—and there doesn't have to be any shame in that—is there any way that we can simultaneously meet the needs of others?

To be sustainable and have the most impact, everyone involved needs to feel that some of their deepest needs are being met. The service transaction must be mutually-beneficial. To quote writer and theologian Frederick Buechner, “the kind of work God usually calls you to is the kind of work (a) that you need most to do and (b) that the world most needs to have done...the place God calls you to is the place where your deep gladness and the world's deep hunger meet” (Buechner).

We want service experiences that are fun and make us feel good inside. We also want a balanced transaction where everyone's needs are met. We don't want to take away paying jobs from people who are trying to support a family and pay bills. We don't want to paint a bunch of houses the same hideous color believing we have made a difference.

As a first step, we must ask ourselves, as Professor Juan Rodríguez does in another essay in this book, who am I? A balanced, mutually-beneficial service transaction is difficult, if not impossible, without knowing how our individual story has been and continues to be impacted by the larger narratives of our community and nation. What kinds of power have we been given by society? Whether acknowledged or not, what privileges are lurking in our luggage?

Contrary to popular belief, we don't get to choose whether we have privilege. Our national and family histories as well as generations of inequitable treatment toward certain groups determine whether we receive privilege. Obviously, this happens long before we are born. As a result, privilege is inherent in any system of relationships, any ism (racism, sexism, heterosexism, classism, etc.) in which one group of people innately possess more power in society than another group.

In the essay *White Privilege: Unpacking the Invisible Knapsack*, Peggy McIntosh describes privilege in the following way:

As a white person, I realized I had been taught about racism as something that puts others at a disadvantage, but had been taught not to see one of its corollary aspects, white privilege, which puts me at an advantage. I think whites are carefully taught not to recognize white privilege, as males are taught not to recognize male privilege. So I have begun in an untutored way to ask what it is like to have white privilege. I have come to see white privilege as an invisible package of unearned assets that I can count on cashing in each day, but about which I was "meant" to remain oblivious. White privilege is like an invisible weightless knapsack of special provisions, maps, passports, codebooks, visas, clothes, tools, and blank checks (McIntosh).

I often hear TLU students and student groups excitedly talking about service because it is fun and makes them feel good about themselves. These are good results, and good reasons to be excited. By no means do I want to diminish the importance of having a healthy psyche. However, as the ramp-building story makes clear, it is imperative that we not only look at the impact or relevance of service in our own lives; we must also measure the same outcomes in the lives and livelihoods of the people we are supposedly serving. What privileges—college education,

gender, race, income level, primary language, etc.—do we bring into the exchange? How can we use our privilege(s) to do the most good?

*Axiom 7: Any help is good help.*

My friend Felipe tells a story about a group that came for a week of service in Mexico. Their project was to replace a roof. The homeowner, a bi-vocational pastor, had asked them to wait until Monday afternoon when he returned from his daytime job to begin the project. Instead, they went ahead without permission. At the end of the week, they packed up and headed home without finishing the job.

Tension had been building the whole week, finally boiling over after the group left, when the homeowner drove up to his home. Seeing the partially completed project, he broke down weeping. Before the group arrived, the pastor at least had a working roof. Now he had no roof and no money to finish what they had begun.

To add insult to injury, the service group did later send money, but rather than sending it directly to the Mexican pastor, they sent it to a white contact in the area whom they said they could trust.<sup>3</sup>

I sigh when I think about all the stories like this I can tell, from TLU students who repeatedly showed up late and sometimes not at all (wasting a host organization's time and energy spent preparing service projects for them) to the volunteer who was so rude that he was asked not to come back. Some help does more harm than good, even if the labor is free.

There are two poles to this dilemma. On one end are volunteers who would rather not be volunteering. They'd rather be somewhere else. These people usually need service hours to fulfill a requirement, and their bad attitude can poison the experience for the rest of their group. I'm always hoping that one of their peers will call them out on their narcissism and their behavior will improve.

The other extreme is entering into someone else's space and thinking that I or we know what they need better than they do. This is especially perilous thinking for volunteers, who typically have a limited history of contact and a shallow relationship with the person(s) they have come to serve. Paternalism, as Felipe's story makes clear, damages the very foundation of healthy service: a good relationship. A healthy approach to service means taking leadership and direction from those whom we believe we are serving.

*Axiom 8: If we all pitched in a little more, we wouldn't have these kinds of problems.*

On some levels, I am deeply sympathetic to the thinking behind this axiom. If there were more empathy and compassion in the world, if we truly did demonstrate more love for our neighbors and ourselves, the world would be a better place. We can all say amen to that!

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<sup>3</sup> In order to protect the confidentiality of the homeowner/pastor, a modified version of this story was published by Tobin Miller-Shearer in the July/August 2002 edition of *With*. Now that more time has passed, permission was granted to provide the unaltered version.

At the same time, the only way our service will resolve complicated, staggering problems like poverty and child abuse is if it addresses the roots, and not just the symptoms, of these problems. Complex problems with long histories require multi-level responses informed by some modicum of analysis. Easy and simple solutions deceive us into thinking we are accomplishing more than we actually are. Sticking a Band-Aid onto a person diagnosed with cancer isn't going to do much in the long-run; neither is organizing a food drive or raising money for the Christian Cupboard when unemployment is high, jobs are scarce, and people lack skills and education to qualify for jobs with decent wages.

Please don't misunderstand me: food drives and fundraisers are good things. We definitely need more generosity and compassion. At the same time, we also need educational, political, social, health, and economic systems that create a level playing field so that everyone's basic needs are met. We need structural responses to structural problems.

Catholic social teaching emphasizes that there are two feet to Christian service (Bishops). Just as we need two feet to walk, the idea is that we need two feet to follow the example of Jesus. One foot is charity; the other is justice. Charity meets the immediate needs of people who are suffering but does not change the social systems that attack their dignity, cause oppression, or result in poverty. On the other foot, seeking social justice helps us change unjust systems, but is ultimately hollow if we have ignored the urgent needs of people who are suffering. Clearly, solving world hunger will be meaningless if all the hungry people die of starvation by the time a solution is found.

In other words, more people "pitching in" will not end our social problems. More people engaging in a variety of ways with depth of commitment and analysis, however, would go a long way.

### Learning to Walk All Over Again

So much description of pitfalls and dangers begs the question: what are good approaches to service?

One answer is contained in a request from Pastor Gina Tillman-Young, leader of a non-profit school, restaurant, raw milk dairy, and holistic ministry just outside Seguin. Soon after I met her, she e-mailed me and wrote, "We don't need someone to paint the side of our barn or weed our gardens. What we need are a few folks willing to make a commitment to intellectual/spiritual servanthood for a semester." In other words, they didn't need people to come do stuff they could do themselves. They needed people who would walk alongside them in the ways they had identified (in that specific case, joining a bible study).

Hopefully it is clear that healthy approaches to service grow out of a foundation of healthy relationships with the people we believe we are serving. When done right, the other(s) serve our needs just as much as we serve theirs, so it becomes impossible to identify who is serving whom. The experience is mutually-beneficial from the start. We walk alongside one another in a spirit of partnership and solidarity.

We should differentiate between organized and unorganized forms of service. I applaud people who interrupt their normal routines to serve others. Please use your skills and education and passion to meet the world's deep hunger. Whenever possible, synchronize your sense of vocation with your call to service, weaving the two together until they become indistinguishable from one another.

At the same time, let's not overlook the very natural, totally unorganized forms of service that pop up all the time in daily life. We should name and claim service that we do in the midst of our families, close relationships, schools, and communities. This is just as important, if not even more essential to a healthy approach to service. Just like social justice without charity, service to complete strangers is hollow—hypocritical, even—if it means ignoring the suffering people we encounter on an everyday basis.

Finally, a healthy approach to service requires attention to dynamics of power, privilege, and potential paternalism. I have a friend in New Orleans who does this better than any other white, middle-class person I know. When the city began to rebuild, Pam left a tenured position as a college professor to lead a process of listening and discernment for a faith-based organization, getting paid significantly less to do work that is far more consuming and stressful.

When I shared a portion of this essay with her, she wrote back:

As I reflect on my positive and negative observations of "people doing service," the thing that stands out for me as something that can make a real difference is whether or not the "servers" approach service with a real humility and appreciation for the complexity of solutions (which means recognizing that we really *may not at all know* the best way to serve). The people who drive me crazy are those who have such a sense that they have *come to help* and should be appreciated accordingly. This can sometimes be glaring and at other times it can be a subtle need/desire for appreciation, but either way it can get in the way of being able to hear criticism. It clearly reflects an internalized superiority and paternalism.

As a white woman in a community of color, she would be the first to tell you that she's made plenty of missteps. She's taken her share of criticism. She's been forced to confront her own paternalistic impulses. Nevertheless, she continues to listen and learn, making herself accountable to local people, doing behind-the-scenes work like taking notes and making phone calls to keep everyone informed. She understands this as the best way to be an ally and partner. It's also a good example of service.

### A Final Glance at Service

At the beginning of this essay, I named several common beliefs about service. Now, at the conclusion of the essay, I want to offer a new list, hopefully one that will be helpful as you approach future service opportunities.

A healthy approach to service means:

- ❖ *Naming and claiming service in our daily lives.*
- ❖ *Integrating our concern for others into our sense of vocation.*
- ❖ *Focusing on relationships first.*
- ❖ *Listening well.*
- ❖ *Building and being in community.*
- ❖ *Insisting that the experience is mutually beneficial.*
- ❖ *Paying attention to the need for both charity and social justice.*
- ❖ *Being aware of our identity, including group power and privileges.*
- ❖ *Treating others with the same respect we expect to receive.*
- ❖ *Working toward a sense of partnership.*

Please also note that this chapter has focused exclusively on the preparation for and specific act of doing service, omitting a crucial step, one that I trust you will learn and practice often in TLU classes: reflection. A healthy cycle of service includes both formal and informal processing before, during, and after the experience. Each experience should build upon the last. Service without reflective analysis is like attending college without going to class: a rich experience, but ultimately not one that will lead to much personal transformation, and probably not much social change either.

To conclude, I share the words of an Aboriginal activist group from Australia, often attributed to Lilla Watson: "If you have come here to help me, you are wasting your time. But if you have come because your liberation is bound up with mine, then let us work together."

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## EXPERIENCE THE WORLD

Our Campus is in Seguin but the World is Your Classroom

Terry Price & Charla Bailey

*“A good traveler has no fixed plans, and is not intent on arriving.”*

—Lao Tzu

Professor Terry Price, Associate Professor of Dramatic Media, has led several students to the Czech Republic and surrounding areas.

Charla Bailey, Director of International Education, works with students interested in studying abroad as well as international students studying at TLU on short-term exchange or as degree-seeking students.

We’re writing this chapter to provide you with some general information about study abroad. First, we’ll share some stories about our adventures abroad, followed by some students’ perspectives. Then we’ll close with information about how to pursue your own interest in study abroad.

A liberal arts education means having a breadth of knowledge in addition to a depth of knowledge. This belief is also incorporated into two of TLU’s *Institutional Goals for Graduates* (IGGs). The breadth provides a student with a well-rounded education—competence to speak in many situations. The depth offers students a solid foundation of learning about a single discipline.

Studying abroad contributes to all of the above. Students learn, in general, about international travel, different academic styles, and different cultures. Students studying abroad often have courses that offer lectures with much independent reading and research. Assessment is limited to only one or two exams per semester. Most students return having appreciated and enjoyed the independent work. Additionally, students gain knowledge outside the classroom. For instance, Jessica took tango lessons in Argentina, participated in competitions, and made long-time friends through those interactions. Misty learned to make paella from her host mother. Upon her return to TLU, Misty made it for her friends and explained her interactions with her host family.

Students also learn, specifically, another language, history of the host country, and customs. For example, Chris learned that he had a knack for acquiring language while studying in Finland. He then applied for and received a Fulbright Scholarship and subsequently learned Korean while working in South Korea. Additionally, Tamara took Spanish in high school, continued the language coursework at TLU for four semesters, and then studied in Spain. She is now teaching in Ecuador. Language is a great lens into another culture.

The longer the student studies abroad, the more breadth and depth of knowledge they can acquire.

From Terry Price, Associate Professor of Dramatic Media

I grew up in Western North Carolina in a very small community called Walnut. My family loved to travel. We would take Sunday drives almost every week and it was not unusual for us to get lost on the narrow roads that wound their way between and over the mountains, but we always found our way back home. Almost every time we saw something new and unusual or met a new person with a unique experience or perspective to share. I went to Marshall High, located on an island in the French Broad River. Each year, the senior class took a week-long trip; my class went to Washington DC and New York. When I returned home from this trip, something unexpected had happened. Everything was different. My house, the dog, my parents, the horses, even the mountains—they had all changed somehow. What had seemed to be fixed in a permanent state had now become something so different that it was almost unrecognizable. Of course, the thing that was most confusing was that they looked the same, they did the same things, they were in their usual places—I couldn't identify what specifically had changed, I just knew that they were not the same.

I spoke with my dad about this unique feeling and he relayed to me a similar experience he had had. He was in Europe for two and a half years during WWII and he said that when he returned home, he also noticed that everything was very different. He told me that over time, and after talking with his family, he had come to realize that all the things that seemed to have changed were in fact the same; it was he who had been transformed. He was able to see his familiar world through a new lens, a lens that had been ground and shaped by his experiences in Europe. Of course, a week cannot compare to two and a half years abroad, but Dad suggested that maybe the same thing had happened to me. Over the course of subsequently longer and longer trips I came to realize that Dad was right. I was the one who had changed and I was a richer person for it. Having observed a variety of different cultures over the intervening years—ranging from the isolated mountains of North Carolina to the beaches of California, and later on to the Czech Republic, Poland, Germany, Wales, and Portugal—I find that I am much more tolerant of divergent viewpoints and of different lifestyles and cultural customs because I experienced the joy and challenges of a different culture. Those early childhood Sunday drives instilled in me a sense of adventure connected with travel that continues to affect me today.

British novelist G. K. Chesterton captured the feeling well when he said, “The whole object of travel is not to set foot on foreign land; it is at last to set foot on one's own country as a foreign land.” It is the experience of seeing one's own land through the eyes of a visitor that I want to share with my study abroad class, and I think I do. Justin captured some of that sensation in a blog post:

Being over there has opened my eyes to some things, though. We met a man in a park one of our very first days in Prague that spoke about the U.S. and the difference between the US and the Czech Republic. He said that one of the main differences was the placement of flags in both countries. In America, the American flag is something that is constantly flown, in our homes, our businesses, and basically anywhere we can put it whenever we can put it up. In the Czech Republic? Not so much. One of the reasons the man gave was that the people of this area tried to have a much more global sense of the world instead of just their country. This was repeated with the fact that most of the people we met who were Czech or from Europe and just traveling knew more than one language. That alone was such a humbling experience. Not knowing another language made you feel a little bit inadequate. But, even though we didn't know much of the language, I didn't feel like we were discriminated at all for it.

*—Justin Howerton, Dramatic Media and Psychology major  
from Hempstead, TX after four weeks in the Czech Republic*

Tammy made a similar observation:

I...feel that seeing a completely different culture has taught me to appreciate what we have in America. It also taught me that there may be a few things in my life that I would like to change. I saw in that brief month how lazy we can be, and I rather enjoyed getting off my butt. I think that as much as I love my car, walking can be an extremely relaxing way to get around. [...] I thought that Europe was so beautiful and I enjoyed every second there! I would go back again any time. In fact, I already miss it. I am really glad to be home and with the people I love, but I will never be able to forget the feeling of Europe. The walking, the food, the language, the trams, the people, the crystal, and the feeling of adventure and independence.

*—Tammy Risley, Dramatic Media major from La Vernia, TX  
after four weeks in the Czech Republic*

A Chinese Proverb instructs: “Don't listen to what they say. Go see.” We can easily get caught up in doubt that clouds our judgment about those we do not know or do not understand. We form conclusions based on that doubt and forget that we are talking about human beings who live and die, have parents and children, love and hate, have friends and enemies, just like us. When we are blessed by the experience of visiting a foreign land and living—as much as possible—as locals, we begin to see the similarities as well as the differences. Through this deeper, more complex understanding of the different culture, we also develop a deeper understanding of the differences, why they exist, and why they are important to others. When that happens, we can celebrate our differences instead of reproaching them. Justin affirmed this stance regarding the Czech Republic in further comments he made:

In the past month I have eaten way too much chicken, have had my fill of pasta to last me a lifetime, have had to foil my own pickpocket on the tram, have gotten lost in the middle of nowhere, got sick, lost my luggage for a week, was the only boy for a month surrounded by a group of five girls, and would do it all over again at a moment's notice. Being able to experience the Czech Republic (it's not Czechoslovakia) and Poland is something that I would not have given up for

anything. Cliché, I know, but it's the truth and I highly recommend that anyone ever given the chance to go out of the country to seize it and go.

Marcel Proust said: "The real voyage of discovery consists not in seeing new landscapes, but in having new eyes." Naomi experienced just that:

The experience I had in Central Europe cannot be easily dismissed as a "fun summer" or just another "cool experience." I began the trip with much apprehension and a feeling of hesitation down to the core. I had never left the United States before, I wasn't sure how I would be accepted into the culture, since there was no way I could be mistaken for being European and still didn't know very much about the language. However, from this experience I feel that I have been able to lay the foundation of stepping out of my own comfort zone, taking a chance at something new, and learning what it means to wisely let your curiosity guide you and challenge your intellect and abilities.

—Naomi Urquiza, *Dramatic Media major from Adkins, TX after four weeks in the Czech Republic*

Study abroad experiences help infuse students' studies with a perspective that is more globally attuned. When compared with citizens of many other countries, Americans appear to be naive and mostly uninformed about the world. When students study abroad, they return with a significantly different perspective of the world—they are more informed and tend to hold a less biased perspective toward others—including fellow Americans—with whom they may not agree. The evolving global context demands individuals who have international experience. Study abroad gives students a means to develop the skills necessary to excel in the emerging global environment.

From Charla Bailey, Director of International Education

I am originally from Horton, Kansas, which has a population of 1,000. There were not many people with global views in this small farming community. When I participated in my first program abroad, I traveled to Mexico. When I first brought up the subject with my mother, I might as well have said that I wanted to go to Mars. Although she was supportive, she instantly became worried about me going and continued to worry until I returned.

While I was in Mexico, I experienced a variety of customs and personalities within a culture about which I knew very little. I was able to participate in dances, group activities, and meal preparations from which I learned so much about the people and local traditions. I also knew very little of the language before going. I had language teachers who were very patient and a host mother who was very helpful during my practice. At the end of the program, it was extremely difficult to leave my new-found life even though I was looking forward to returning to my familiar surroundings.

Upon return, I had a difficult time readjusting to life in the U.S. I found myself wanting to use public transportation again and missing the times I could walk everywhere. I also would ask questions like, "Why do we need fifteen different kinds of ketchup?" or "Why do we need to rush so much?" I longed for my life in Mexico

with classes in the morning, lunch and a siesta, and then sightseeing in the afternoon with my language partner after finishing homework. It was like taking a potted plant, transplanting it to a larger pot, then trying to move it back to the original pot after a period of time growing. I just didn't fit in the space that once contained me.

In addition to this readjustment, I had to learn how to relate to my parents and friends again after these experiences. This was made especially difficult as they had not had anything remotely close to the same kinds of experiences. For some of my friends, they were excited to listen to my stories (and I think even learned something from them). Others gave me about five minutes to explain and then it was time to move on to another topic.

Eventually, I found my niche again with myself, family, and friends—at the same time keeping my experiences abroad alive. I was able to speak with several community groups and students about my experiences and I kept in touch with a few of the people I had met while in Mexico. I was also able to come to terms with the differences between the two countries and how to change what I could and adapt to what I could not.

Now, through my position at TLU, I have traveled to about a dozen other countries including Austria, Canada, China, England, France, Germany, Japan, Namibia, the Netherlands, Norway, Scotland, Spain, and Wales. Even though I am much older now, every time I tell my mother where I am going, she still reacts as though I am going to Mars, but she is still supportive and a little less worried!

One of my favorite quotations comes from Susan Sontag, “I haven't been everywhere, but it's on my list.” Each time I travel abroad, I learn and grow. I hope to instill the love of learning abroad in the students of TLU. Kaleigh attests to her global awareness and willingness to continue learning:

Upon returning from study abroad, I really enjoyed interacting with the international students at my university. It made me feel connected with study abroad and global viewpoints while in my home country.

I also began mentoring teenage refugee girls. Although I cannot relate to the horrors they have experienced, I do understand, at least somewhat, the experience of living in a foreign country, and I can certainly relate to being a teenage girl in America. The girls and I appreciate each other's company. It is nice for them to have a non-threatening environment in which to discuss their new lives. My awareness of communities throughout the world allows me to be a sensitive, non-probing, friend.

*—Kaleigh Emerson (G'08), Psychology major from  
Castroville, TX Summers in Mexico, India, and Micronesia*

Most students who study abroad consider it one of the most rewarding and enjoyable aspects of their education. It is often a life changing experience. Study abroad provides opportunities for personal reflection and change. Students gain new insights, skills, and worldviews. This new knowledge has followed students as they return to campus and into their lives after graduation.

As many companies and professional organizations are going global, the need for a second language is becoming a real asset for employees. An excellent way to accomplish learning or furthering your knowledge of a second language is to immerse yourself in that language. Many students have reported that their classroom

language knowledge has given them a good initiation into a second language but that immersion in the language and culture really improves the skill. Speaking, reading, and writing the language during daily life abroad provide practical experience in the language.

Beyond language and cultural understandings, students participating in an international experience have the opportunity to learn academic as well as personal information and skills. This is important not only for the sake of knowledge but for the enhancement of one's career possibilities.

Studying abroad was probably one of the best decisions I've made in my life. I get to experience things most people only dream of, meet people from all walks of life, and make friendships that will last a lifetime. Getting to experience another culture for a whole semester has really opened up my eyes allowing me to see things through another perspective and really grow as a person, spiritually and intellectually.

*–Hillary Davidson, Business Administration major from  
China Spring, TX after a spring semester in the Netherlands*

Studying abroad to China was one of the best experiences of my college career. Being immersed in the Chinese culture added all sorts of new viewpoints to give me a true liberal arts education. I also had the chance to meet many lifelong friends who were from different countries who also gave me different perspectives. As a double major in Political Science and International Studies, studying abroad was vital to me and I think as the world begins to globalize more Americans must adapt to the international environment.

*–James Turner, Political Science and International Studies  
major from San Antonio, TX after a fall semester in China*

Adapting to the international environment begins with international travel and study. As a student at TLU, you have access to a wide range of opportunities for international study.

Some of the programs that TLU offers are in-house programs such as the one Professor Price has led. Other such programs have included travel in Austria, Belize, Costa Rica, the Czech Republic, Denmark, Ecuador, Estonia, France, Hungary, Mexico, Norway, Romania, Russia, and Spain. Some are through programs that are affiliated with other academic institutions. These programs are such that students pay the fees of the affiliated institution (which are similar to TLU) and earn the credit as transfer hours. These include Augsburg College which provides programs in El Salvador, Guatemala, Mexico, Namibia, and Nicaragua. Central College offers programs in Austria, China, France, Ghana, Mexico, the Netherlands, Spain, and Wales.

Other study abroad opportunities are through exchange programs. This type of programs is such that students pay fees to the home university and then study abroad. While they are abroad, a student from an institution abroad attends TLU. This type of programs include our two direct exchanges with universities in Ecuador and in Japan. TLU is also part of an exchange consortium called the International Student Exchange Program (ISEP). ISEP has university members from all over the world and to which TLU students could choose to apply. In recent years, we have

had students study in Argentina, Australia, Costa Rica, Finland, Ghana, India, Korea, New Zealand, Northern Ireland, Scotland, and Spain. In exchange, TLU has hosted students through ISEP in recent years from a variety of countries such as France, Germany, and Sweden.

TLU also hosts international students who arrive apart from these exchange programs and are degree-seeking. In the time that I have been at TLU, I have been fortunate to work with degree-seeking students who have come to the U.S. on student visas from Australia, the Bahamas, Canada, China, Colombia, Denmark, Ecuador, France, Germany, Japan, Kenya, Korea, La Reunion, Macedonia, Macau, Malaysia, Mexico, Peru, Nepal, Nigeria, Norway, Russia, Sierra Leone, Sweden, Taiwan, and Zimbabwe.

In recent years, we have had several students from Kosovo. One of those students, Dielli, summarizes the value of studying abroad:

By studying abroad you get to know yourself better, which will help you make sharp and better decisions in the future. Your life becomes more interesting and more dynamic than it was before. You get a broader perspective about life. You become more knowledgeable by learning about other cultures, which makes you appreciate your own culture, religion, and traditions more than you ever did. Most importantly studying abroad gives you a desire to try and make your culture better by integrating good elements of other cultures into your own culture. [This] makes you confident and gives you the feeling that you are the one who can make a difference in your society.

*–Dielli Hoxha, Computer Science and Math major from Gjilani, Kosovo TLU degree-seeking student*

### Where in the World Would You Study and Why?

We hope you will take the opportunity to seek more information about TLU's study abroad programs. Stop by the International Education office for a meeting. You can also visit with students who have returned from studying abroad as they will be happy to share their experiences and photos with you. While our campus is in Seguin, Texas, the world can be your classroom!



## THE PROBLEM OF PROBLEM SOLVING

### Learning to Change the World

John McClusky

For some people memorization is easy. For others it is hard. But either way, memorization won't get anyone very far these days. Sure, there are some things you will need to know in your life and in your job. But no job will pay you to memorize stuff. Computers are faster, cheaper, and better than the best memorizer. And memorization is low-level learning; indeed it is the lowest level in Bloom's taxonomy of learning domains: reciting a bunch of facts doesn't mean you know how to do anything with that information. You will not be hired for knowing facts; facts are easy to look up on Google or Wikipedia—although judgment of the validity of those facts is much more difficult. You will probably be employed to use that knowledge to find solutions. Solutions to problems in medicine: "How do I use the symptoms this patient is telling me to help her get better?" Problems in sales: "How do I use my knowledge to help this person purchase the best car for his budget and need?" Problems in science: "How do I use my knowledge to increase the mileage of this next-generation car?" or, "How do I develop a cure for addiction?" Problems in vocation: "How do I help this person find the life mission that will bring her and her community joy, health, and fulfillment?" Problems in education: "How do I explain the importance of problem solving most effectively to a class of TLU students?"

We run into problems to solve all the time. Many are relatively simple to answer: "Should I fill my car with gas today or can I wait until tomorrow?" Others are extremely difficult to answer: "Why is this couple's marriage falling apart and how do I help them save it?" Some are even more complex: "How do we replace coal, gas, and oil as energy sources with minimal damage to the world economy?" Some problems have low failure costs: "Should I bring my umbrella to class today or not?" while others have dire consequences for failure: "How do we slow the effects of climate change?" Some questions are problems for some people, yet not problems for others who are more knowledgeable in that area: "How can one calculate the surface area of a sphere 7.54 inches in diameter?"

All problems have certain characteristics that separate them from simple questions that are not problems. First, the answer to a problem is not obvious. Frequently it is not obvious even how to start solving a problem. If it were, it would be a *no-brainer* rather than a *problem*. Second, problems often require knowledge or information that is not given in the problem. This may be additional data, limiting parameters, a specific equation, or understanding the relationship between different parts of the problem. Third, many problems contain multiple relationships between the issues that must be sorted out before finding the solution. Finally, problems—

especially difficult problems—typically must be solved in multiple steps and broken into smaller sub-problems; they are simply too big and complex for our minds to grasp all at once.

These characteristics of problems have some important consequences that we often do not recognize and which inhibit finding a solution. The most important is the first characteristic of a problem: it is difficult to solve and, even worse, it often is not obvious how even to start solving it. Many times we are led to believe that if the solution is not discovered quickly—or if the pathway to a solution is not quickly obvious—it must mean that we are incompetent or that the problem has no solution. But to be a *real* problem, the solution *must not* be obvious. It wouldn't be a problem if it were. This leads to another characteristic of real problems: they require creativity to solve. This also suggests that their solutions will usually take some time.

When I worked for Dow Chemical Company as a research scientist, I spent three years working to solve this problem:

Polyurethane foams (like the foam in your car seat, your sofa, and your bed mattress) can be made softer by adding freon (the chemical that destroys the ozone layer) to the chemical mixture when they are manufactured. But if water is used to replace freon, the foam becomes harder, not softer. How can the foam be made as soft when I add water as it would have been had I added freon instead?

This was a very difficult and complex problem; Dow paid me the equivalent of almost \$100,000 each year to solve it. And I did ... but only because I was prepared to solve such difficult problems by struggling with more and more complicated problems throughout my undergraduate and graduate studies. It required a great deal of creativity, first to create a pathway to approach the solution, then to create understanding of the processes which resulted in the physical properties of the two types of foam, and finally to use that knowledge to invent solutions that allowed the formation of soft foam using water.

Another misconception about solving problems is that we should find the solution directly without making any mistakes. While this would be nice, it is extremely rare. Why? Remember, it is a problem, so the solution is typically not obvious to us. Also, generally speaking, we have never encountered this specific question previously—maybe not even a similar question—thus we have no direct experience in solving the problem. So how can we be expected to find a solution without making a mistake? We can't. Solving the problem must involve exploration, and it is an iterative process. Without knowledge of how to solve the problem we will *inevitably* try approaches which may not work. These dead ends are necessary to help us determine what additional information is required and what relationships are present in the problem. Indeed, these “mistakes” are critical to help us learn more about the problem so that it can eventually be solved; they are part of the iterative process of problem solving. We may get frustrated and discouraged when a solution is not obvious or when dead ends are reached. However, the more experience we have, the more we realize that “mistakes” are an important part of solving a difficult problem. Solving a problem is very much like putting a 1000 piece picture puzzle together. Do we expect to find the right place for each piece right when we pick it

up? Of course not. We must try lots of pieces in lots of places to see what fits. Solving problems is no different.

So how can we approach a problem to be solved? There are ten questions that should be used to get you started; I'm sure you will form others that are helpful. Since problem solving is an iterative process, we usually have to go back and cycle through some or all of these questions multiple times as part of the process.

## Guiding Questions

*Question 1. What exactly is the problem to be solved?* Read or analyze the problem carefully. This step is easy to skip, but critical. If we don't define the problem well, we will answer the problem we *think* we are being asked rather than the problem we are *actually* being asked. As my boss at Dow told me, "Nobel Prize winning answers to different problems are not useful solutions."

*Question 2. What information is given in the problem?* At this point we can't always determine which information is relevant and which is irrelevant, so we should write it *all* down. We may also find out while trying to solve the problem that our list is not complete. This is no problem, just add to it.

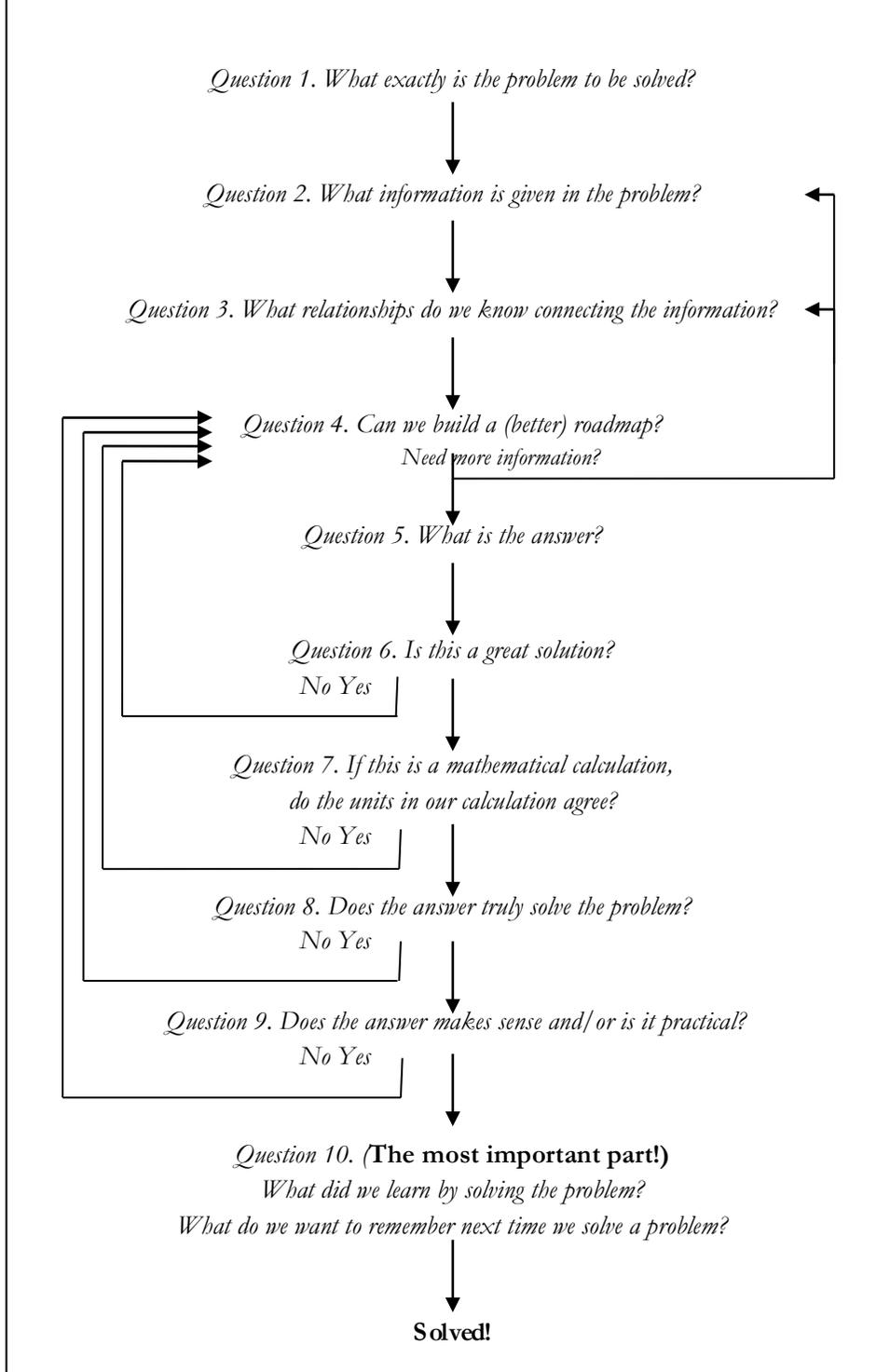
*Question 3. What relationships do we know connecting the information?* These relationships can take many forms, but in general they describe how things are related to each other within the problem. The relationships may be mathematical equations relating different parameters or measurements. They may be observations or associations between two events or concepts, such as "The more I talk on my cell phone the faster the battery is drained." The relationships may be rules, such as "*i* before *e* except after *c*." These relationships are the building blocks that we will use to connect the information given in the problem to the answer we are trying to find.

*Question 4. Can we break the problem down into smaller fragments that, when strung together, will connect the starting information to the answer?* This step is usually the hardest of them all, because it develops our plan for solving the problem. We call this plan a *roadmap*.

*Question 5. What is the answer?* Use the roadmap to find the answer. We can often lose track of where we are in solving the problem while figuring out the details of a particular step in our roadmap. The written roadmap helps us keep from getting lost in the details.

*Question 6. Is this a great solution?* Is it feasible? What are the costs of the solution, financially, ethically, and culturally? Can we find other, better solutions? The more complex the problem, the more likely it is that the first solution is *not* the best solution.

## Problem-Solving Flow Chart



*Question 7. If this is a mathematical calculation, do the units in our calculation agree? Units are a safety net that can help us catch mistakes.*

*Question 8. Is the answer that we determined actually what the problem asked us to find? While answering a different question may be informative, it will rarely impress your professor or boss.*

*Question 9. Does the answer makes sense and/or is it practical? If the answer is not a practical solution, it is virtually useless and we should try to find a more reasonable one. If the answer is numerical and way too big or too small, a simple mistake was likely made.*

*Question 10. **This is the most important step:** What did we learn by solving the problem? What do we want to remember next time we solve a problem? Write it down and save it! This will become your personalized problem-solving toolkit.*

Notice that “What is the answer?” is half way through our list of questions. It isn’t at the end for several important reasons. First, most people make at least one mistake while solving a problem, so the first “answer” usually isn’t really an answer at all. It is very important to check everything to make sure our work is correct. Second, it is very easy, in the process of solving a complex problem, to find the answer to a related problem rather than the specific answer that was needed. Finally, while we learn a lot while solving a problem, the specific answer is rarely the most important. We also learn about the problem topic, how to solve problems better, and common mistakes we may make that we should watch out for when solving other problems. Rather than letting all our learning go to waste, it is important to capture it for future use.

## Roadmaps

The concept of a problem-solving roadmap introduced in question 4 is new to most people, so let’s discuss it some more. Just like travel directions from the internet, our final roadmap will show us, step by step, how we get from the starting point (the question and starting data) to the destination (the answer). It is important to note that initially we don’t answer the smaller problems here; we only have to recognize that we can answer each sub-problem. At this stage all we are looking for is this: “I know I can figure out X as long as I know Y and Z.” In more complex problems we often discover these sub-problems may themselves need to be broken down into even smaller problems. Finally, remember that as we build our roadmap, we may have to go back to earlier questions, especially 2 and 3. Also some ideas or relationships may not end up fitting into the solution. This is expected. Since we don’t know how to solve this problem, we will usually explore some dead ends.

A roadmap is very powerful for a couple of important reasons. First, the roadmap lets us examine the problem without getting bogged down in the details. A map of Austin lets us figure out how to drive from the state capitol building to the Austin Zoo without having to worry about all the details like traffic, finding the street signs while driving, and watching for pedestrians. Similarly a problem

roadmap helps us find our way from the given information to the answer without worrying about the details like exactly how we will solve the sub-problems, although those details are good to fill in *at the very end* to make sure it is truly a roadmap that works. Second, just as driving directions make it easy to keep track of exactly where we are in our travel, the problem-solving roadmap helps us remember exactly where we are in solving the problem after we complete each step in detail.

Problem-solving roadmaps are very important for another reason: they allow much more efficient problem solving. Would it work very well to drive from the capitol to the zoo by choosing random directions to turn down random streets? No. So how can we expect to solve a difficult problem without a good plan about how to get the answer? Without the problem-solving roadmap, we are just doing the equivalent of driving down random streets in the hope that, by luck, we end up at the solution.<sup>1</sup>

What does a problem-solving roadmap look like? It depends. Just as there are many different routes that we can take from the state capitol building to the Austin Zoo, there are usually many different routes we can take to solve each problem. Which one is *best* depends on what we are comfortable with: are we more familiar with one road versus another? Does one route have more traffic than another? Does one involve interstate driving while the other uses more neighborhood streets? Similarly, the best roadmap for one person may look very different than that for another even though they are both valid. The two different roadmaps just build on each person's knowledge, strengths, and ideas.

It is important, however, to note that all finished roadmaps have some important characteristics. First, they connect the answer to the given information. While all the information given in a problem may not be necessary and additional information may be required, there must be a direct and logical connection between given information and the answer. Second, the roadmap must not have any gaps. Each step in a completed roadmap must be connected to starting data, the answer, or an intermediate step.

### Let's Explore Problem Solving on a Simple Problem:

*A cold front is moving in tonight. Should I cover my tomato plants?*

*Question 1. What exactly is the problem to be solved?* Is the question *really* whether the plants should be covered? No. There are many reasons to cover plants. I could cover them to hide them from animals that may eat or trample them, or to hide them from my neighbor who loves tomatoes and may take some. The real question

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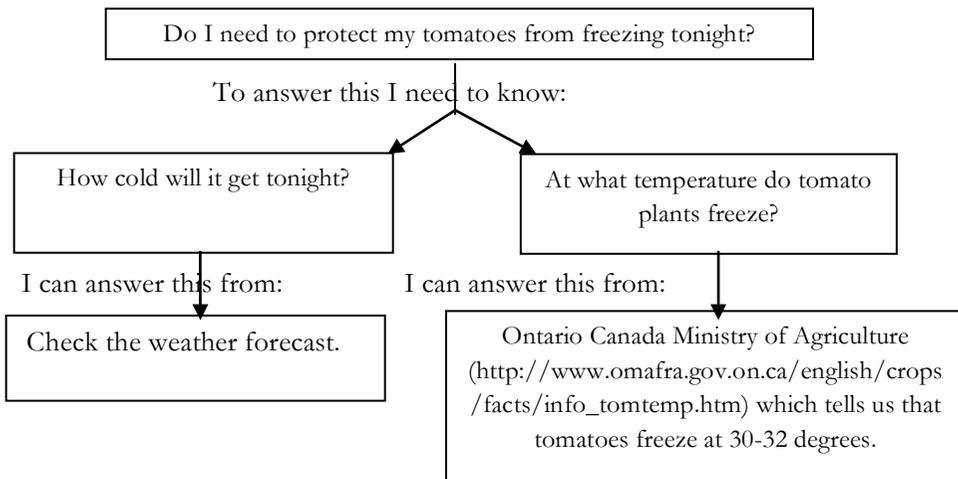
<sup>1</sup> Some people may claim that they can solve problems without using a roadmap. I agree that they can solve a problem without *writing down* a roadmap, but to actually solve the problem efficiently they *must* have a plan for connecting the given information to the solution. That is what a roadmap is. There are several difficulties with using roadmaps that are only in our minds. Here are two big ones: it is harder to notice "mistakes" in a mental roadmap, and once started solving the problem, it is easy to forget what must be done next or even how to finish solving the problem.

is whether they will freeze if they are not protected. So a better problem statement is this: “Do I need to protect my tomatoes from freezing tonight?”

*Question 2. What information is given in the problem?* The only information given is that they are tomato plants, and that a cold front is arriving.

*Question 3. What relationships do we know connecting the information?* I know that tomato plants might freeze if it gets too cold. I know that water freezes at 32° F. I also know that I can find the weather predictions on the radio or the internet.

*Question 4. Can we build a roadmap?* Sure, let’s try it.



*Question 5. Is this a great solution?* It is reasonable. I ought to consider the reliability of my weather forecast and the freezing temperature of tomatoes.

*Question 6. What is the answer?* If the temperature will drop below 32, I should. If it will be in the lower 30’s I ought to, since weather forecasts are not perfect.

*Question 7. If this is a mathematical calculation, do the units in our calculations agree?* Not applicable.

*Question 8. Does the answer truly solve the problem?* Not completely. I haven’t determined what to cover the tomatoes with. But I did address the immediate question.

*Question 9. Does the answer makes sense and/or is it practical?* I know that water freezes at 32 degrees, so the answer does make sense.

*Question 10. (The most important part!) What did we learn by solving the problem? What do we want to remember next time we solve a problem?* I have gained experience using the problem-solving questions, and also building a roadmap. (In most cases, your answers will be much more specific).

## Let's Try Using Our Problem-solving Questions on a Complex Problem:

*How many acres of trees must be planted to absorb all the CO<sub>2</sub> emitted by all the cars and light trucks in the U.S.A. in one year?*

*Question 1. What exactly is the problem to be solved?* This question is stated well; that is not always the case. But we must make sure we are answering the question the problem is asking, not the one we *think* it is. As a professor, I have seen way too many great answers to different questions than the one I asked.

*Question 2. What information is given in the problem?* This problem doesn't give us much information. We just know that we are interested in acres of trees, how much CO<sub>2</sub> they absorb, and how much CO<sub>2</sub> cars and trucks emit.

*Question 3. What relationships do we know about the information?* We have to call upon our general knowledge here, and probably do some research. We know trees absorb CO<sub>2</sub> from the air to make wood and leaves. We know burning gasoline produces CO<sub>2</sub>. Those of us who have taken a lot of chemistry can give the specific relationships needed to directly calculate how much CO<sub>2</sub> is produced from gasoline, but here we will just see if we can find it on a reputable website. We also know that the amount of gas a car uses depends both on how far it travels and how many miles per gallon it gets.

*Question 4. Can we break the problem down into smaller fragments that, when strung together, will connect the starting information to the answer?* This is the hardest part of solving a problem. Remember, we are not supposed to know how to find the solution. For a complicated problem like this, I can rarely solve it from start to finish in a direct line. Rather the process is iterative: I get an idea, then work to see if it will fit into the solution. Sometimes it will, sometimes it would if I just knew another piece of information, and sometimes I find that it doesn't help at all. But even when I can't use the idea, it helps me learn about the problem and get closer to the answer.

We can first break this problem into two pieces (See Figures 1 and 2 for the initial and final detailed roadmaps): 1) how much CO<sub>2</sub> is given off by all the cars and light trucks in the U.S.A. in a year? and 2) how much CO<sub>2</sub> is absorbed by an acre of trees? By doing this we have made two problems out of one, but they are easier than the starting problem. So, how much CO<sub>2</sub> is released by U.S. vehicles in a year? Well, we can figure that out if we can discover: 1) how much CO<sub>2</sub> the average vehicle emits and 2) how many vehicles there are. On the web I was able to find out that in 2007 there were about 136,000,000 cars and 110,000,000 light trucks and vans.<sup>2</sup> There were lots of possible references, but for this I chose the U.S. census because it was recent and the U.S. Census Office is reputable.

Now we have to figure out how many pounds of CO<sub>2</sub> are emitted by a vehicle each year. We can determine this by calculating: 1) how many pounds of CO<sub>2</sub> are released per gallon of gas and 2) how many gallons the average vehicle uses in a

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<sup>2</sup> <http://www.census.gov/compendia/statab/2010/tables/10s1060.pdf>, accessed July 30, 2010.

year. On the Environmental Protection Agency website I found that one gallon of gasoline releases 19.4 pounds of CO<sub>2</sub> when burned.<sup>3</sup> We can figure out how many gallons a vehicle uses in one year from 1) the average miles per gallon each vehicle gets, and 2) the average number of miles driven in a year. I discovered many different estimates of the miles driven per year; most were over 10 years old. I settled on EPA data from 2000: 12,500 and 14,000 miles per year for cars and light trucks respectively.<sup>4</sup> I discovered the average fuel efficiency of all cars and trucks on the road is 22.5 and 17.8 miles per gallon respectively.<sup>5</sup> Since the number of trucks almost equals the number of cars, we can average these numbers for a reasonable estimate, though it would be more accurate to calculate a weighted average. We now found starting data for all the sub-problems in this half of the problem.

Now we have to attack the half of the problem located on the right side of our roadmap: how much CO<sub>2</sub> is absorbed by an acre of trees? I started by deciding I would find out how much CO<sub>2</sub> a single tree absorbed, then how many trees there were in an acre. That would have worked, but I couldn't find how much CO<sub>2</sub> a single tree absorbs. I realized I could calculate this if I knew the mass of a tree, the percent of the mass of the tree that is carbon (which I know all comes from CO<sub>2</sub>), and how long the tree lives, but I couldn't find this information either. Also the number of trees per acre varied wildly from about two hundred to over two thousand. So while this approach would have worked, I ran into a dead end. I tried another approach, and found an EPA site that showed an acre of trees would absorb between 0.3 and 2.1 metric tons of carbon in one year. The big range is due to the different environments and tree species in the U.S.<sup>6</sup> For lack of better information I will take the middle value, 1.2 metric tons per acre per year. I put this all together in a roadmap in Figure 1. Note that first I just put in the concepts and how they were connected. I didn't want to go into lots of details about exactly how I would make the connections because I didn't want to get bogged down in the details too quickly. Also, it wouldn't take as much time if an idea ended up not fitting. Figure 2 has the completed roadmap with the details put in. Notice that I had to add something: I realized I found *metric tons of carbon* absorbed by an acre of trees, not *pounds of CO<sub>2</sub>*. It is very easy to overlook that sort of thing. Going through the roadmap a second time to fill in the details can help identify these problems as can addressing question 8.

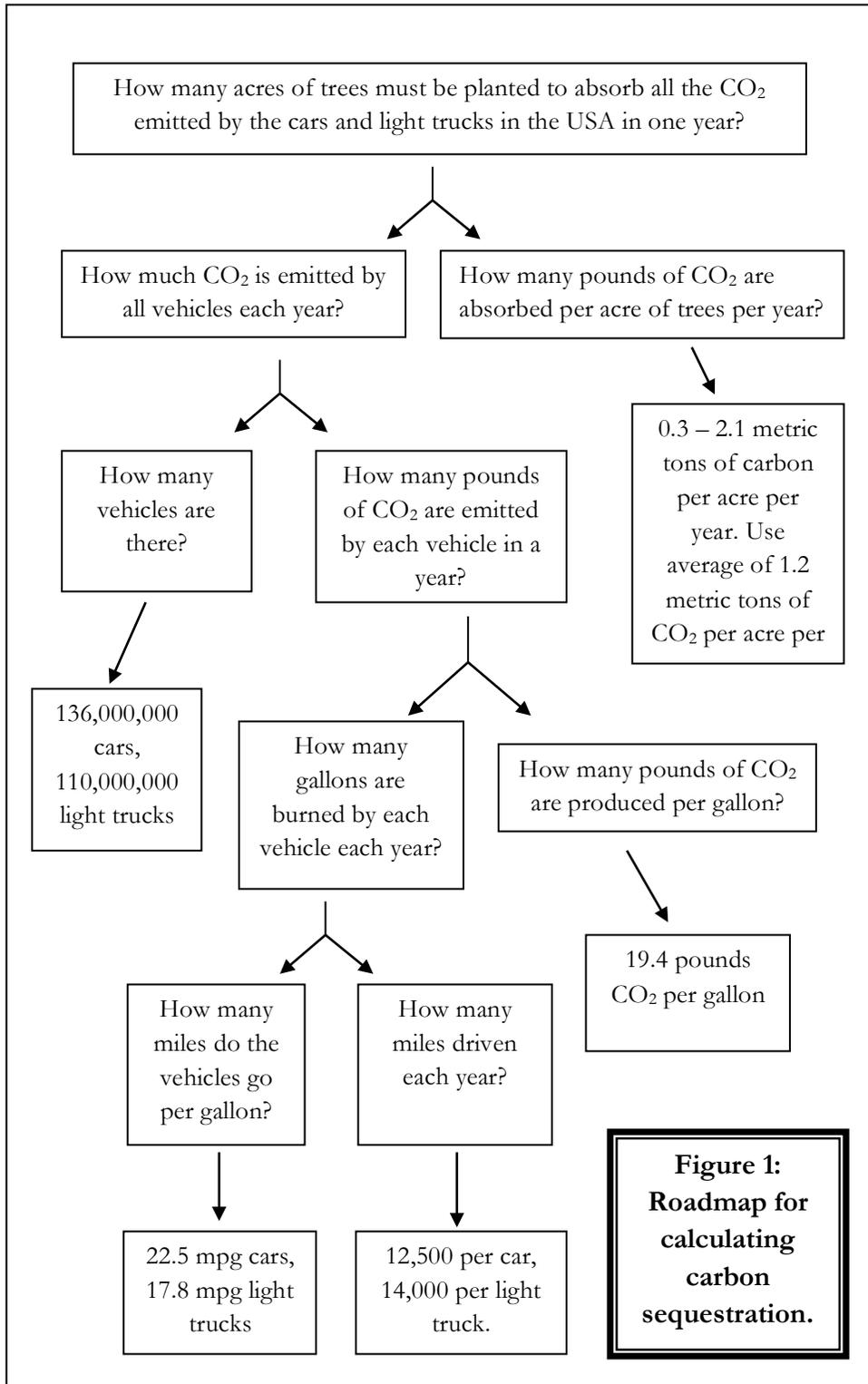
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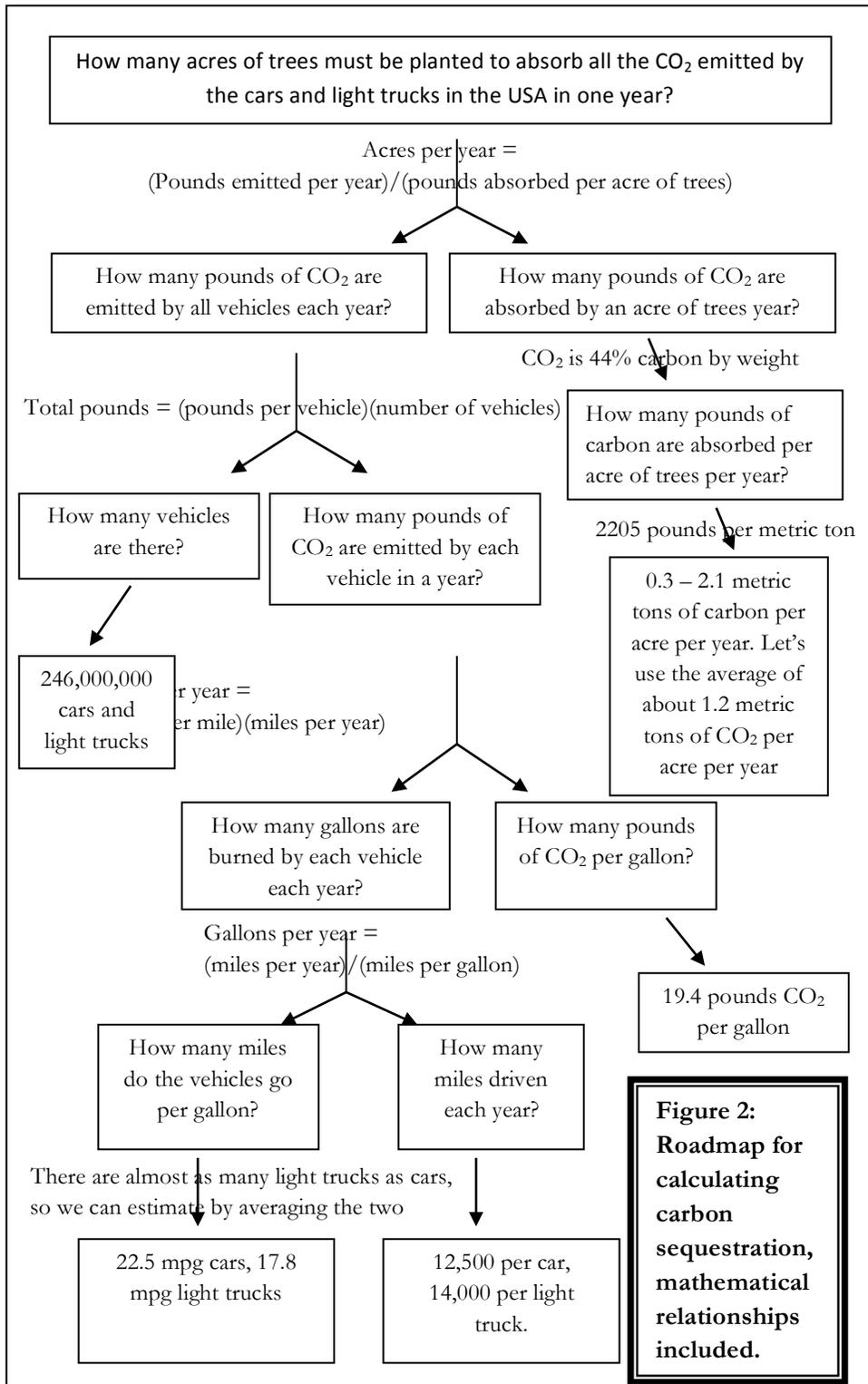
<sup>3</sup> <http://www.epa.gov/oms/climate/420f05001.htm>, accessed July 30, 2010.

<sup>4</sup> <http://www.epa.gov/oms/consumer/f00013.htm>, accessed July 30, 2010.

<sup>5</sup> [http://www.bts.gov/publications/national\\_transportation\\_statistics/html/table\\_04\\_23.html](http://www.bts.gov/publications/national_transportation_statistics/html/table_04_23.html), accessed July 30, 2010.

<sup>6</sup> <http://www.epa.gov/sequestration/rates.html>, accessed July 20, 2010.





*Question 5. What is the answer?* Here we work through to the answer using the roadmap. Note that we work up from the bottom, since that is where all the information we know is in the roadmap.

*Pounds of CO<sub>2</sub> emitted by all cars and light trucks in one year:*

$$\begin{aligned} \text{Miles per gallon for an average vehicle} &= \frac{(22.5 \text{ miles/gallon} + 17.8 \text{ miles/gallon})}{2} \\ &= 20.2 \text{ miles/gallon} \end{aligned}$$

$$\begin{aligned} \text{Miles driven each year by an average vehicle} &= \frac{(12,500 \text{ miles} + 14,000 \text{ miles})}{2} \\ &= 13,250 \text{ miles} \end{aligned}$$

$$\text{Gallons of gas burned by vehicle in a year} = \frac{13,250 \text{ miles}}{20.2 \text{ miles/gallon}} = 656 \text{ gallons}$$

$$\begin{aligned} \text{Pounds of CO}_2 \text{ emitted by vehicle per year} &= (656 \text{ gallons}) \times (19.4 \text{ pounds/gallon}) \\ &= 12,700 \text{ pounds} \end{aligned}$$

$$\begin{aligned} \text{Pounds of CO}_2 \text{ emitted by all vehicles per year} \\ &= (12,700 \text{ pounds /vehicle}) \times (246,000,000 \text{ vehicles}) \\ &= 3,130,000,000,000 \text{ pounds of CO}_2 \text{ per year} \end{aligned}$$

*Moving to the other half of the problem:*

$$\begin{aligned} \text{Pounds of carbon absorbed per acre of trees} \\ &= (1.2 \text{ metric tons/acre}) \times (2205 \text{ pounds/metric ton}) \\ &= 2646 \text{ pounds of carbon per acre} \end{aligned}$$

$$\begin{aligned} \text{Pounds of CO}_2 \text{ absorbed per acre of trees:} \\ \frac{(2646 \text{ pounds of carbon/acre})}{(X \text{ pounds of CO}_2 \text{ per acre per year})} &= \frac{(0.44 \text{ pound of carbon})}{(1 \text{ pound of CO}_2)} \end{aligned}$$

$$X = 6013 \text{ pounds of CO}_2 \text{ per acre per year}$$

$$\begin{aligned} \text{How many acres of trees must be planted} &= \frac{3,130,000,000,000 \text{ pounds CO}_2}{(6013 \text{ pounds CO}_2/\text{acre})} \\ &= 521,000,000 \text{ acres of trees} \end{aligned}$$

*Question 6. Is this a great solution?* The roadmap shows no logical—or ethical or cultural—breaks in the solution. However, some of the data are old and there is a large range for other data, so our answer is an *approximation*. However, we also know that different trees grow at different rates, and some places have more trees per acre than others, so expecting an exact number is unrealistic.

*Question 7. If this is a mathematical calculation, do the units in all our calculations agree? Yes.*

*Question 8. Is the answer that we determined actually what the problem asked us to find? Yup.*

*Question 9. Does the answer makes sense and/or is it practical? This is difficult for this problem. The average miles per gallon and average miles per car seem reasonable: 656 gallons is a lot of gas to use in a year, but if I put in 20 gallons every other week that would be 500 gallons, so 656 seems appropriate. 12,700 is a lot of pounds of CO<sub>2</sub> for a car for 1 year. But at 19.4 pounds per gallon it should be pretty big. The number of pounds of CO<sub>2</sub> for all vehicles is so big it is almost meaningless, but there are lots and lots of cars, so the number should be immense. Thus 521,000,000 acres does make sense; it should be a big number because there are a lot of cars putting out an immense amount of CO<sub>2</sub>. (By the way, 521,000,000 acres is a square of land 902 miles on a side.)*

*Question 10. What did we learn by solving the problem? What do we want to remember next time we solve a problem? **This is the most important part of solving a problem!** Why? Well, one reason is that while knowing how many acres of trees we need to plant in the U.S. to make our cars carbon neutral is neat, this answer has very limited uses.*

But the bigger questions are even more important:

- ❖ What did we learn about the topic of the question, for instance a better understanding about the efficiency of trees to sequester CO<sub>2</sub>, whether it comes from cars, electrical power plants, or forest fires?<sup>7</sup>
- ❖ What was the hardest part about solving this problem? How did we overcome it? What do we want to remember next time we see a similar problem?
- ❖ If we made a mistake while working toward the solution, what was it? Why did we make it, and have we made that type of mistake before? Most people have certain types of mistakes they make most frequently. Learning what they are can help us keep from repeating them!
- ❖ Did we learn anything about solving problems in general? What?

If we skip asking these questions, we will forget most of the things we learned while solving the problem. Focusing on these questions can dramatically help us learn: learn about the topic, learn about solving problems, and learn how we think and approach problems.

From this specific problem we learned that breaking the problem into smaller problems— at least 9 mini-problems by my count—can make it easier. I personally learned I have to be careful that I don't overlook details as I did when I didn't notice I had to change pounds of CO<sub>2</sub> to metric tons of carbon absorbed by the trees. If we find ourselves making this type of mistake periodically, we should watch out for this mistake as we go so we can catch it early. And this type of *simple* mistake is easy to make. Why? We are not focusing on the simple things. Most of our brain is focused on the hard part of figuring out what smaller problems we can string

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<sup>7</sup> When wood burns (or when the trees die and rot), the CO<sub>2</sub> they sequestered is released back into the air.

together to find the answer. That's the same reason that more people have car wrecks when texting than when simply driving.

Also, I tried an approach that turned out to be a dead end, and also noticed I had to go back and make a correction. Both of these were "mistakes" that I actually made while solving this problem. That doesn't mean that I am a bad problem solver; these types of adjustments are common for me. Remember, problem solving is an iterative process because we don't know how to solve the problem in the first place. And if I, Dr. John McClusky with a PhD from Yale University and over 15 years of experience teaching university-level chemistry, made these "mistakes", is there any reason for you to feel inadequate when you make similar "mistakes"? Of course not. These are *problems*, not *no-brainers*.

### What about problems that are not mathematical?

This problem-solving method can work with a bit of modification for all sorts of problems, even if they don't require any math or science at all. Let's look at a few examples.

*Problem: I turned on my computer and nothing happened. What is wrong?*

*Question 1. What exactly is the problem to be solved?* The real question isn't really what is wrong, but rather whether I can get the computer to work again quickly.

*Question 2. What information is given in the problem?* The information is that the computer doesn't work. Duh!

*Question 3. What relationships do we know about the information?* Ah, this is an important one. Here are some basic ones:

- ❖ The monitor gets electricity from the wall outlet.
- ❖ The monitor gets signals from the computer box.
- ❖ The computer box gets electricity from the wall outlet.
- ❖ The computer box gets input from the keyboard and mouse, and maybe the computer network too.
- ❖ There are many more relationships, and they can start to get complex quickly. Is the hard drive working? How is the memory? What about the CPU chip and the motherboard? The more relationships you know, the more things you can work on to fix the problem.

*Question 4. Can we break the problem down into smaller fragments that, when strung together, will connect the starting information to the answer?* In this case, we can write lots of small roadmaps of things we can test to try and get the computer working. We can evaluate each one to see if it is the solution; if it is, great. If not, we can go to the next one.

- ❖ The relationships indicate that the monitor and computer box need electricity. Are they plugged in?

- ❖ Do the computer and monitor have electricity? Do the computer, keyboard, and/or monitor lights turn on when I switch them on? If not, do the wall plugs work?
- ❖ The monitor must get a signal from the computer. Is that cable attached securely?
- ❖ Are the keyboard and mouse attached securely?

Here are three other solutions:

- ❖ Ask a friend who is good with computers to try and fix it.
- ❖ Take the computer to a computer repair shop.
- ❖ Buy a new computer.

*Question 5. What is the answer?* Evaluate each mini-roadmap to see if that is the solution. It is good to start with the easy and cheap ones first.

*Question 6. Is this a great solution?* Taking the computer to a repair shop may be more likely to fix the problem, but will certainly be more expensive and take much more time than checking the cables. Buying a new computer might take a day or two, but will be much more expensive, and require recovering all your files. Trying to check things ourselves will be the quickest and easiest approach, even though it may not be successful. That is probably the best first step, followed by asking a friend for help.

*Question 7. If this is a mathematical calculation, do the units in our calculations agree?* Not applicable.

*Question 8. Is the answer that we determined actually what the problem asked us to find?* Do we now have a working computer? If not, do we have a plan to get one?

*Question 9. Does the answer makes sense and/ or is it practical?* Is the computer fixable, or will it cost more money and time to fix it than to buy a new one? Did our fix *make sense*? If not, we may not have really fixed it and the problem may return.

*Question 10. This is the most important step: What did we learn by solving the problem? What do we want to remember next time we solve a problem?* This one is still important! What do you want to remember to check next time your computer won't turn on? It could save some time if it happens again.

Let's look at another one.

*Problem: I have to write a chapter about problem solving.*

Problem solving can even apply to some writing assignments. Again, some of the questions we listed may not apply directly to writing or may need to be modified. It is also important to recognize that there are several types of writing. One important use for writing is to process our thoughts; it is a way to explore connections

between ideas and to clarify our ideas. The problem-solving questions we are exploring are best to use when writing a focused paper.

*Question 1. What exactly is the problem to be solved?*

You will show the students some of the basic things that one needs to do when coming to a new problem that needs solving. Feel free to choose an example from your own disciplinary work, but hopefully offer them principles that work in problem solving in a broader sense. Perhaps you could even use some examples of the challenges that you faced at Dow before coming here. These comments are only intended to get you started; feel free to steer it in the direction you see fit. Rough word count: 2000 to 4000 words.<sup>8</sup>

*Question 2. What information is given in the problem?* Ideally the chapter will be applicable to solving a broad range of questions. It is to be written for TLU freshmen. It is suggested that I use examples I am familiar with.

*Question 3. What relationships do we know about the information?*

- ❖ I know the steps I use while solving problems. Some are simple. Others have multiple steps.
- ❖ I know the common barriers that students hit while trying to solve problems. I know the suggestions that can help them around those barriers.
- ❖ I know the different types of problems and how problem solving can be used to solve them.
- ❖ I can provide examples demonstrating the problem-solving method.
- ❖ I know the importance of problem solving in life.

*Question 4. Can we break the problem down into smaller fragments that, when strung together, will connect the starting information to the answer?* In writing we call this an outline. In order to save space, I will not share mine.

*Question 5. What is the answer?* Remember, writing is iterative, like all forms of problem solving. This chapter took at least ten major drafts.

*Question 6. Is this a great solution?* An important question: Is my chapter logical? Am I sensitive to ethical and cultural differences? Could I explain problem solving in a better way?

*Question 7. If this is a mathematical calculation, do the units in all our calculations agree?* No numbers were involved in this work, except that pesky word count I was given. Well, this turned out to be more complex than we had thought.

*Questions 8 & 9. Is the answer that we determined actually what the problem asked us to find? Does the answer makes sense and/or is it practical?* These two questions are very important, and closely related to question 5. They caused me to throw half of the chapter away and approach it from a completely different direction.

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<sup>8</sup> This chapter assignment as conveyed by Dr. Philip Ruge-Jones, April 1, 2010.

*Question 10. What did we learn by solving the problem? What do we want to remember next time we solve a problem?* I have a much clearer recognition about how similar problem solving in math or chemistry is to solving other types of problems, even writing. Feedback from other professors about my chapter let me know I need to pay closer attention to the audience for whom I am writing.

Dr. Sliter-Hays, former director of TLU's composition program, shared the questions she uses for writing with me.<sup>9</sup> As you can see, they are very similar to the questions I use for problem solving. Her steps also emphasize the recursive nature of problem solving as well as both the creative and logical aspects.

- ❖ Am I answering the question that I have been asked?
- ❖ What do I know?
- ❖ What else do I need to know?
- ❖ What does my reader need to know to understand my argument?
- ❖ Where is my argument going at this moment?
- ❖ Am I making sensible, believable, and thorough connections between the different points of my argument?
- ❖ What do I need to shift in what I have already written and what I have planned but not yet written to accommodate what I am learning as I continue to research, learn, and write?

I am working and working, but I can't solve it. Now what?

Sometime we will follow all the steps and, despite all our hard work, we won't be able to solve the problem at first. When this happens ... (*When?* Yes, *when!* If we *never* get stuck, we are not trying to solve challenging enough problems, we are not learning to the best of our ability, nor are we making the biggest impact possible in our vocation. So, we *should* have problems we can't solve without a lot of work.) So, *when* we hit a roadblock and start getting frustrated or get a headache, try the following approaches:

1. *Take a short break!* Often we will be able to solve it when we attack it again in a few minutes or the next day. Note that taking a break is *not* giving up. Taking a break gives us time to come up with fresh ideas. We shouldn't wait longer than a day, or we will start to forget all the things we have learned so far.
2. *Review the question and the problem.* Are we missing a small but critical point? Have we identified all the relationships? Have we made any inappropriate assumptions? Is there some missing data we need?
3. *Review our problem-solving "things to remember" list from question 10.* Personally I have learned that there are two tricks my brain likes to pull: answering a different question than the one that was asked, and making an assumption that is not true. Since I now know I frequently make these types of mistakes, they are the first thing I look for. That helps me solve the problems more quickly.

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<sup>9</sup> Personal communication, July 28, 2010.

4. *Is there a similar problem we have solved that we can use as a model or for ideas?* Even simpler ones can get us started.
5. *Explain it to a friend.* Often the act of explaining a problem and its difficulties helps us generate new approaches or identifies mistakes.
6. *Relax!* Some problems have no perfect answer. Some take years to answer. Don't sweat it so much that you spend lots of energy and brain power worrying what might happen. Those thoughts just distract you from solving the problem and expend effort that can't be used to find your solution.

## Final Words

*Problem solving is difficult.* It can be a lot of work. But remember, real problems are *supposed* to be hard; that is what makes them problems. And it is the hard problems that people are most interested in, that people will pay good money to have solved. Solving important questions is difficult, but the results are critically important.

*Problem solving takes practice.* You cannot learn to solve problems in a day. You cannot learn to solve very hard problems in a year. But the more problems you solve, the better a problem solver you will become. And the better problem solver you become, the harder the problems you can solve. That skill can help you get a better job, and more importantly can help you make bigger contributions to your community and the world.

*The approach to solving problems is amazingly similar no matter what the topic is.* My father was an artist; he painted the picture of Old Main that is on the second floor in Beck. People sometimes would ask him if he was sorry that I, a chemist, didn't follow in his footsteps. He used to enjoy telling people that he and I had the same job: solving problems. He solved them in paint: how to capture sunlight on a flower, how to capture the mood of a rainy day, how to make a distant house look like it was in the distance instead of looking like a very small house up close. I solved problems in chemistry: how to convert one molecule into another, how to understand why a reaction gave product A instead of product B.

Dad was right. He and I both solve problems, and we even solve them the same way, just as I have described for you. Some are solved quickly, and some take months or years of work. Sometimes we fail. But we always learn, and each problem we work on makes us better problem solvers able to tackle more complicated and more difficult problems.

*Problem solving is important.* There are many serious problems in the world. Some face all of humanity: alternative energy sources, improvement in international relations, hunger, and the appropriate development and use of science and technology. Other problems, while more individualized, are also very important: curing cancer and other physical and mental health issues, improving individual quality of life, healing interpersonal relationships, and solving all the issues involved in our personal jobs. The list is virtually endless. But all these problems require people to solve them, and their solutions will have dramatic positive effects on people's lives. And *you* can be part of the team that solves them.

## TEACHING YOUR COGNITIVE MISER GENEROSITY Critically Thinking about Our Own Thinking

Tiffany Sia

A miser is defined as someone “who lives in wretched circumstances in order to hoard money” (Webster, 1996). Keep in mind, a miser has money that could be used to better their circumstances but who chooses not to. Within the realm of psychology, there exists another form of miser, the cognitive miser (Fiske and Taylor, 1991). A cognitive miser is someone who avoids spending thoughts even when thinking would be beneficial. Being a cognitive miser has nothing to do with intelligence, just as being a money miser has nothing to do with wealth. Cognitive misers do think deeply, albeit as seldom as they can. Cognitive misers simply use strategies for hoarding their thoughts in situations where it would be better to spend them. These strategies encompass every activity of daily life. The strategies are not bad in and of themselves. Saving money or mental energy is good. However, a cognitive miser always looks for the option that saves thoughts. A cognitive miser asks the price of an item when there is a giant sign with an arrow stating the price. It takes less thought to ask than to pay attention and read.

Our culture is full of cognitive misers. The omnipresent warning labels on our products illustrate the degree to which cognitive misers abound. Each label represents a time when a person felt he or she should have been warned about impending danger. Some of the more absurd warnings represent times people were opting out of thinking: the no-smoking signs near gas pumps, the “drivers must read street signs” signs, and cliffs with signs warning of sharp drop-offs. Even a cup of coffee now comes with warnings that hot coffee can cause burns. Some of us have apparently become so miserly in our thoughts that the sight of hot, steaming liquid does not bring to mind any potential dangers. Unfortunately, most cognitive misers avoid reading the warning labels. Rather than bemoaning how stupid those people are, let us look at why normally intelligent people might sometimes act in apparently thoughtless ways.

### Reasons Why Cognitive Misers Exist

There are a lot of reasons why the strategy of the cognitive miser has proliferated. Keep in mind that these reasons have existed throughout recorded history; no one is immune and people can be affected without knowing it is happening. Let’s discuss four of the many reasons people do not spend their energy thinking (Fiske and Taylor, 1991).

*The first reason is that there is too much information to process.* This reason is often overlooked because we do not actually feel overwhelmed by the amount of

information in our environment. Our brains are designed to focus our attention on only the information that seems most relevant for a given task. Take the penny. All of us have seen thousands over the years. We know what a penny looks like. However, without looking at a penny, try to answer these questions: Is the year printed on the head or tail side? Whose face is on the penny? Which direction is the man looking, left or right? Is “one cent” written on the head or tail side of the coin? Where does it say “In God We Trust”? The odds are you were vague on some of these details because the main information you need to differentiate a penny from other coins is the copper color. In any given situation, we have huge amounts of detail available to us. For example, because you are focused on reading, you may not be noticing the feeling of your clothes against your skin ... until you read that sentence. Our brains focus on many things outside our control. We automatically listen for our names, and are drawn toward processing information related to things we find pleasurable or fear may cause us problems. So, much available information will not be noted, because there is too much information available to remember every detail.

*The second reason for cognitive misers is that not everything requires much thought.* Trying to sort through relevant information slows down our decision-making. Sometimes it is more important to make some decision rather than the best decision. When a car is speeding toward you, reaction is better than thought. For other decisions, thought is better than reaction. Thinking about car payments, gas mileage, and reliability work better in buying a car than choosing the prettiest color does.

We each develop personalized mental shortcuts and habits that make our lives easier and more efficient. We each do a variety of things without thinking very much at all. Certain things in our lives can be done on autopilot safely. But sometimes taking mental shortcuts is dangerous. We all know we need to pay attention and think when driving. Most of us, however, have driven places without any memory of the actual drive. Or we may find ourselves driving somewhere we didn't mean to be going before we realize it and have to turn around. Ironically, this is called being “lost in thought.” It might better be described as having lost our thoughts, at least the ones we need at the moment.

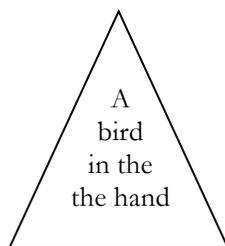
*The third reason for cognitive misers is that most of the time the cognitive shortcuts we use work and do not result in major problems.* Often even when they do cause problems, we blame them on anything other than ourselves. In truth, people do not like changing their behaviors and have a remarkable repertoire of ways to avoid information that would require change. Research by Greenwald and Breckler (1985) has shown that when people do well on a test, they believe it is because they were smart and well prepared; therefore they need not change behavior. When people do poorly, they tend to believe the information was too hard, the test was unfair, or there wasn't enough time to study. Therefore they still do not change their behavior. This avoidance will not cause people to examine their thinking critically. Therefore most cognitive misers make no effort to change their thought processes. For example, many people use the amount of time they have remaining the night before a test to calculate how long to put off studying. A more thoughtful strategy would be to figure out how much time is needed to process the material and then start early in order to ensure enough time to study sufficiently.

If you have ever felt that you have thought so hard your head might explode, you will relate to the fourth reason for cognitive misers. *Thinking takes effort, and that effort is not always pleasant.* In and of itself, thinking is unlikely to make you feel any happier in the moment. People asked to think about why they are happy about a piece of art, a relationship, or a purchase become less happy than people who were not asked to ruminate. Try this thought experiment: When you find yourself wondrously happy, start thinking about why you are happy, how it feels, and if it is a better or worse form of happiness than the last time you were happy (Wilson, 2007). When psychological researchers have had participants do this, one startling consequence occurs: thinking tends to reduce immediate feelings of happiness (Wilson, 2007). When a person is invited to a party, he wants to be at the party. He does not want to check his planner, because he does not want to have to decline the invitation even if it is in his best long-term interests to do so. In this situation, many people just accept the invitation and hope there won't be negative consequences. Yet if they don't get an important project done, it may result in a bad grade or the loss of employment. Herein lies the real problem with avoiding thinking as a way to promote happiness. Some forms of deep happiness arise from times of extended effort and hard work, including the work of careful thinking. Being physically healthy involves exercise that may be boring, repetitive, hard to fit in, and not much fun. However, the payoff of being physically fit is widely recognized. People do not often worry about keeping their thought processes mentally fit, probably because it is not easy to look at someone and know if their thinking is *out of shape*.

### Symptoms of a Cognitive Miser

Now that we know there are cognitive misers, how can we recognize one? First and foremost are a series of mental strategies or shortcuts that reduce the necessity of thinking. Although every cognitive miser differs, they share some common symptoms:

*Symptom 1: Cognitive misers avoid thinking when possible.* They reduce the amount of information that they pay attention to. They may assume they do not need to think. Read the following words in the triangle.



Most people see “A bird in the hand.” If you are like most people, try again, because most people are wrong. They aren't processing all the information; they are reducing the amount of thought to the first thing that makes sense. And “the the” doesn't make sense so it is often not processed. You may have experienced this when

writing papers. Most writers see what makes sense and what they want to see, rather than what is actually on the page. Even careful proofreaders can and often do miss errors.

*Symptoms 2: A cognitive miser ignores relevant information or attends to it selectively.* When there is too much information, we remember only a portion and usually the most interesting portion, rather than the most important. If you think back on your classroom experiences, it will be easier to pull up embarrassing gaffes your teachers have made than to quote their lectures or information from the textbook. This is because our brains store episodes much easier than semantic information like words. Remembering facts and figures takes effort, but you can probably remember embarrassing things that have happened to you without any effort.

A common tactic in print media, especially contracts, is to overwhelm a person with too much information and therefore ensure that most of the information will not be processed. We call it the *fine print*. Printing critical information in small text and embedding it in a lot of jargon will ensure that most people, even intelligent people, will not expend the thought necessary to process the information. Even though we know that the *fine print* is likely to contain pitfalls, we still avoid reading it. I was once sent a Change of Terms notice for my credit card. I knew the jargon was going to be hard to read and seemingly pointless. However, being naturally suspicious, I did wonder why they sent such an unreadable document. Midway through the fine print, I found the trap. The fine print clearly said that they would raise my interest unless I responded in writing that I did not agree to this change of terms. In this case, being a cognitive miser would have cost me a significant amount of money. Many people probably had their interest rates raised, because they assumed the fine print was not worth the mental effort. Very few people consciously think about what they should be thinking about in any given situation. Usually, they simply skim information and hope for the best (Arenson & Arenson, 2007; Fiske and Taylor, 1999).

*Symptom 3: A cognitive miser overuses easily available information even if it is totally irrelevant.* Our brains have developed in a way that makes mental shortcuts automatic, pre-conscious, and very difficult to control. Although we believe we can control our thoughts and think rationally, decades of psychological research has shown this to be an overly optimistic assessment (Wegner, Schneider, Carter & White, 1987). Try this mental experiment: Follow these instructions for two minutes: THINK ABOUT ANYTHING YOU WANT EXCEPT FOR A *WHITE BEAR*. WHATEVER YOU DO, DON'T THINK OF A *WHITE BEAR*.

You ended up thinking about white bears more than usual, didn't you? Research like this has shown that we cannot always control our thoughts. When told by others—or even ourselves—not to think about something, we invariably think about it more. Likewise, we may try to think about something and find that we cannot stay focused on that either. Our brains do what is automatic and habitual, regardless of our desires. Interestingly, while we are trying not to think of a *WHITE BEAR*, we are also not able to process other information as well as normal (Wegner, Schneider, Carter & White, 1987). Participants who try to do math problems while

blocking a *white bear instruction* make more errors and work more slowly than when they are not cognitively distracted (Wegner, Schneider, Carter & White 1987). So if you are reading this article while thinking that you need to stay focused so you can get some sleep, you are probably slowing down your ability to complete your goal.

*Symptom 4: A cognitive miser makes assumptions to reduce the amount of thought needed.* One mental shortcut we take is to assume someone else has that information for us. In psychology, this is called transactive memory (Wegner, Erber, & Raymond, 1991; Wegner, 1995). We assign certain memories to our close friends or family. For example, many people do not need to know birthdates because they know someone who takes care of that memory function in the family. A friend may take care of notifying them when movies they like come out, and yet another friend may know how to access the library databases. Rather than spending the thought necessary for all these tasks, a person just remembers whom to ask. As long as she is able to get to her sources of transactive memory, it isn't a problem. However, panic can ensue when someone can't access critical information themselves. Many times we assume we will have resources like people or the internet available to use when we need them. I, however, hope that if I am choking on a pretzel, the people around me do not need to look up the information in order to save my life.

*Symptom 5: Cognitive misers see what they want to see, not what is there.* Most people want to see things that make sense or make them feel like they have the situation under control. It is not much fun to struggle with different answers and be unsure if what is coming to mind is right or not. Many students have a fear of failure. Failure has become something to avoid. The problem with this mentality is that failure is the way humans best process and learn information. Think of a question on a test you answered wrong. You are much more likely to remember answers and information you struggled with than the information that came easily. However, a fear of failure makes it likely that a person will avoid even thinking about a question if the answer doesn't come to mind automatically. Many students confronted with a question they aren't sure how to answer will choose not to answer at all. This ensures they won't give a wrong answer. They are also robbing themselves of both the learning opportunity and the possibility that they might be able to come up with the right answer. Another example of this is the way in which students have been found to study information. They tend to study the information they already know the best, because it makes them feel good, and they want to believe they *are* prepared more than they want to *get* prepared. The information they are most unfamiliar with is what gets the least attention. They don't consciously mean to do this, but studying information that doesn't look familiar makes students anxious and they want to feel they are going to do well. Their brains trick them into believing the information they know is important and the information they don't know probably won't be on the test.

## This is Only a Test

Remain Calm. Don't Panic! You are about to take a test.<sup>1</sup> You know all the answers, but you need to hurry. The test will help show you how your brain works and help you assess the mental shortcuts you tend to take. Answer the questions as quickly as you can. Do not re-read them.

1. Some months have 31 days, and some months have 30 days. How many months have 28 days?
2. Do they have the fourth of July in England?
3. How many of each kind of animal did Moses take on the ark?
4. If a plane crashes on the border of Mexico and the United States, where will the survivors be buried?
5. If a rooster lays an egg on the peak of a roof, which direction (right or left) will the egg roll?
6. Which side of the chicken has the most feathers?
7. A clerk in the butcher shop is 5'10" tall. What does he weigh?
8. If there are 3 apples and you take away 2, how many apples do you have?
9. Can a California man legally marry his widow's sister?
10. Which is further west: Reno, Nevada or Los Angeles, California?
11. What four words appear on every U.S. coin besides "In God We Trust"?
12. How many cubic feet of dirt are in a hole 1 foot deep, 3 feet long, and 2 feet wide?
13. Cincinnati is a big word. Can you spell it with one "i"?
14. If you had a match and entered a room in which there was a kerosene lamp, an oil heater, and a wood burning stove, which item would you light first?

## Diagnosing a Cognitive Miser

What did you notice about these questions? Did you think they were trick questions? *They were not.* The questions are straightforward. Unfortunately, our brains are not. We have trick brains. Our brains have been trained to parse down information in such a predictable way that they will fool us into answering these questions wrong. Sometimes our brains fool us into believing we do not need to think because the answer is obvious. When we don't even try to answer a question, our brains are trying to avoid thinking under the guise of avoiding failure. Problematically, we will not be in as good a position to take control of our brains and improve our thinking skills if we do not have an accurate diagnosis of our thinking. Let's review the symptoms of cognitive misers (Fiske & Taylor, 1999; Arensen & Arenson, 2008; Lord, 1997): they 1) avoid thinking more than necessary, 2) ignore relevant information, 3) overuse easily available information even if it is totally irrelevant, 4) make assumptions to reduce the amount of thought needed, and 5) see what they want to see, not what is there.

For symptom 1—*cognitive misers avoid thinking when possible*—a common feature is moving quickly over words that we *know* but need to think about to recall the actual definition. In order to conserve thinking, we gloss over a word like “widow” in

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<sup>1</sup> This set of questions comes from <http://kids.niehs.nih.gov/questionstx.htm>.

question 9. Instead we may focus on irrelevant but easy to remember stereotypes like *anything goes in California* in the sister marrying question. Questions 4, 5 and 12 all have a word whose meaning is likely to be ignored, leading to an incorrect answer.

Look back at your answers to see when symptom 2—a *cognitive miser ignores relevant information or attends to it selectively*—showed up. Questions 1, 7, and 13 are probably easier to answer right if a person focuses on the last part of the questions. Take question 13. No one would answer incorrectly if he or she only read, “Can you spell *it* with one ‘i’?” The relevant information was ignored by our brains in a misguided attempt to reduce thought.

Symptom 3—a *cognitive miser overuses easily available information even if it is totally irrelevant*—probably showed up. In question 12, all the information on cubic feet is irrelevant, but likely to get the bulk of our attention. To answer correctly, we just need to remember there is no dirt in a hole since it was taken out to make the hole in the first place. Overusing available irrelevant information is also commonplace. It is hard to think of the word “ark” without Noah coming to mind. This may lead us to gloss over the actual question which is about *Moses*.

Can you see times symptom 4—a *cognitive miser makes assumptions to reduce the amount of thought needed*—came into play? We are likely to assume that our choices in question 6 for feathered chicken sides are limited to top, bottom, left, or right, rather than inside and outside. Once the assumption is dropped, it is obvious that the *outside* of the chicken has the most feathers.

Finally, there is symptom 5—*cognitive misers see what they want to see, not what is there*. In this test, we want to see the right answer and to feel like we are doing well. This will lead us to make question 8 into an easy subtraction problem even though it isn’t. People reading question 2 are likely to make an assumption about what holidays are celebrated in England, even though the question isn’t about holidays.

Tests like this show the sad truth: we are all cognitive misers. We don’t do it all the time, but quite frequently we use mental shortcuts and are not aware of the problems that come from doing so. If our brains function normally, we can’t help but do it. Our brains are specialized to be efficient in spending our thoughts. The problem is that the mental shortcuts that are most likely to develop can be problematic, especially in a challenging venue like higher education.

The questions in this test were pretty commonplace, and everyone knew the right answer at some level. Most questions and problems we confront in real life are more complex and even more likely to be affected by mental shortcuts. Assuming that you understand how to do something can cause frustrating problems like botching an assignment or project. We have all been in the embarrassing position of being the only one who didn’t understand the instructions. It is not because we are stupid, even if it feels like it at the time. Our brains cut corners and keep us from noticing that we don’t understand or have all the information.

It should make us feel better that everyone is in the same boat. Even research scientists who study this field are fooled into displaying these same errors of thought. The questions above are unlikely to trick your brain again, but another set of questions, problems, or situations will work just as well. One political campaign was destroyed by a smear campaign in which one candidate accused the other of wanting to put rat poison in public drinking water. The public failed to ask the right

question, “Why would anyone want to put poison in drinking water?” Actually he wanted to put fluoride in the drinking water to protect children’s teeth, but fluoride can also be used in large doses to kill rats. The coverage offering this obvious explanation was not as sensationalistic or noticed as the story with *rat poison*. We call such tactics spin, but knowing it is spin has not enabled us to ask the right questions or see through it. Looking through our days, we quickly encounter situations where we ignored relevant information, focused too much on irrelevant information, or made incorrect assumptions about what was necessary (Arenson & Arenson, 2008).

If this is causing problems for *all* of us, why don’t we talk more about it? We actually do. Our days are filled with us demanding people “pay more attention,” “think for themselves,” or “focus on the task at hand.” The problem with these instructions is that people honestly do not understand how their brains work, or how to change their thought processes. One important way to gain control of our thoughts is to start noticing the tricks our brains play on us.

Most people’s immediate reaction to being confronted with evidence of their miserliness is to justify themselves: “I was tired,” “I was stressed,” or “I was busy,” trips off our tongues. The problem with the excuses is that we still have to think in these situations. In fact, quite often our most critical thinking is necessary precisely when we are in frantic mental states. One way to better our performance and make positive changes in our lives is to admit the problem now and start addressing the mental shortcuts. It will take a lot of work, and we will not always be successful. However, we will be in a much better place to think critically than the average person.

### Teaching Your Cognitive Miser Generosity

Even after taking the test, most will not believe that being a cognitive miser is a problem; their behaviors appear necessary or desirable to them. This is called denial and is quite normal. Yet keep in mind that very small errors of judgment can have catastrophic results. In the Kitty Genovese case, a woman was raped and stabbed to death while 38 witnesses watched from their apartments in horror. Each assumed someone else had called the police (Arenson & Arenson, 2007). Reading a decimal point wrong can overdraw your bank account. Many of the tricks for stealing a person’s identity are based on stories that don’t require much thought and seem plausible. A person may get an e-mail from their IT department saying that their e-mail is having problems and they need a confirmation of a username and password. Or an e-mail with a friendly subject line may get someone to open something that contains a harmful virus. Most people assume they are too smart to fall for such tricks until they do. Their intelligence is not what got them in trouble; it was the cognitive miser taking shortcuts. It may not seem very dire, but miserliness can be extremely bad. Each of us has moments in our lives that would have gone better if we thought more carefully. With luck, the results of insufficient thinking were not catastrophic, but sometimes they can be. After a catastrophe we find ourselves saying, “I should have known,” “Hindsight is 20/20,” and “I just wasn’t thinking straight.” One person drove into water covering the road and lost his family; another thought downloading a paper from the internet would work and failed an

important class. Admitting and addressing the problem can help eliminate both future problems and regrets.

Even if people admit that they take mental shortcuts, they often defend their shortcuts and minimize problems that arise. This is called rationalization. It is also a common strategy to shift the blame for our errors away from ourselves. The term “trick question” is just a way to avoid blaming ourselves. This is called defensiveness. This language sounds familiar because cognitive misers follow a similar pattern to problematic behaviors such as smoking, drinking, or gambling. There are clear ways to address these behaviors, and there are clear ways to address being a cognitive miser.

The stages of change model (Prochaska & Diclemente, 1983; 2005) has been widely applied to examining how people make positive changes in their lives. There are four stages:

1. *Pre-contemplation*: Refuse to recognize you have a problem.
2. *Contemplation*: Realize that a problem exists, but minimize severity or your ability to change the situation.
3. *Action*: Take actions to change and evaluate success of each action taken.
4. *Maintenance*: Continue to maintain the actions that help.

Each person will go through these stages in different ways, but will be able to monitor and check their progress.

The first step toward change is always to recognize and admit the problem. In *precontemplation*, people do not notice they have a problem, even though the evidence is obvious to those around them. Take the syllabus conundrum: professors often tell students to read the syllabus or chastise them for not having noticed important points. Students usually respond quite truthfully and resentfully that they did read the syllabus. They are likely to be unaware that the cognitive miser interfered with their processing of the syllabus. Most students reading a syllabus want to see one thing: the end of the syllabus. This leads to skimming, skipping, and a general dilution of the information in it. Relevant information is ignored, assumptions are made, and it all seems clear. Later in the semester, students may have questions, but when they consult their memories they do not recall reading about it in the syllabus and so do not check the syllabus. All of these decisions happen without conscious processing. Every semester syllabus questions lead to tension, stress, and awkward conversations with faculty. My brain also plays tricks on me. I assure students a due date is on the syllabus when it may not be. I remember the due date and take the shortcut of assuming it is in the syllabus, rather than checking. I admit this, since the first step to change is admitting I have a problem.

Cognitive misers have a lot of defense mechanisms that keep them from seeing their habits as harmful. Almost everyone believes that they are nice, smart, and have a great sense of humor, as if these are concrete qualities like having ten fingers. In reality, we could all be nicer, smarter, and laugh more. By assuming we possess these qualities, we make it less likely that we will strive to improve in these areas. Often when a person does something stupid, he or she will not admit it. People will give very good reasons as to why they did it, and convince themselves and often their listeners that it really was unavoidable. They do not have to change their behaviors,

their assumptions, or feel bad about themselves. However, the desire to improve may motivate us to be honest.

Once we admit we have a problem we can move on to the next stage of change: *Contemplation*. We know a problem exists, but are not yet certain what to do about it. We may minimize the extent that the behavior causes a problem. During contemplation, we also need to start thinking about what we could do to change the situation and whether or not we really want to exert that effort. We may not be sure exactly what to do. What strategies will work and what will just be a frustrating waste of time? Since each of us has different mental shortcuts, blanket rules for how to change our thought processes won't work. Contemplation must include a careful assessment of when and what mental shortcuts are getting us in trouble. The next time you suspect your cognitive miser is on the move, look for the symptoms discussed earlier, and if you find them, take a minute to think about the repercussions. Or after an error or miserliness occurs, take a second to note when it happened and at what point pausing to think could have thwarted the miser.

The third stage is *action*. A person chooses the most likely strategies to address the problem and does them. For action to be successful, the person must actually take action and evaluate if what they did made a difference. Forcing ourselves to stare at a chapter, while praying we will remember the content, seldom works. Learning to spend your thoughts wisely means trying a variety of strategies. The main challenge in the action stage is that people often try one thing and then announce it didn't work and give up. Some say, "I tried to study, but it never works." If they keep trying to study using the same unsuccessful strategy, it won't work. Try new things. Read the material out loud, find a classmate and take turns reading to each other, read it back to front, create flash cards. Keep trying strategies until something works. The strategies can be anything that keeps the cognitive miser in line. Some people take notes and have a day planner. Other people find reading in a quiet place with no distractions is the answer. Be creative in your strategies.

The last stage is *maintenance*. Once a successful strategy is found it must be maintained continually. If you expect benefits from an exercise regimen or a diet, you have to keep doing it even after the initial thrill of success wears off. When we stop trying, we will revert to being a cognitive miser. However, just like any other habit, our thoughts can be changed with effort. Try not to get frustrated, and just keep working.

### Strategies for Maintaining a Healthy Thought Spending Regimen

No magic bullets will eliminate the problems that mental shortcuts cause. Try these, keep what works, and start finding other strategies that work especially well for you. If it helps, name your cognitive miser, then you can engage in a friendly mental argument with him or her when you encounter a problem—and you will eventually encounter a problem.

First, *become and remain suspicious of the tricks your brain is pulling on you*. Drop the denial, the defensiveness, and the hostility. Just admit it and figure out how to take control of your thoughts.

Second, *identify the mental shortcuts that get you in the most trouble*. Do you overlook relevant information? Are you easily distracted by irrelevant information? Do you make assumptions that later turn out not to be true? You may want to keep a thorough journal for a few weeks to really figure this out. Once you know your problematic mental shortcuts, start trying to reduce the errors that result from them. It is easiest to spot mental shortcuts after a mistake is made. Forgetting a due date shouldn't be glossed over with an excuse. It should be examined to find out why it happened. Maybe you don't carry your planner to class but jot down things later when you are in your room. The problem is that if you get distracted between class and your room, the error will occur again. Or it may be you are used to someone reminding you, only no one in this class does that.

Third, *identify problematic mental states*. In some cases it may be easier to identify the mental states in which miserly shortcuts occur. Most people are less likely to think critically when they are happy, distracted, stressed, tired, or angry. In addition, physical states like being hungry, thirsty, or fatigued can reduce our likelihood of processing information fully. Under which conditions do you make the most mistakes? If you can eliminate the state, do so. Otherwise, think carefully when you are in these states.

Fourth, *check for problematic cues in the environment*. If there are other people who are reacting quickly, it can pressure us to do the same and reduce thinking. Blatant non-thinking is very contagious. We may also assume incorrectly that other people's decisions reflect thought and so ours do not need to repeat the process. Start taking mental action by either avoiding these environments or becoming comfortable with being a thinking non-conformist.

Fifth, *locate and consult the necessary resources*. Sometimes resources are needed to make thinking truly useful. These resources may be the library, on-line sources, academic support people, or syllabi. We get the false sense that knowing where information might be is the same as having the information. It is not. *Locating* information is not the same as *processing* the information. When we say we just need to find the article, we are leaving out the time it will take to read the article. In addition, we might assume we know where to find the information, but are then quite stricken to discover it wasn't where we thought it might be. It saves time to actually find and use your resources.

Sixth, *stop trying to avoid challenges and failure*. Many people only choose situations where they are confident they can succeed. They believe this will allow them to excel, but it is really another cognitive shortcut that can limit opportunities.

We learn more from mistakes because we can then see where our thinking went wrong. The reason people tend to give up is that it feels rotten to fail. It didn't always feel like that. Young children thrive on failure. How many times does a child try to get up and walk before succeeding? Their motivation comes from wanting to master the skill of walking. This is called *mastery motivation*. However, adults usually have *performance motivation*. We want to perform the skill well for the benefits that will accrue like praise, money, grades, and rewards. If we don't do well, we feel bad and stop trying.

Focus on the skill you are attaining, not what consequence is coming. Focus more on learning useful information in a class than on the grade you want. The few

people whose motivation and focus is on the mastery of the material do much better than those who focus on the outcome of the performance.

In an academic setting it can be very easy to think the whole point is to get good grades. However, the real point is to be building skills that will allow you to succeed in life. Students with mastery motivation try as hard to improve after a good grade as they do after a bad grade. One error many “A” students fall into is thinking that because they got a good grade, they have attained the skill. Most academic skills have no such limit. Award winning authors continue to improve their writing skills. Only by continuing to challenge ourselves can we continue to make positive changes.

Seventh, do not react with hostility when cognitive errors occur. Defensiveness, anger, frustration, and hostility are all mental states that make it more likely further errors will occur. Understanding the cognitive miser paradigm can help reduce lashing out when personally confronted. It is also important to be understanding when other people fall into cognitive errors. They are not being stupid; they are being tricked by their own brains. Spending your thoughts wisely, and showing others how that is done, greatly reduces the number of cognitive errors that occur. It is also the first step toward thinking more fully, more critically and more generously.

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## DIFFERENT WAYS TO THINK ABOUT MORAL PROBLEMS

An Introduction to Ethics as an Academic Discipline

H. David Baer

The purpose of this essay is to introduce you to some of the central features of ethics as an academic discipline. You may be surprised to learn that ethics is a subject matter at college in which you can take classes. After all, isn't ethics a matter of personal opinion? You have your values and beliefs and I have mine. How can I impose my values on you, and similarly, how can you impose your values on me? Certainly, there are limits on the ways we can impose our views on others, but at the same time, part of what it means to hold beliefs is being prepared to explain and defend them. One purpose of ethics as an academic discipline is to help you think more seriously and more deeply about some of the beliefs you hold.

Unlike many other disciplines you will study at college, ethics involves making value judgments. To decide that something is right or wrong is to approve or disapprove of it. Therefore, ethics as a discipline evaluates different choices and discriminates between them. It recommends courses of action. That is to say, ethics as an academic discipline articulates moral judgments. To articulate a judgment, however, is different from voicing an opinion. An opinion is merely asserted while a judgment has the support of reasons. The discipline of ethics involves identifying arguments, discriminating between them, and articulating good reasons for making particular value judgments. In what follows, I'll try to show you some of the different ways in which moral philosophers and theologians have tried to reason about moral questions and defend moral judgments.

### The Importance of Identifying a Point of View

A moral judgment is always articulated in response to some question about human action. People, throughout their lives, encounter situations that require making decisions. In a perplexing situation, one must decide on a plan of action; confronted by an array of options, one must choose a particular course of action. For example, a student graduating from high school faces a number of possibilities. He or she might start working right away in the family business, begin to pursue a career in professional sports, join a cloister to become a monk or a nun, or attend college to earn a baccalaureate degree. Confronting these possibilities, the high school graduate must make a choice, he or she must decide on a course of action.

The way one approaches questions about human action, however, and the judgment one makes about the right course of action, can vary depending on one's

point of view. A question about human action asked from a first-person point of view is a question about what *I* should do. A question about human action asked from a third-person point of view is about what *they* should do. For example, the theologian Karl Barth believed that ethics concerned the shape of human obedience to the command of God. He approached ethics from a first-person perspective, because he wanted each person to encounter God directly and ask, what is God's will for *me*? How should *I* respond to the command of God? In contrast to Barth, the philosopher John Stuart Mill believed ethics was about how to achieve the greatest overall happiness in society. Mill approached ethics from a third-person point of view, because he wanted to give advice to decision-makers like politicians and legislators about what *they* needed to do to make society a better place to live in.

The perspective one adopts on ethical questions can influence the shape of one's moral judgments. Consider the question: should reproductive technologies involving surrogacy be permitted? A woman who asked this question from Karl Barth's first person perspective would ask, what does God want *me* to do? The woman might decide that God has commanded that her body be given to one man in marriage, that surrogacy requires sharing her body in intimate ways with more than one man, and that, therefore, God's command to her is that she not be a surrogate mother. In thinking about the question this way, the woman would not be making a judgment about surrogacy in general; she would not be making a judgment about what other women should do; she would be deciding about herself. Now consider the same question about surrogacy asked from John Stuart Mill's third-person perspective. The question is no longer, should *I* be a surrogate mother? but rather, should society allow the practice of surrogacy? Legislators deliberating on this question should, according to Mill, consider what policy will produce the greatest overall happiness in society. *They* would need to weigh the happiness the practice of surrogacy can bring to infertile couples against any potential harms, and if they decide that surrogacy will bring more overall happiness than unhappiness, *they* should make the practice legal for others. Notice, however, that in making surrogacy legal, the legislators would not be recommending surrogacy one way or another to any particular woman asking herself, should *I* be a surrogate mother?

It turns out that the perspective a thinker adopts when approaching ethical questions not only affects the answers they give to particular questions, but can also affect the shape of an entire moral theory. Thinkers who like to approach ethical questions from a first-person perspective frequently produce a moral theory focused on character and virtue. Thinkers who like to approach ethical questions from a third-person perspective often produce a moral theory focused on results and consequences. Let's consider these two kinds of moral theory briefly.

### The Difference Between Moral Theory Focused on Character and Moral Theory Focused on Consequences

A moral philosopher with whom you may be familiar, Socrates, generally approached ethical questions from a first-person perspective. His concern with first-person questions also led him to develop a moral theory focused on character. Socrates believed the most important task in life was to become a moral person. The

steps in the development of his moral theory went something like this: I know I want to be happy, but what is happiness? True happiness is not really the good feeling I get when I'm in a good mood, rather true happiness is a condition of the soul. Therefore, if I want to know what true happiness consists of, I need to understand the nature of the soul. Now, the nature of the soul is to seek out what is true and good, and the best way to seek out what is true and good is to live a virtuous life. To live a virtuous life depends on wisdom, and wisdom gives rise to virtues necessary for living a happy life. Germaine Walsh's chapter in this book mentions several of the virtues Socrates pursued: justice, courage, moderation, piety, love, and friendship. Any person who lacks such virtues, Socrates believed, also lacks the ability to make good decisions, and a person who cannot make good decisions will never be happy. Therefore, Socrates reasoned, if I want to be happy, I need to acquire the virtues and develop my moral character.

Of course, Socrates was not the only philosopher to develop a moral theory centered on character and virtue. Many philosophers have adopted his basic approach to the moral life, and we label this approach *virtue theory* or *character ethics*. Character ethics, as the name implies, is concerned with questions of moral character. It is a type of moral theory particularly well suited for asking questions from a first-person perspective. Within the framework of character ethics, the moral agent asks herself, what kind of person will I become, if I decide to act in this way?

However, because of its focus on the individual, character ethics is not always helpful when thinking about social questions, questions which we are more likely to approach from a third-person perspective. Many times—although not always—thinkers concerned with social questions will develop a moral theory focused on consequences. One important moral philosopher who developed a moral theory focused on consequences was John Stuart Mill. Mill called his theory *utilitarianism*. According to utilitarianism, ethics is about producing the greatest good for the greatest number. An action that produces more good consequences than bad consequences is the right one; an action that produces more bad than good is wrong. According to Mill, the greatest overall good should be measured in terms of *utility*, a principle that assesses happiness. Thus the greatest overall good is that which produces the greatest overall happiness.

Mill's utilitarianism led him to develop a defense of toleration and liberty. According to Mill, the only justification for interfering into the affairs of another person is to prevent him or her from harming someone else. Since to allow someone to harm another would be to allow a decrease in the overall happiness in society, harm should be prevented. Otherwise, however, when people are not harming others, they should be left free to do as they choose, according to their own good pleasure.

In fact, utilitarianism became part of a larger movement of social reform in 19th century England. Mill and others like him looked at laws and social practices in their day and found them lacking. For example, laws which prohibited unorthodox religious beliefs and practices, or laws which punished people for personal immorality (things like adultery or sexual deviance) could not be justified in light of the principle of utility—they did not contribute to the overall happiness. Similarly, restrictions on the roles that women could fill in society were unjustified because

they inhibited a woman's personal development, which again subtracted from the overall happiness. In short, the theory of utilitarianism raised questions about the way people were being treated in society and generated arguments about how to improve things.

This ability to focus on social questions is the main strength of utilitarianism. At the same time, because it focuses so exclusively on social questions, utilitarianism has very little illuminating to say about personal ethics. In other words, by adopting a third-person perspective so exclusively, utilitarianism forgets about first-person questions altogether. To discuss first-person questions, we need something like character ethics.

However, to make matters even more complicated, there is yet a third type of moral theory, different from both character ethics and utilitarianism, which focuses on duties and obligations. This third type of moral theory is often labeled *deontology*.

### Deontology: Ethics Centered on Duty and Obligation

Deontology is a type of moral theory that focuses on absolute rules. Rather than focusing on consequences, as in utilitarian theory, or focusing on questions of character, deontology says that one should form moral judgments about human action by applying the appropriate rules. Furthermore, these rules are exceptionless. So, for example, if I want to know whether I should tell a lie, I don't need to think about the overall consequences—as with utilitarianism—and I don't need to ask about what lying will do to my character—as with character ethics—I simply need to discover whether or not there is a rule against lying. If there is a rule against lying, which there is, it will be exceptionless. Therefore, one may never tell a lie, period—no exceptions.

Deontology introduces a new set of considerations into our discussions of ethics, which do not overlap with the distinction between the first- and third-person perspectives I introduced earlier. One can arrive at deontological positions setting out from either a first-person or third-person perspective. One moral philosopher who held deontological positions, but who approached ethics from both a first- and third-person perspective, was Immanuel Kant. Kant is a very difficult philosopher to read, but he is also an important one, so trying to understand Kant is worthwhile.

Kant believed human beings were rational; they could understand the rules of logic and use logic to understand the world. Kant also believed morality was rational; whatever the moral law commanded was in agreement with the rules of logic. Because the moral law is rational, and because human beings are also rational, human beings could discover the moral law within their own reason, that is, within their own minds. A person who looks within her own mind and discovers the moral law within her reason must then confront a choice. Either she may disregard the moral law or she may obey it. This, in a sense, is a first person question: should *I* be moral, and if so why?

Kant says I should obey the moral law, because in obeying the moral law I become free and self-determining. The person who obeys the moral law is free and self-determining because he causes his own action. By contrast, a person who ignores the moral law is not free, because in that case the cause of his action is

something other than himself. To be free is to be the cause of your own actions. Since the moral law exists in my own mind, I cause my own actions when I obey the moral law within me. To be unfree is to have your actions caused by something else. When I disregard the moral law, my actions are caused by things outside of myself; for example, the opinion of my peers or the desire for material possessions.

So for Kant the answer to the question, should I be moral? is yes, because by acting in a moral way I become free. Furthermore, according to Kant, the moral law applies all the time, without exception. Since only the person who adheres to the moral law is free, if we wish to remain free, we must adhere to our moral duty at all times. We can never make exceptions. Kant held that the moral law is exceptionless; that makes his theory deontological.

Kant's deontological theory influenced the way he approached social ethics, questions approached from a third-person perspective. In approaching social ethics, Kant developed a theory of human rights. To say that people have rights is to say that they are entitled to a certain kind of just treatment, without exception and regardless of the consequences. Kant believed that because human beings are rational and have the moral law within them, they must always be treated as ends and never as merely a means. Kant called this the *categorical imperative*, which he formulates this way, "Act in such a way that you treat humanity, whether in your own person or in the person of another, always at the same time as an end and never simply as a means."<sup>1</sup> To treat someone as an end is to respect them for who they are; to treat someone as a means is to use them as tool in a project. So Kant's categorical imperative may just be a fancy way of expressing the Golden Rule: *do unto others as you would have them do unto you*. For Kant, however, the Golden Rule applies absolutely, without exceptions. To disregard the rights of another, no matter what the circumstances, is a violation of the moral law.

## Overview and Evaluation

We have reached a point where we can summarize a number of central points concerning ethics as an academic discipline. Broadly speaking, there are three types of moral theory. The first type of theory we considered focuses on character and virtue and might simply be called character ethics. The second type of theory we considered focuses on consequences and is frequently called utilitarianism. The third type of moral theory centers on duties and obligations and is usually called deontology. In addition, moral questions can be approached from at least two different perspectives, what I've called a first-person and third-person perspective, and the kind of perspective a thinker adopts tends to influence the shape of his or her moral theory.

In fact, many moral disagreements are rooted in competition between conflicting moral perspectives and theories. Consider, for example, the controversy surrounding legalized gambling. Many states sponsor a lottery or other forms of gambling as a way of increasing state revenue without levying taxes. Proponents of

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<sup>1</sup> Immanuel Kant, *Grounding for the Metaphysics of Morals*, trans. James W. Ellington (Indianapolis: Hackett Publishing Company, 1981): 36.

state sponsored gambling argue that this is a painless way to raise revenue, since only the people who want them buy lottery tickets. Proponents make a kind of utilitarian argument about the good consequences that come from state sponsored gambling. In contrast, critics argue that state lotteries appeal primarily to the poor, who can't afford to spend money on the lottery, but who dream that winning the lottery will improve their economic circumstances. In other words, the argument goes, the lottery takes advantage of certain kinds of character weaknesses found among the poor, and even contributes to perpetuating those weaknesses. This is an argument based, at least in part, on character ethics, because the argument is that gambling is bad for moral character. Of course, if one were a deontologist who believed gambling was wrong in itself, then one would oppose state sponsored gambling regardless of the good consequences it might bring, and irrespective of questions about the effects of gambling on moral character.

Given the variety of approaches to ethical questions, you might reasonably feel confused about which theory or perspective is best to adopt. My own suggestion would be that, rather than electing for one moral theory or perspective, you should recognize that every theory and perspective casts light on an aspect of moral experience that is important. The difficulty is knowing when and how to draw on different perspectives and theories when formulating moral judgments.

Consider deontological theory, which is frequently the object of criticism, but which also seems to offer a necessary perspective. To many, an ethic which disregards all consequences and focuses exclusively on exceptionless rules seems irresponsible. For example, Kant argued that a person could never tell a lie, even if by doing so he could protect a person hiding in his house from a potential murderer. Many of Kant's critics have thought this position extreme. A utilitarian would say that a person must accept responsibility for the consequences of his actions. Thus it would be better to tell a lie in order to protect the person hiding in your house, than to assist the murderer by telling the truth. An ethical system like Kant's, which focuses on duty without regard for the consequences, is irresponsible—or so a utilitarian like John Stuart Mill would argue.

On the other hand, certain aspects of the moral life simply cannot be explained convincingly without the view that sometimes one must do right regardless of the consequences. Consider a moral value like fidelity. The nature of fidelity is to remain faithful, but faithfulness manifests itself most strongly in situations where a person is under pressure to be unfaithful. A martyr remains faithful to God at the cost of his or her life. In marriage, fidelity means standing by one's spouse for better or worse, in sickness and in health. A wedding ceremony in which husband and wife promised to be faithful just so long as that would contribute to the greatest overall happiness would be—at the very least—odd. As a matter of fact, the vast majority of figures in the Western intellectual tradition who have thought about ethics have also held deontological convictions of some sort or another—although they have generally not been radical deontologists of the sort Kant was.

Nobody can tell you when precisely to adopt a particular perspective during the consideration of a particular moral problem. That's a matter for individual deliberation and judgment. At the same time, by learning to draw upon these different moral theories and perspectives you may discover certain issues and

questions that you had not seen before. For example, one way to think about the difference between deontology and utilitarianism, a way that goes beyond simply choosing to adopt one approach over the other, is to recognize that the differences between the two have a lot to do with the way we measure the nature and extent of human responsibility.

People with deontological views tend to think that human responsibility is limited. Their view is often related to theological commitments, particularly a belief in God's providence. Ultimately, a deontologist might say God is responsible for the human condition, which includes both good and bad. Human beings are neither wise enough nor powerful enough to manage that condition; thus they are not responsible for the negative consequence that may follow from adhering to the moral law. The difference between God and human beings, on this view, is the source of moral limits. A utilitarian, by contrast, is likely to find the effort to limit human responsibility objectionable. Indeed, the central utilitarian maxim, *the greatest good for the greatest number*, assumes that, with sufficient deliberation, human beings are capable of producing the greatest overall good.

This utilitarian confidence in our capacity to manage human affairs is distinctly modern. It depends upon a level of scientific understanding and technological mastery of nature unknown throughout most of human history. In the Middle Ages, for example, Europe was ravished by the bubonic plague, a bacterial disease transmitted by fleas carried by rodents which can be easily treated today. But people in the Middle Ages did not know about bacterial infections and how to treat them, nor did they understand the importance of hygiene, and we do not fault those people for failing to prevent the spread of the Black Death. Today, however, if fifty to seventy-five percent of the population in Austin and San Antonio were wiped out by the bubonic plague we would rightly blame public health officials for failing to prevent a humanitarian catastrophe. Again, when Hurricane Katrina hit New Orleans a few years ago, the government was criticized for failing to help the thousands of people stranded in the city. A hundred years earlier, however, a hurricane destroyed the city of Galveston, possibly killing more than 10,000 people, who, because they lacked satellite imagery, did not even know the hurricane was coming. We do not hold a government in 1900 to the same level of responsibility to which we hold the government in 2005, because the human mastery of nature and technology in the two centuries is vastly different.

Our ability to manipulate nature and to manage societies is not only a necessary presupposition of utilitarianism, it is also the source of tremendous improvements in the human condition, improvements all of us would wish to affirm. A strong sense of the ways in which we can make the world a better place inspires every moral theory, like utilitarianism, that emphasizes consequences and the human responsibility for outcomes. At the same time, one should ask whether the human capacity to produce the greatest good is really unlimited. Much of twentieth century history records the rise and fall of totalitarian regimes, like Nazism and communism, which caused tremendous suffering. Yet the guiding maxim for every totalitarian regime is *the greatest good for the greatest number*. One could even argue that in a certain sense the most influential utilitarians in history were Adolph Hitler and Joseph Stalin, a fact that should give us pause.

Be that as it may, my point is not to deny that each type of moral theory has its limited value. Rather my point is to illustrate the way our use of moral theories is usually embedded in a larger framework of concerns related to our view of the world and the perspectives we adopt when taking up ethical questions. Each type of moral theory responds to authentic moral concerns, but different types of concerns generate different types of moral theory. A piece of advice for engaging different thinkers is to try to understand their basic motivations and worries. A serious thinker always responds to serious concerns. That does not mean, of course, that every thinker is equally good and every moral theory is equally satisfactory. Some thinkers may do a better job than others of responding to authentic concerns, and some thinkers may be better than others at integrating the legitimate perspectives arising from the different sides of an issue. Any serious thinker, however, will give you something to think about, and learning to think is an important part of the discipline of ethics.

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## HIGH-LEVEL ETHICS IN SPORT Climbing Mount Everest

Jim Newberry

The opportunities for ethical and unethical behavior in sport abound, and are discussed and debated in homes, workplaces, and coffee shops all over America [2, 13]. It is now common to find *sport ethics* listed as a major topic area in contemporary applied ethics textbooks, alongside medical ethics, political ethics, and business ethics. The results of sporting events and challenges involving athletic skill are apparent, and the behavior of athletes and coaches is subject to public inspection to an extent found only in politics and Hollywood [1, 14]. Perhaps this is a result of the extraordinary nature of the events, or maybe a reflection of a preoccupation by the public with heroes and heroines—larger than life people—whom we hold to ethical standards that they seldom are capable of fulfilling.

There is probably no better example of a flawed ability for making ethical decisions in sport than arguably the world's greatest golfer, Tiger Woods. It is doubtful that any athlete has reached the level of success and public adulation as Tiger did before falling so steeply into such a personal, financial, and competitive abyss. Would an understanding of ethics and ethical decision-making have made a difference in Tiger's case?

Some of the more familiar ethical questions in sport deal with competition, fair play, violence, gender and racial equality, chemical and genetic manipulation, exploitation of student athletes, excessive youth sport participation, reasonableness of salaries, and the public funding of sport complexes. For this chapter, however, I want to depart from some of the more traditional topics in sport ethics and, instead, deal with an ethical dilemma that occurs, not in the stadium, ball field, or arena, but in the cold, high-altitude environment of a mountainside, far away from television coverage and the witness of fans. The ethical decisions necessary in this quest involve great amounts of time and money and include life-and-death consequences. This sporting event is one of the most physically and psychologically challenging, but cherished, goals on earth—the climbing of Mount Everest.

One must imagine oneself *on the mountain* to fully appreciate the tremendous difficulty involved in determining right or wrong actions with such dire consequences—the essence of the study of ethics. Decisions made under such conditions have a degree of suddenness, urgency and irrevocability not often encountered in life. Many experienced climbers are aware of such possibilities, but still find themselves unprepared to make such critical decisions.

The ethical implications of human decision-making while attempting an assault on Everest include many different fields: athletics, physiology, psychology,

sociology, geography, politics, business, medicine, and theology. Expeditions have become money-making ventures designed to test the limits of physical exertion and skill. The physiological demands involve clear medical risks, including death, and the psychological motivation for all who attempt to conquer the mountain has long been debated. The manner in which humans interact with one another in this most desperate struggle, in such a culturally different place, reveals the best and worst of human behavior.

It is *not* my intention in this chapter to provide solutions to the ethical questions from a single point of view, but rather to provide a brief theoretical framework from which a student might examine right and wrong courses of action under specific circumstances. Although a brief introduction to the most common normative ethical theories is necessary, a more thorough treatment of ethics is presented in this publication and throughout the curriculum at TLU.

### Background: Mount Everest

At a height of 29,035 feet (8850 meters), Mount Everest is the tallest mountain in the world. It is still growing at a rate of about 1½ inches per year [4, 6]. It is located on the border in Asia between Nepal and Tibet. The Nepalese call the mountain *Sagarmatha* (Goddess of the Sky), and the Tibetans call it *Chomolungma* (Mother Goddess of the World). The Nepalese Sherpas that live on the mountain provide much of the expertise and manpower for the expeditions. Because they live “at altitude” (the technical phrase used to climbers to describe this high location), the Sherpas are expert porters and courageous guides on most of the expeditions climbing the mountain. Most climbers attempt to ascend Everest in late April or May, when there is a better chance for mild weather. During summer, monsoon rains and storms pummel Everest, making climbing treacherous. Winter brings extremely low temperatures and violent, hurricane force winds. You may follow the progress of expeditions during the May climbing season online by googling *climbing Mount Everest*. The oxygen level at the top of the mountain is one-third the level at the bottom [5, 6, 12]. If you want to duplicate the experience of physical exertion in air this thin, run on a treadmill while breathing only through a straw! Humans begin to physically deteriorate in the thin air of this cold, high-altitude environment.

Some important events on the mountain [12]:

- 1852 – Mount Everest established as highest point on earth
- 1921 – Tibet opens borders to Everest; British expeditions begin
- 1924 – George Mallory and Andrew Irvine perish attempting to summit
- 1949 – Nepal opens border to climbers; southern route to summit discovered
- 1953 – Edmund Hillary and Sherpa Tensing Norgay are first to summit  
(neither climber would admit who was actually first)
- 1963 – James Whittaker is first American to summit
- 1975 – Junko Tabei is first woman to summit
- 1999 - Research expedition finds Mallory’s body at 27,000 feet

Perhaps the following passage might help to explain the magnitude of climbing Everest. It is a passage from an article written about the 1924 climbing death of

George Mallory—the first known death (along with fellow climber Andrew Irvine) on Mount Everest [4, 5]. Mallory had attempted to climb the mountain twice before. Many think he actually reached the summit on this third attempt, but no evidence has ever been found indicating that he, in fact, reached the top [7].

Everest was the embodiment of the physical forces of the world. Against it he had to pit the spirit of man. He could see the joy in the faces of his comrades if he succeeded. He could imagine the thrill his success would cause among all fellow-mountaineers; the credit it would bring to England; the interest all over the world; the name it would bring him; the enduring satisfaction to himself that he had made his life worthwhile. . . . Perhaps he never exactly formulated it, yet in his mind must have been present the idea of “all or nothing.” Of the two alternatives, to turn back a third time, or to die, the latter was for Mallory probably the easier. The agony of the first would be more than he as a man, as a mountaineer, and as an artist, could endure.

—Sir Francis Younghusband  
*The Epic of Mount Everest*, 1926

### Climbing Mount Everest

The climbing of Everest has been a dream of many since 1921, when Tibet finally opened its borders to outside climbers. In 1949, Nepal began allowing limited numbers of expeditions on the mountain, and has been the major launching-point of most expeditions taking the “southern-route” to the top [4, 7]. Everest is often considered by explorers to be the “third pole” on earth—the other two poles being the North Pole and the South Pole. Many have called Everest the “roof” of the world. It should be noted that when climbers say their goal is to *climb* a mountain, they certainly mean to *summit* the mountain by reaching the top. It is considered a major disappointment to spend the resources and tolerate the danger of an attempt to climb Everest, only to fail to reach the summit. This extreme gamble, and the circumstances surrounding climbing the tallest mountain on earth, has led to the tragedies and ethical debates presented in this chapter.

Only one in four climbers succeed in summiting Everest, some with unreasonably large amounts of help from the Sherpas. Even though technology and knowledge of Everest have made the ascent somewhat safer, of the roughly 2,200 individuals who have attempted to climb Everest, over 200 climbers have perished [4]. The tragic 1996 expedition resulted in the deaths of six climbers, including guides Rob Hall and Scott Fischer—two of the best climbers in the world. This tragedy has been well chronicled in the bestselling book *Into Thin Air*, written by author and expedition member Jon Krakauer [7]. In 2006, eleven people died on the mountain in perhaps the deadliest single climbing season. It is estimated that over 150 bodies remain on Everest [4, 5]. Although some of those who have perished have been relocated, it is simply too dangerous and too difficult to bring bodies back down the mountain from above 2600 feet. Helicopters are only of limited help at altitudes above base camp due to the thin air and the extremely windy conditions on the mountain.

After acclimating to the altitude by spending weeks ascending and descending between the five camps, the final climb for the summit, known as the *assault* on the summit, normally occurs from the highest camp at 26,000 feet. It must be noted that from this point on, climbers are in the *death zone* and slowly deteriorate physically because it is not possible for humans to acclimate to the thin air at altitudes this high [4, 5, 6]. Climbers might suffer from a number of life-threatening physical ailments including high altitude cerebral edema (HACE) and high altitude pulmonary edema (HAPE). If either of these conditions occurs, the only hope of saving an individual is to descend to a much lower altitude as rapidly as possible. There are several drugs available that might save a life at this altitude, but the individual must still be lowered to base camp or below by other climbers in order to survive.

In addition to these life-threatening conditions, most climbers suffer from a combination of headaches, coughing, lack of sleep, frostbite, and accidental injuries to bones and muscles. In the thin air high on Everest mental functioning is also impaired, resulting in an inability to think clearly. For these reasons, almost all climbers use supplemental oxygen when at altitude on Everest [12]. The possibility of quick death from avalanches, falling ice, and dropping into a hidden crevasse provide additional risks for the climber. After overcoming these dangerous risks, one can understand why some climbers are motivated to push the last several hundred feet toward the summit, even though they might not be able to descend without losing their lives.

### The Financial Costs of Climbing Everest

The average cost to climb Everest is between \$60,000 and \$70,000. This includes hiring guides and porters, buying bottled oxygen, food, equipment, and acquiring government permits. Airfare, personal clothing, and equipment may run another \$5,000 to \$10,000 [7]. There are no guarantees that a person will summit or even reach a certain base camp, and there are no refunds for failed summit attempts. Clearly, this is *not* an endeavor for those fearful of physical *and* financial risks.

### The *Business* of Climbing Everest

Climbers who choose to complete the assault on the summit leave camp IV in the dark at midnight and attempt to be on the summit by noon—understanding that descending from the summit is as dangerous as the ascent. Many lives have been lost because expedition guides were tempted to help clients reach their goal of summiting the mountain even though arriving well past the noon descending time. Many expeditions attract paying climbers due to their success rate in *summitting* their clients. The ethical implications of choosing to summit late for business reasons is a hotly debated issue among climbers and will be the basis for one of the ethical questions below.

Another disturbing trend is the encouragement of inexperienced, physically marginal climbers with money who are primarily seeking *bragging rights* about climbing Everest. These unprepared climbers are often unreasonably *transported* to

the top of the mountain by guides and Sherpas. These climbers not only risk their own lives but also risk the lives and aspirations of other climbers when they bottleneck the trail or require emergency transport down the mountain.

### Personal Triumph vs. Human Tragedy

For climbers reaching the last leg of the journey, many things must still go right in order to actually summit. Successful climbs depend upon good health, dogged determination, acceptable weather, a route that is unblocked by other climbers, and fellow expedition members who do not require emergency aid by stronger climbers. Giving aid to a dying climber almost always makes a summit attempt impossible because of the time and energy required to descend with the stricken climber. Although this dilemma is not new to climbing, many have questioned whether Everest is a place where personal glory has become more important than saving the life of a dying climber [1, 14]. Several times in the past ten years climbers attempting to summit have left other climbers in distress rather than risk their own summit attempt. In 2006, David Sharp of England died when over forty climbers failed to render aid during their push for the summit. Although some of the details of this tragedy are debatable, the ethical implications are still disturbing.

## Ethical Considerations

### A Glance at Normative Ethical Theories

Ethics is a guide to how we should live and act [8, 11]. As we experience more of life, the decisions that must be made and the actions that must be taken become more complex and often involve the lives of others. Good leaders understand the attendant emotional risks in this and are able to accept the responsibility. Most difficult ethical decisions involve a consideration of the needs and desires of others, against our own.

The ethical questions comprising this chapter represent stark examples of decisions that must be made under difficult circumstances—with lives, aspirations, and livelihoods hanging in the balance. It is unsettling to realize that mountain climbers may not share one *climbing code of ethics* as in the past. Unfortunately, these differences of opinion about even the most basic ethical questions exist in other areas of life such as medicine, business, journalism, and politics. What ethics should a person follow when engaged in any serious pursuit where the individual and the group are interdependent? This is an important question because many of life's most important endeavors involve these interdependencies, even though they appear to be individual experiences.

One characteristic of an educated person is an eagerness to consider the thoughts and ideas of others. To benefit from the ideas of others requires open-mindedness, courtesy, and a rational, reasoned approach to argument. Although everyone will embrace an initial opinion about the ethical viability of a particular action, the injection of even one or two overlooked factors can turn a simple matter into a complex ethical challenge. *Normative ethical theories* provide a framework for

solving ethical dilemmas and are necessary for taking advantage of the thoughts and ideas of some of the world's greatest thinkers. Normative ethics is the primary tool used when discussing solutions to the kinds of *applied ethical* dilemmas presented in this chapter.

While *metaethics* involves mostly abstract questions of moral philosophy, *normative ethics* is more concerned with providing a moral framework that can be used to determine whether actions are good or bad, right or wrong [10, 11]. The types of questions dealt with in this chapter are *normative* because they seek to guide actions, while *objective* questions require facts and *subjective* ones opinions. It must be understood that the answers to normative questions seldom settle matters once and for all to the agreement of everyone. Still, there is great value in determining courses of action with largely favorable consequences. Should expedition guides climb without bottled oxygen when the results of their decisions might endanger the lives of all climbers? Facts and opinions would certainly be used to answer this question—it is a *fact* that thinking is impaired at altitude because of the thin air, and an *opinion* that guides make several decisions on climbs that could result in great harm to climbers. The purpose of the question, however, is to determine proper action and guide future behavior. It is an ethical question because it involves a conflict between the desire for personal triumph as a guide/climber against the safety of the climbers who depend upon the guide for their welfare.

In sport the results of decisions are often on display for everyone to see. Organized competition enjoys a level of clarity that most other aspects of life lack. This is part of the allure of competitive athletics and also applies to challenges pitting human capabilities against nature. I will only briefly present the basis underlying each of the primary ethical theories in this chapter in hopes that the student will begin to recognize patterns in reasoning. A separate chapter in this book will discuss the ethical theories in greater detail.

The field of ethics is complex and defies easy characterization. There are several methods of categorizing the key theories or traditions in normative ethics. The categories I will use in this chapter include: (1) *consequentialism*, (2) *deontology*, and (3) *virtue ethics*. Due to space limitations I will attempt to illustrate how the three theories might be used in answering the first set of ethical questions. These questions are probably the most hotly debated among climbers and sport ethicists. I have included other questions after the discussion in hopes that students will attempt to formulate their own ethical positions.

### Ethics Questions

1. Is it ethical to continue one's climb to the summit instead of abandoning the attempt completely and rendering aid to a dying climber?
2. What if the dying climber shouldn't have been along on the climb in the first place because he/she was not physically capable?
3. Does the fact that being on an expedition requiring great sacrifice and known risk make the ethical decision any different?

4. In an expedition of twelve climbers, with two guides, how would you determine what two climbers should abandon the climb and descend with the stricken climber?
5. What if the guides of the expedition are the only climbers physically able to descend with the stricken climber, thus jeopardizing the entire expedition?
6. If you decided beforehand about the expedition's duty to aid stricken climbers, what ethical rules would you set up?
7. Should you hold climbers responsible for decisions such as these when they are made under conditions known to affect thinking ability (i.e., fatigue, altitude, cold, incomplete information, etc.)?

One must imagine oneself *on the mountain* to fully appreciate the tremendous difficulty involved in determining right or wrong actions with such dire consequences. It is difficult for most people to believe that anyone would *not* render aid to someone who is dying under any circumstances. But this might occur more often than we like to admit. I recall a former TLU student who was severely injured in a spring-break car accident several years ago being trapped in her car while people drove through the wreckage without stopping to render aid. As I mentioned earlier, there have been several instances of climbers passing dying climbers on the trail toward the summit without rendering aid. Put yourself in the position of being a dying climber, an expedition guide, and a fellow-climber when formulating an ethical position for these questions.

### First Ethical Theory: Consequentialism

*Consequentialism* argues that the moral status of an act depends upon the *results* or *consequences* of the act [9, 11]. The decision to press on toward the summit and ensure the triumph of most expedition members rather than render aid to a stricken climber would be justified according to *consequentialism* if the triumph of most expedition members was deemed a good thing. According to this theory, the results or *consequences* of an action are what matter most. The actions themselves and the character of those acting (i.e., the agents) are irrelevant. An action's usefulness in bringing about the greatest benefit to the greatest number of climbers would represent *utilitarianism*, considered the most plausible type of consequentialism [8, 9].

In consequentialism the *ends* justify the *means* as far as actions are concerned [8, 9]. Reaching the summit with as many climbers as possible by any means possible leads to greater numbers of climbers achieving their expensive goals and the expedition company being in great demand by claiming a high success rate. To let one climber cost the rest of the climbers their triumph would not be acceptable by proponents of this theory, even if it costs the stricken climber their life. Sometimes, the unwritten rules of such a risky undertaking might state that a climber can't necessarily depend upon being saved if high on the mountain. It is more common, however, that the guides and climbers make this ethical decision according to each occurrence regardless of the assumption that stricken climbers will not simply be left to die. The closer to the top and the greater the ambition of the climbers, the less likely the rendering of aid.

Even if guided by such justification, several problems would arise because of weaknesses in the consequentialism theory. Foremost among the problems would be that a significant number of climbers *may* find it morally repulsive that the majority would *always* receive the most beneficial treatment, even though an individual climber's life was at risk. Would the happiness of the majority always trump the welfare of the individual? Sometimes the *ends* do *not* justify the *means*. Those disturbed by an individual having little say over his or her own welfare might refuse to climb with the expedition.

Another problem would involve the difficulty in determining what the greatest benefit might be. Being allowed to attempt the summit of Everest might *not* be of greatest benefit for the majority of climbers. For some, saving a human life might result in the longest, most spiritually satisfying benefit. It is also possible that low morale from leaving a dying climber might destroy the will to succeed once expedition members really thought about their decision not to render aid. A climber might begin wondering what would happen if they themselves developed HACE or HAPE symptoms and needed assistance. These questions illustrate a weakness of consequentialism—the difficulty of deciding what is truly beneficial for the majority of people [11].

One last problem with consequentialism: if the expedition truly acted according to consequentialism in all matters, many aspects of life on the expedition would have to change in order that the greatest number of climbers received the most benefits. For example, anyone who was disciplined enough to spare some of their bottled oxygen for the final assault on the summit would have to share with all other climbers before the final push. It is doubtful that many climbers would adhere to these types of actions again and again throughout the climb.

## Second Ethical Theory: Deontology

*Deontology* holds that certain types of *acts* are good or bad and that these *actions*, rather than their consequences, determine whether decisions are ethical [8]. Sometimes these acts might be considered *duties* and result from *rights*. With this theory, the *means* justify the *ends*. According to the deontologist, certain acts should always be performed under specific circumstances, and certain acts should *not* be performed under other circumstances [9, 11]. In both of these cases, the *consequences* of the action are *not* as important as the *action* itself.

Older mountaineers claim that the unwritten code among climbers is to *always* render aid to a dying climber, regardless of the circumstances and ambitions of other climbers. This view is in stark opposition to that found in consequentialism. Some mountaineers might consider it ethical only if one acts according to their duty or obligation to descend with a dying fellow climber, regardless of the odds of starting again for the summit. Please note that rendering aid according to deontology theory is the result of a duty or obligation and *not* necessarily because of courage, compassion, or selflessness—reasons found in *virtue ethics*. The welfare of the group would *not* trump the welfare of any individual when certain types of emergencies occur on the mountain.

Like consequentialism, deontology has certain weaknesses. Foremost among the weaknesses of deontology are those of impartially determining what obligations or duties are owed and in what situations. This is a major problem as anyone who has been involved in such debates will attest. Also, in the real world, situations will crop up that are difficult to categorize—making the determination of duties difficult. The number and complexity of decisions required for an expedition to get climbers to the mountain, all the way to the top, and back down again, are huge. They are probably too huge to expect that all rules, duties, and moral obligations have been determined for them. A good example of a real world, complex situation with no clear remedy from the sport of football involves players being subjected to harmful practices by assistant coaches as directed by the head coach. This situation would present an ethical dilemma for most assistant coaches. Is the assistant coach more obligated to the head coach who hired them, or to the players whose welfare depends upon them?

Another possible flaw with deontology is that of carrying out an act because of a sense of duty when the negative consequences far outweigh the ethical obligations. Descending with a dying climber when it will certainly also mean the death of the climber rendering aid is one such dilemma. It is also common to have to leave a dying climber or two on the mountain in order to save the rest of a group of climbers when their lives would surely depend upon reaching a base camp quickly. In this case, a guide's duty to stay and render aid to a dying climber would probably not justify the deaths of many other climbers. Still, deontology theory would not support this last action—creating a real ethical dilemma for some climbers.

### Third Ethical Theory: Virtue Ethics

*Virtue ethics*, which was advocated by Aristotle, focuses on the inherent *character* of a person rather than on specific actions or consequences. According to virtue ethics, the *agent* of an action matters more than the action or consequence [8, 9, 10, 11]. Virtue ethics depends upon the identification of an objective list of virtues. There is no need to define duties or determine consequences with virtue ethics. What matters is acting because of character.

Bringing a dying climber down the mountain out of a sense of compassion and selflessness instead of a sense of obligation or duty would be morally superior in virtue ethics. One of the most disturbing characteristics about modern mountain climbing, according to older mountaineers, is that virtues and character are less valued than external rewards and vices such as gratification and ego satisfaction.

Virtue ethics is not without its weaknesses. Identifying the virtues can be difficult, especially when cultural relativity is considered. It is important to remember that in virtue ethics, actions and consequences are irrelevant and sometimes virtues can be vices. A classic example of virtues as vices occurs when brave soldiers courageously fight for bad or immoral causes. As a climbing guide, putting an entire expedition in jeopardy of losing their lives by attempting to descend with one dying climber out of a sense of compassion is a climbing example of a virtue as a vice.

As all students of ethics soon discover, each of the normative ethical theories has both strengths and weaknesses. When a decision must be made on a course of action, a person interested in making an ethical decision has to weigh the various strengths and weaknesses of each theory.

### Additional Ethical Questions

1. Is it ethical to allow climbers on the mountain who have paid the expedition fee but who are doubtful of physically completing the trip without extraordinary help from the Sherpas? What about climbers with some handicap? How would you set up ethical rules deciding who is capable of climbing Everest and who should be denied the opportunity?
2. Is it ethical for a guide to continue the attempt to summit with paying clients past the critical summit time? Would your evaluation change if only the last 300 feet remain?
3. Is it ethical for a guide to attempt to summit Everest without bottled oxygen (a mark of distinction in the climbing coterie) while making decisions affecting clients who are climbing the mountain?
4. Is it ethical for a mother or father to expose themselves to risk and attempt to climb Everest while they have kids at home? A husband or wife?
5. Is it ethical to allow all expeditions wishing to climb Everest on the mountain if the “footprint” harms the fragile landscape or the culture of the Nepalese Sherpa people?

I have been teaching a section on the physiology of high altitude climbing for twenty years now as part of exercise physiology classes, often aided by colleagues who were climbers. It has also been my great pleasure to use the book, *Into Thin Air*, written by author and expedition member Jon Krakauer in my part of the honors reading program at TLU.

To my surprise, two of my former students have made separate attempts to climb Everest. Neither made the summit. Both have my highest admiration and respect for the attempt. One of the climbers was the meekest, most unathletic student in my exercise physiology class. One cold, clear day in late May as he approached the summit of Everest, he got bottled up by struggling climbers high on the mountain at the Hillary Step. Tremendous wisdom and extreme fatigue won the day, and he decided to begin descending rather than risk his life continuing the assault at such a late hour. I guess one never really knows what capabilities reside inside a person.

While the teacher in me always encourages students to think big and follow their dreams, I would hate to think that I also encouraged someone else's demise! But I also know that once our students graduate, they will make their own decisions and live with their own consequences. If the truth is known, there will be difficult decisions in everyone's life, even though these decisions might not be as overtly dramatic as rescuing a stranded climber on Mount Everest. I always hope that students will use what they learn about ethics and decision-making to their great benefit when faced with such challenges.

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## WHAT WOULD YOU DO? An Exercise in Making Ethical Business Decisions

Melanie Thompson

You arrive early to your 9:00 am class. In fact, no one else is present when you walk in the door and see a flash drive on the floor beneath your desk. What do you do? You have wanted a flash drive so you could work on your assignments both at home and on campus. Although flash drives are relatively inexpensive, money has been scarce, and you have not been able to purchase one. Do you keep it? Who would even know?

Rethink the situation assuming that you are not alone. Your professor is in the classroom and watches you pick up the flash drive. Does that change your decision? Why or why not?

Rethink the situation again assuming that you recognize the flash drive as belonging to a classmate who has been working on his term paper and keeps his work on the flash drive. Without it, he will get a “0” on the paper. Does that change your decision? Why or why not?

### Decisions

Making ethical decisions requires more than knowing right from wrong. Facts can be ambiguous and incomplete. Potential consequences can be difficult to envision. In the opening scenario, you were alone in the room and thinking that no one would ever know. Assume you kept the flash drive, and it is now a week later. You are using the flash drive in the Alumni Student Center when a student sitting next to you recognizes it as his. He is a member of TLU’s Judicial Council responsible for evaluating ethical violations on campus. As part of his role, he is encouraged to report ethical violations, and he does. You now face an ethics charge which could harm your academic standing and possibly your acceptance into graduate school. This may seem an unlikely outcome, and it is. However, it is the unlikely outcome that catches most people. Can you think of anyone who expects to be caught when they do something unethical? In fact, one measure of a decision’s validity is to assume what you do will appear as a newspaper headline. If you would not want your family to read the headline, then you should not do it.

Decisions are also made under a myriad of economic, social, and business pressures. In the opening scenario, there were economic pressures on the decision. If you had not been struggling financially, the ethical decision would have been easier to make. Social pressures were added in the second and third versions with

the presence of your professor and the knowledge that the flash drive belonged to a friend. Such pressures will occur throughout all of our lives and can impact the decisions we make. Sometimes those pressures encourage ethical decisions; sometimes they do not.

Some people believe that each problem has one right answer and we should just know the right thing to do. However, instinct is not always correct and certainly doesn't support our ability to explain why one decision is better than another. Thoughtful reflection and sound reasoning can help us avoid terrible mistakes in judgment and influence positive courses of action. As a student at TLU, you will have the opportunity to develop your own reasoning abilities. Improving your ability to make good decisions supported by reasonable arguments and your development of an integrated ethical perspective are important aspects of your education.

Good decisions should be both ethical and effective. Certainly the quality of our individual choices impacts our own lives. When those choices are translated into the world of business, the complications and impacts magnify because they touch all of us. Regardless of your major, you will work somewhere. You might work for a non-profit organization or perhaps sell your paintings to the public. You will have colleagues, bosses, and possibly employees. Even if you work for yourself, you will have customers. All of these possibilities involve choices related to work, and those choices will be business decisions. You will buy a home, purchase a car, and make investments. Certainly you will be a member of a community. Your success in all of these roles depends, in part, on the effectiveness of business decisions, and some of those decisions will be yours to make.

## Fraud

Act dishonestly for your own advantage, and you may discover you have committed fraud. Fraud is generally defined as an intentional misrepresentation or omission of material fact for the purpose of inducing another person to act, and upon which the other person relies, which results in injury or damage.<sup>1</sup>

Unfortunately, our financial history is littered with frauds triggered by bad decisions. Fraud can start slowly with an intention merely to bypass a few rules or solve a temporary problem. Someone thinks "Just this one time," or "No one will know." Perhaps the individual isn't even aware that he or she has started sliding into disaster. Over time the *temporary* problem reoccurs, or maybe it isn't really temporary. Regardless, fraud occurs and ultimately will be discovered. Damages can be widespread from the shareholders to employees to creditors. For some the damages are monetary. Others may go to jail.

A real world example of fraud triggered by bad decisions is Lehman Brothers Holdings, Inc. (Lehman). Originally established in 1850, Lehman grew to become one of the world's largest financial services companies.<sup>2</sup> Regardless of its long

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<sup>1</sup> "Fraud Law and Legal Definitions," available from <http://definitions.uslegal.com/f/fraud/> (accessed June 12, 2010).

<sup>2</sup> "Lehman Brothers Holdings, Inc.," *The New York Times* (24 March 2010); available from [http://topics.nytimes.com/top/news/business/companies/lehman\\_brothers](http://topics.nytimes.com/top/news/business/companies/lehman_brothers)

history, Lehman's heavy investment in mortgages triggered increasing financial vulnerability culminating in a bankruptcy filing in September of 2008. A 2010 bankruptcy report blamed Lehman's failure partly on the deliberate use of accounting gimmicks designed to hide the extent of the firm's reliance on debt.<sup>3</sup>

Referred to as "Repo 105," the technique involved temporarily selling assets and reducing debt with the proceeds. The sales occurred immediately prior to the end of a quarter to remove risky assets from the financial statement, and debt totals appeared smaller. Lehman appeared financially stronger than it actually was. Immediately after the end of the quarter, Lehman repurchased the assets and the related debt reappeared. Initially the amount of the disguised debt was relatively small. Perhaps the executives at Lehman thought it was a temporary problem. Perhaps they thought no one would know. Whatever they thought, the problem wasn't temporary, and it grew. In fact, they ultimately hid debt of more than \$50 billion.<sup>4</sup>

When the U.S. financial crisis erupted, some financial firms were rescued by the U.S. taxpayers. Lehman, however, was not. Lehman's failure exacerbated the financial crisis here and around the globe. Would the results have been different if the firm had not tried to hide its problems? We cannot know. However, we do know that the decisions did result in the firm's bankruptcy, with many people paying the cost of the failure.

Were there people inside Lehman who were aware of the unethical actions? It seems reasonable to believe so, but no one stepped forward to report these actions to an outside agency. Reporting unethical or illegal activities to someone who can act to end or expose the activities is known as *whistleblowing*. What would have happened if a whistleblower had informed the Securities and Exchange Commission? Again, there is no way for us to know. However, whistleblowers have arisen in similar circumstances.

One of the most widely known whistleblowers was an Enron vice-president named Sherron Watkins. Although Watkins did not inform external parties, she did try to change corporate behavior by contacting the company president, Ken Lay. A portion of her now famous memo follows:

Dear Mr. Lay,

Has Enron become a risky place to work? For those of us who didn't get rich over the last few years, can we afford to stay?

Skilling's abrupt departure will raise suspicions of accounting improprieties and valuation issues. Enron has been very aggressive in its accounting.... The spotlight will be on us, the market just can't accept that Skilling is leaving his dream job... It sure looks to the layman on the street that we are hiding losses in a related company.....

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[\\_holdings\\_inc/index.html?inline=nyt-org](#); (accessed May 30, 2010).

<sup>3</sup> United States Bankruptcy Court Southern District of New York, *Report of Anton R. Alukas, Examiner*, Chapter 11 Case No. 08-13555 (JMP), Vol. 3 of 9 Section IIIA.4: Repo105, March 11, 2010, 732-764; available from <http://lehmanreport.jenner.com/VOLUME%203.pdf>; (accessed May 30, 2010).

<sup>4</sup> *Ibid.* 732-764.

I am incredibly nervous that we will implode in a wave of accounting scandals. My eight years of Enron work history will be worth nothing on my resume, the business world will consider the past successes as nothing but an elaborate accounting hoax. Skilling is resigning now for "personal reasons" but I would think he wasn't having fun, looked down the road and knew this stuff was unfixable and would rather abandon ship now than resign in shame in two years.

Is there a way our accounting guru's can unwind these deals now? I have thought and thought about a way to do this, but I keep bumping into one big problem—we booked the Condor and Raptor deals in 1999 and 2000, we enjoyed wonderfully high stock price, many executives sold stock, we then try and reverse or fix the deals in 2001, and it's a bit like robbing the bank in one year and trying to pay it back two years later. Nice try, but investors were hurt, they bought at \$70 and \$80 a share looking for \$120 a share and now they're at \$38 or worse. We are under too much scrutiny and there are probably one or two disgruntled "redeployed" employees who know enough about the "funny" accounting to get us in trouble.

What do we do? <sup>5</sup>

Unfortunately, Watkins' fears were justified. Enron did implode and joined the list of business failures in 2002. Jeff Skilling, the former CEO of Enron, was sentenced to 24 years in prison for 19 counts of fraud, conspiracy, and insider trading.<sup>6</sup> Ken Lay, to whom the email was written, died while awaiting sentencing after being convicted of felony charges.<sup>7</sup>

Enron was a large company, but frauds are not limited to large companies. They also occur in small businesses. Whether it is a bookkeeper who steals money or a physician who files false insurance claims, fraud happens. People are harmed. Decisions to act dishonestly triggered each of these harms.

## Dilemmas

Most business decisions do not relate to fraud or dishonesty. They occur daily and impact us whether we are employees, investors, or consumers. Some decisions are relatively simple as in deciding acceptable attire for the office or classroom. Other decisions are much more complex. An ethical dilemma occurs when we need to choose between alternatives that violate one or more of our values. When values conflict, decisions become difficult, and ethical decision-making becomes most valuable.

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<sup>5</sup> "Sherron Watkins email to Ken Lay," *Itmweb.com* (20 January 2002); available from <http://www.itmweb.com/f012002.htm> (accessed May 30, 2010).

<sup>6</sup> "Skilling gets 24 years." *CNNMoney.com* (24 October 2006); available from [http://money.cnn.com/2006/10/23/news/newsmakers/skilling\\_sentence/index.htm](http://money.cnn.com/2006/10/23/news/newsmakers/skilling_sentence/index.htm); (accessed May 30, 2010).

<sup>7</sup> "Enron Founder Ken Lay Dies," *CNNMoney.com* (5 July 2006); available from [http://money.cnn.com/2006/07/05/news/newsmakers/lay\\_death/](http://money.cnn.com/2006/07/05/news/newsmakers/lay_death/); (accessed May 30, 2010).

How do we improve our decisions? Thorough analysis helps. Try resolving the following dilemma:

You are the regional manager for a restaurant chain that sells wine. Most restaurants in your area employ servers who are below the drinking age and the law does not allow them to serve alcohol. In addition, your company has a policy against such servers taking orders for alcohol. When a customer asks about wine, the underage server is supposed to have the wine steward come to the table. You have a meeting next week with your supervisor to review your region's compliance with the company policies.

Ron is a manager of one of your Seguin restaurants, has been working for your company for twelve years and is a personal friend. Ron is a supporter of TLU and prefers to hire as many TLU students as he can. Unfortunately, Ron has recently been fined for allowing an underage TLU student employee to taste a wine that customers were likely to ask about. You have called Ron into your office to discuss the incident. You threaten to fire him. Ron tells you that this behavior occurs in all of your restaurants. He also shares the fact that his wife is seriously ill and needs the health insurance from his job to pay for her treatment. What do you do?

How do you analyze the situation? Think about your responsibilities to your company and how they conflict with your sense of loyalty to your friend. Consider also your responsibilities under the law, as well as to the underage TLU students working in the restaurants, to other employees, and to yourself. Can you identify the key conflicts for you as regional manager?

Next, identify the people impacted by the situation. These are the stakeholders to your decision. You could include the company, Ron, the TLU student, other employees, yourself, and others. There are potential harms to each of these stakeholders. For example, think of the possible harm to the TLU student. If the manager offers wine to the student and the student declines, then the student's job might be at risk. If the student accepts, then there are legal risks. In either case, the student could be harmed. Now identify the possible harms to the other stakeholders.

Identify at least two alternative solutions. You could fire Ron, or you could do nothing. You could also give him a warning and reinforce the company policy with all your restaurants. Are there other choices? What are the possible consequences from each alternative? Consider all of your stakeholders, and include yourself in your analysis. Remember that you have an upcoming meeting with your supervisor, and you may have problems in your other restaurants. Consider long-term consequences in addition to short-term outcomes. For example, failure to enforce company policy in this instance could set a precedent that makes the policy unenforceable in the future. Finally, decide which alternative is best, and articulate the reasons for your decision.

Do your classmates agree with you? You may find conflicting opinions within your class. If so, then you have an opportunity to practice your skills at convincing others your decision is the best choice. Your thoughtful analysis should give you reasons for your position.

The analytical process works with other dilemmas as well. Try this one:

It is your second semester at TLU. You and your roommate Taylor have been friends since the 8<sup>th</sup> grade, and initially you were happy to share the same room. Over recent months, however, Taylor has started socializing with different friends and frequently stays out late at night. You are both in Math 133 and you have an assignment due in your 10:30 class. You have done your assignment, but Taylor stayed out late again. It is now 9:00 am, and Taylor asks to copy your homework, blaming car trouble as the reason the homework wasn't done. What do you do?

Follow the same process as before:

1. Determine the ethical issues.
2. Identify the stakeholders and how they are harmed.
3. Select at least two alternatives, and develop the possible outcomes from each. (Hint: Read the academic honesty policy in the *TLU Student Handbook*.)
4. What is the best decision and why?

Ethical decision-making requires the ability to recognize issues, evaluate alternatives, and make sound decisions among competing choices. Convincing others of the validity of your solution relies on the use of clear, well-reasoned arguments. These are skills, and skills can be learned.

## Learning

As a student at TLU, you will have the opportunity to develop your skills. All students take at least one ethics-focused course. Most students choose a course within their own discipline. Others take multiple courses.

While there are multiple ways to learn ethical decision-making, typical methodologies include the study of ethical theory, recognition of issues in specific areas, discussion and analysis of dilemmas and actual cases. Practice in thoughtful and conscientious reasoning can occur through written analysis, and various frameworks can be used as tools to improve analyses.

However, most business decisions do not occur in written form. Most are verbally transmitted and explained. People will disagree. Therefore, practice in oral argument is important. As part of our Business Ethics class, students participate in a formal ethics debate adapted from the Ethics Match developed by the Texas Independent College Foundation.

Teams of three to four students compete for points over two to three days. Judges award points to each team based on how well the team answers the following questions about a dilemma:

- ❖ *What is the ethical issue?*
- ❖ *Where is the harm, if any? Is the harm justifiable?*
- ❖ *What is the best solution for such a conflict and why?*

Team A has five minutes to answer the questions. Team B then has three minutes to agree with, disagree with, or modify the response of Team A. Judges

then ask questions of both teams. Every team has the opportunity to be both Team A and Team B. Teams earn bonus points based on performance.

Most students are nervous about the idea of debating. However, by the time the debates occur late in the semester, the students have had plenty of time to develop their skills. Eliesha Hernandez-Davis kept a journal of the class. Excerpts of her journal follow:

February 15

You might be thinking what is ethics really? And how in the world can they base a whole class on it? Isn't there just right and wrong? Well, that's what I thought. I thought that especially in business there is just a right and wrong answer, no in-between. However, you soon find out that in some cases there can also be a middle ground. I am a very blunt person. I see things as black and white, right or wrong, no middle ground.

In ethics you learn that sometimes people do things in order to help others around them. Here's an example. A father is told that there is a shot that can save his sick son, but because the father doesn't have the money or proper job to pay for the shot, the doctor cannot issue it to the father. Now if the father went and stole the medicine and, in the process, hurt a security guard because he got in the way, should the father go to jail?

You'll learn that there are many different ethical theories and they all support different actions and principles. Throughout the class, you will support some theories and not others. So once you adapt to a theory, answer the question above with that theory.

April 5

Today we prepared for our debates for next week. We are also preparing on Wednesday as well. [Professor Thompson] brought in previous students to help prepare us. We learned that we will be given the cases prior to the debate and we will be able to split up the cases among our groups so we can cover all the cases properly. There are 10 cases so I received three of them when we broke them up. It's tricky because we are taught to take different angles than other groups might. You have a good week to look them over and explore all solutions. I recommend doing so early on so you aren't rushing on debate day.

April 12

Today is the first round of debates. We have today, Wednesday and the final round is Friday. Only 2 teams make it to the final round and it is in front of numerous people. It's a bit nerve racking with just your class, so I can't even think of debating and arguing in front of hundreds of students and staff. I suggest you explore all options to the cases because the judges expect you to tell the options, solutions and harms and the weaknesses to all of those. It's a pretty tough task because you're put on the spot, but once you begin it gets easier.

April 16

Today we attended the final debate where the final 2 teams from our class debated. I can't even imagine how they felt because the room that the debate was held in was super packed. It was standing room only. The team that won received 15 extra points on their final exam and the second place team got 10 points. The top teams were very good at debating their issues, but I think the winning team did the best.

Invariably, the debates are the students' favorite part of the course. Students demonstrate their ability to reason through dilemmas and communicate that reasoning to independent judges.

Aubry Cover's thoughts on the debates follow:

After the debates were done, I came to realize that I can take what was learned in class to real life situations. I learned the ways to look at the situation and analyze it and come up with a solution that is the best. Overall, the debates were a great experience and gave me the ability to thoroughly analyze a situation. I also learned that there might not be a black and white answer to every question, but it is always good to have a healthy debate with people because I feel that you learn a lot about people and about your surroundings. Not everyone has the same story as you do, and when you listen, it can change how you view the world or different situations.

The debates are an example of the opportunity you have to develop skills that translate from the classroom to your own life. These opportunities occur not only in your ethics focused classes, but also in other classes and campus activities.

### Reflections

Some people believe the essence of ethical business decisions is determined by following the law. However, the law is frequently ambiguous and legality typically is determined by a court after an incident has occurred. Consider the Americans with Disabilities Act (ADA) which requires employers to make reasonable accommodations for employees with disabilities. What constitutes a reasonable accommodation? Even the term "disability" remains mostly undefined. ADA also applies to universities including ramp access to buildings. You can see the problem on this campus by comparing ramp entrances among the different buildings. Newer buildings have better access than older ones. Remodeling existing buildings to improve access is expensive, and deciding how and when to modify existing construction can be difficult. The law provides little guidance. Clearly, merely following the law is insufficient.

Additionally, just because something is legal does not mean that it is ethical. In other words, just because we *can* do something does not mean we *should* do it. For example, abortion is legal, but many people strongly believe it is unethical. Other conflicts between law and ethics occur throughout the business world. Ethical decision-making asks what *should* we do. It considers the multiple stakeholders and seeks to find the best solution.

Whether we are the student finding the lost flash drive or the manager of a restaurant grappling with an employee issue, we will make decisions, every day, in the course of living our lives. However, we can choose to develop our skills to make our decisions both well-reasoned and ethical. You have that development opportunity here at TLU should you decide to accept it. The decision, of course, is yours.



TOXIC KNOWLEDGE  
How Much Do *You* Want to Know?

Bob Jonas

Eventually, we'll get a chance to answer the title question and consider some ethical dilemmas that arise in modern medicine. But first, a little history to explain how we got to the place where we now find ourselves. Don't worry; this is *not* toxic knowledge.

The Early Science of Genetics

Ever since Mendel worked out the laws of genetics in the 1860s, humankind has known that something in our cells influenced many traits of humans and other organisms. In the early 1900s at the “fly lab” of Columbia University, Thomas Hunt Morgan and his colleagues proved that chromosomes carried this *something*. They found that they could identify genes—as we now call them—that were inherited more often in males than females and were carried on the X chromosome in fruit flies. This was easily observed since the X looks so different from the Y chromosome, and, as in humans, fruit fly males have an X and a Y, while females have an X and X.

So genes influence traits or characteristics of all organisms. And genes are found on chromosomes. Chromosomes can be isolated and chemically characterized. If you analyzed any chromosome, you would find it was made of two chemicals: proteins and deoxyribonucleic acid (DNA). So the question in 1920 was: what is a gene, chemically? If you think of what a gene has to do, the gene must have certain characteristics. First, it has to be able to be *replicated* faithfully, but not totally 100% error-free. Some changes have to occur in order for evolution to have raw material to work on. And, second, it has to *carry information* to determine what characteristics an organism displays. What chemical has those properties?

Most scientists in 1920 would have told you that proteins were likely to be the genetic material. Proteins were known to be complex, made of twenty different types of building blocks. Although it wasn't clear how they could pass information from generation to generation, biologists were sure that future knowledge would solve that mystery.

The other candidate, DNA, was thought to be too simple. It was known to have only four different components, and the components were thought to be put together in uninteresting ways, perhaps just one of each in a simple bonding pattern. Most biologists thought DNA was just a structural component of the chromosome. Then, in 1929, an experiment was published that changed some scientists' minds.

A biologist named Griffiths was doing experiments on a bacterium that causes pneumonia and some other diseases in humans. Just ten years before, influenza had killed over 50,000,000 people, and this bacterium (*Streptococcus pneumoniae*) commonly causes a lung infection following influenza. So Griffiths was trying to develop a vaccine strain that might prevent infection. He wasn't successful, and we had to wait about fifty years for a pneumococcal vaccine. But his experiment and the follow up experiments done by Avery, McLeod and McCarty did end up showing those who were paying attention that DNA was important after all.

Griffiths had two strains of his bacteria: a harmless strain, called *rough* for its colony characteristics, and a lethal strain, called *smooth*. He injected the smooth strain into mice, and they died. He injected the rough strain into mice, and they were fine. Next, he heated the smooth strain to kill the cells, injected the mice with the killed bacteria, and the mice were fine. So far, just as expected. But he did a control, mixing the dead smooth bacteria with live rough bacteria, and the mice died! Not only that, but from the dead mice he retrieved live smooth bacteria! He interpreted this to mean that genetic information was passed from the dead cells to the live cells, giving them new characteristics. The rough cells were *transformed* into smooth cells.

### Further Developments in Genetic Science

Several years later, the follow-up experiments indicated that DNA was the transforming chemical. Most biologists stuck to the belief that proteins were the stuff of genes because it wasn't clear that bacteria were the same as other organisms; we now know they are. But some scientists started to become very interested in DNA. The challenge was to figure out how a chemical could act as the information-carrying gene. It was obvious that whoever cleared up this mystery would get great acclaim, and probably a Nobel Prize.

In England, at London College, Maurice Wilkins was studying DNA. He hired a young assistant, Rosalind Franklin, to crystallize DNA in order to determine its structure. At Cal Tech, Linus Pauling also became very interested in determining the structure of DNA. He had already made great advances in protein structures and wrote a classic textbook, *The Nature of the Chemical Bond*. At Cambridge in England, they were busily determining structures of proteins like myoglobin and its cousin hemoglobin. A physicist named Francis Crick was trying to earn his PhD in structural biology, working on such things. The Cambridge lab brought in a young PhD from Harvard, Jim Watson, as a post-doctoral fellow. Watson convinced Crick to put the protein work on the back burner and work on DNA instead.

So these were the major competitors in the race for the genetic key. A few years before, the Austrian-born American, Erwin Chargaff, had further characterized the chemicals in DNA and had stumbled upon an odd fact which became known as Chargaff's Rule. The four components of DNA previously alluded to can be abbreviated as A, C, T, and G. These stand for longer chemical names, of course. A and G are one type of chemical called *purines*, while T and C are a different class called *pyrimidines*. Chargaff found that in any species the amount of C always was equivalent to the amount of G, and likewise A and T were found in equal amounts.

For example, a species might have DNA composed of 20% A, 20% T, 30% G, and 30% C.

So the story goes that Rosalind Franklin worked very hard to crystallize DNA and get data from shooting X-rays through the crystals. She was meticulously analyzing her data to see what kind of structure was supported by the X-ray pattern. Her supervisor Dr. Wilkins was very much an idealistic scientist who believed in sharing data for the advancement of science. He shared her data with Watson and Crick, who leapt into speculative model building. After a couple of failures, they hit upon a structure that fit Franklin's and Chargaff's data. In 1952, they published their work in *Nature* next to a paper by Wilkins and Franklin. Watson, Crick, and Wilkins got the Nobel Prize in 1962. Rosalind Franklin died of cancer before she could be recognized with that honor.

### The Double Helix

Their structure was the now-famous *double helix*. DNA is two strands entwined around each other. If there is an A on one strand, there is always a T on the other and likewise G always pairs with C. Thus Chargaff's Rule is followed, and it becomes obvious how the molecule could be replicated by separating the strands and using each as a template on which to make a new strand, following A-T and C-G pairing. Similar to the way we string letters together to make words and sentences, the four bases are arranged in a sequence that makes sense to the cell's machinery and causes a protein to be made. Once the structure was published, everyone was convinced that DNA was the stuff of genes.

There are three billion bases—as we refer to A, C, T, and G—in our 23 chromosomes. We each have 46 chromosomes because they come in pairs, but 23 is one complete haploid set or a *genome*. These three billion bases represent about 25,000 genes, about the same number of genes as in mice or chimps. These protein-encoding genes give us our genetically determined traits.<sup>1</sup> Some of these genes can cause diseases or characteristics that can be passed on from generation to generation. A gene may lead to specific genetic characteristics like a widow's peak or attached earlobes that are passed on from generation to generation. Another may cause a particular disease like muscular dystrophy or hemophilia. Before 1990, Dr. Watson and others pushed governments around the world to invest in determining the order of bases in our genome. They promised it would take only fifteen years. It actually took about twelve years due to advancing technology, and cost about \$3 billion.

You may have had the chance to read David Baer's essay on ethics, and, if so, the following case will let you apply those concepts as we explore some aspects of current biology. Our growing knowledge concerning genetics has given us the power to foretell the future, at least in some situations. Is this hubris? That is, have we overstepped our place, seizing powers that belong to God alone? And, whether or not we have, will this lead to good or bad results?

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<sup>1</sup> You can find these genes on this website: <http://www.ncbi.nlm.nih.gov/omim>.

## Ethical Issues in Genetic Science

The knowledge of our genome has led to more genetic tests. In the 1960s a simple blood test was developed for PKU, a genetic disease causing sensitivity to a certain chemical. Those who have the disease and eat the chemical (phenylalanine) develop mental retardation. The treatment is simple: avoid the chemical in your diet. In fact, you've probably seen warning labels on diet drinks or sweeteners containing aspartame which is a chemical that includes phenylalanine as part of its make-up. So we've all been through a genetic test for a condition that is severe, yet which can be prevented easily. Not much controversy about that.

Not so benign was the screening for sickle-cell trait between 1970 and 1972, which was mandatory in twelve states. Only African-Americans were screened for this carrier condition, and carriers were stigmatized even though they are mainly asymptomatic. Without a treatment available, the utility of the test was questionable. For *recessive* genes like sickle cell, someone could carry a disease gene and not show any outward signs.

All organisms carry many such genes hidden away. That's why children born to close relatives tend to have more genetic problems. Recessive genes that are rare in the general population are much more likely to be shared by close relatives. With the new technology, it is possible to screen people for these hidden genes. Also, there are some traits that are *dominant*, but don't show up until later in life. One example is Huntington disease:

Huntington disease represents a classic ethical dilemma created by the human genome project, i.e., that of the widened gap between what we know how to diagnose and what we know how to do anything about. Wexler (1992) referred to the dilemma as the Tiresias complex. The blind seer Tiresias confronted Oedipus with the dilemma: 'It is but sorrow to be wise when wisdom profits not' (from *Oedipus the King* by Sophocles). Wexler (1992) stated the questions as follows: 'Do you want to know how and when you are going to die, especially if you have no power to change the outcome? Should such knowledge be made freely available? How does a person choose to learn this momentous information? How does one cope with the answer?'<sup>2</sup>

There's the rub: the patient could get a diagnosis but no treatment is available. Is the information useful? Or is being wise with no recourse to use the wisdom gained a condition to be avoided. In short, is such an ominous awareness *toxic* knowledge?

### A Case Study on Toxic Knowledge

Imagine that we have a couple; we'll call them Mr. & Ms. X. They are planning to have a child. The mother knows that Huntington disease runs in her family since her father died of it. Given that one of her parents died of Huntington disease, she has a 50% chance of having inherited the gene. She may or may not want to know her

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<sup>2</sup> Online at *Mendelian Inheritance in Man* website: <http://www.ncbi.nih.gov/omim/143100>.

status, given the information you've just read. After much thought, she decides that she doesn't want to pass on the gene to her children. Mr. and Ms. X discuss their options with their doctor or genetic counselor:

Doctor: *It is possible to screen embryonic or fetal tissues for the presence of this gene. With the results of this test in hand, you'll have a choice: to abort the fetus or allow the fetus to be born with Huntington disease. Of course, you also could decide not to have your own biological children if you know you are a carrier and opt for adoption of a child. In the case of Tay-Sachs disease, there was a successful matchmaking program that prevented two carriers from getting married in the first place.*<sup>3</sup>

Mr. X: That would mean my wife would have to be tested, right?

Doctor: *Yes. Of course, if you conceive a child and the test turns out positive, your wife will already know that she's destined to die prematurely of Huntington disease. So, Ms. X, you may not be able to avoid this toxic knowledge if you pursue a Huntington-free child.*

Ms. X: That's a problem, but I'm also bothered by the abortion option.

Doctor: *Another, more expensive, option would be in vitro fertilization. We'd harvest eggs from you and sperm from Mr. X, combine them in a petri dish to form embryos, test those embryos, and not implant the embryos that carry the Huntington gene. Does this option sound better to you?*

Mr. and Ms. X go off to think about this information, leaving us to consider how *you* might decide the questions that arise:

1. Would you want to know if you had an unpreventable, fatal condition that in twenty or thirty years would cause neurodegeneration such that you'd have uncontrollable movements and eventually lose the ability to walk, talk, eat, and finally breathe?
2. Would you screen an embryo by amniocentesis or chorionic villus sampling—allowing even earlier detection—for genetic diseases that couldn't be treated?
3. Is it ethically more acceptable if we screen embryos *in vitro* before they are implanted, and only allow implantation of healthy embryos?

### Three Approaches to Bio-Ethics

As you consider your answers, you may have *gut reactions* to each dilemma. Those reactions may be valid, but go further. Try to justify your opinion by logical argument.

Here are three models of moral reasoning:

First, you might think of your decisions as guided by rules like the Ten Commandments or the Golden Rule. If so, you are following a model we call *deontological reasoning*. So, Ms. X may feel abortion is the taking of a life, and since she follows the rule that "thou shall not kill," she declines amniocentesis since that may lead to an abortion. She may also not accept pre-implantation screening, following

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<sup>3</sup> For more information on Tay-Sachs disease, see <http://ghr.nlm.nih.gov/condition=Taysachsdisese>.

similar reasoning. The rule she is using, however, requires further analysis of the prohibition against *killing*. Does it mean we can't kill anything? Or we can't kill mammals? Or does it only apply to humans? Does it apply in all situations? Furthermore, we might ask if an embryo is a person? You get the idea. One of the problems with deontological reasoning is that it leads to more and more rules to answer these questions. Another potential problem is that the rules have to come from somewhere—philosophers, God, a king, legislatures—and these sources may shape the rules to serve their own purposes. Therefore we shouldn't consider legal rules as having solved moral dilemmas. As Dr. Martin Luther King Jr. pointed out, there can be unjust laws.

Second, while a rule-based philosophy asks: *What is the right thing to do?* others may decide based on another question: *What will the results of my action be?* If you are a person who focuses on the results, you are a *consequentialist* who acts based on what we call *teleological reasoning*. If Ms. X decides to get amniocentesis, she may think that the consequences of bringing a child with Huntington Disease into the world are to be avoided even if this means having an abortion. Or, she may accept pre-implantation screening as leading to even better results. But, there are problems with this model also. It's often hard to measure the consequences of an action before it takes place. Huntington Disease is bad, but people get it after forty years of life. How do you weigh four quality decades of living over and against the later years of suffering? What is more, if you look only at consequences, you may be led to some bad actions. In other words, a good end may be used to justify bad means to that end.

There is a third model called *virtue ethics*. In this approach, you may ask yourself: *What would a virtuous or good person do in this situation?* This is a good old-fashioned philosophical question, something Socrates might ask. So Ms. X may decide that a good person wouldn't allow another human to suffer with Huntington Disease. Or, alternatively, she may decide that a good person would accept whatever child she births. You see that this model doesn't give much guidance in this case. It's more often applicable as people play roles in life: mother, doctor, priest/pastor, etc. Then, it becomes a little clearer that doctors, for instance, won't do certain things like cause harm to those in their care. Professional codes are often based on virtue ethics.

### Back to the Future of Biology

Someday researchers may develop further technologies allowing us to alter genes to eliminate genetic disorders like Huntington Disease. Scientists have been able to do this successfully with animals but have hesitated to apply the technology to humans. They have technical reasons for this, since the techniques used are rather haphazard so far; but there are also the moral reasons mentioned above. Such technologies are seen by some as *playing God*, and so they question if the results will be good or harmful. What do you think?

## Some Additional Sets of Questions Worth Asking

1. How do you define a genetic disease? Is having the wrong color eyes, or being short or tall, a genetic disease? If we start selecting for some traits, will that lead to selection for everything? Maybe things like risk taking, intelligence, or homosexuality have an inherited component. Would the culture suffer if some types of people were eliminated before they were born? What would be lost if we *corrected* genes for certain traits according to socially constructed criteria?
2. If parents are given the option of *repairing* genes, where will they stop? What if genes could be altered to produce stronger, more intelligent people? Should we do that if we could? Why or why not?
3. Today, you can have your genome screened for many genes and for ancestry, at the cost of a few hundred dollars.<sup>4</sup> Do you want to take advantage of that? What does it mean to have a greater likelihood of getting breast cancer someday?<sup>5</sup> At what point would you make the decision to have a preventative mastectomy, as some women have?

## Final Thoughts

Science is a quest for knowledge of the natural world. Having knowledge often leads to new technologies. Some technologies provide powerful tools to influence life on earth. How, and even whether, we use technology isn't something science can or should answer. Rather, these are societal questions that are decided by political entities, the marketplace, and hopefully the public, although we often opt for new directions without much open discussion. Think of the growth in fertility clinics with the resulting creation of *spare embryos*, for instance. We hope this essay will lead you to insights into the relationship between our knowledge and our ethics, and will help you to be an active participant in future societal conversations.

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<sup>4</sup> See <http://www.23andme.com/> or similar companies.

<sup>5</sup> See <http://www.bracnow.com/>



## IN THE ZONE

### Liberal Arts Education at its Best

Douglas R. Boyer

Dr. Mihaly Csikszentmihalyi, a Hungarian psychologist and professor of psychology at Claremont Graduate University, refers to the concept of being completely immersed in an activity as “flow.” He describes flow as: “Being completely involved in an activity for its own sake. The ego falls away. Time flies. Every action, movement, and thought follows inevitably from the previous one, like playing jazz. Your whole being is involved, and you're using your skills to the utmost.”<sup>1</sup>

Most musicians, athletes, teachers, painters, actors, and students have experienced this sense of “being in the zone,” a feeling of great absorption, engagement, fulfillment, and skill. It’s such a powerful and profound experience that we strive to live it again and again. The experience itself is so enjoyable that people will do it even at great cost, for the sheer sake of doing it.<sup>2</sup>

But in order to achieve a flow state, a balance must be struck between the challenge of the task and the skill of the performer. If the task is too easy or too difficult, flow cannot occur. Both skill level and challenge level must be matched and high; if skill and challenge are low and matched, then apathy results.<sup>3</sup>

Being a member of a music ensemble requires a high level of both skill and challenge. It involves much more than gathering to play notes on the page. We work together as a community to create music that has the capacity to communicate; and communication occurs when the performance is inspired. Now, keep in mind, inspired is not the same as perfect. In the process of making music we strive for perfection; but we never reach perfection—ever.

### TLU Choirs

We rehearse together to create a sound that is energized, vibrant, balanced, and in tune. We struggle to match vowels and pop our consonants for understandable diction. We practice dynamics, legato lines, and articulations. We do all of this as we, a community of singers, travel together on this journey of making music. But all of these things are simply the technical aspects of singing—the inspiration occurs

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<sup>1</sup> Cited in John Geirland, (1996). "Go With The Flow". *Wired* magazine, September, Issue 4.09.

<sup>2</sup> Mihaly Csikszentmihalyi, *Flow: The Psychology of Optimal Experience* (New York: Harper and Row, 1990) 4.

<sup>3</sup> Mihaly Csikszentmihalyi, *Finding Flow: The Psychology of Engagement with Everyday Life* (New York: Basic Books, 1997) 32.

when all the members in the ensemble have learned to work together as a community. Once we have reached this goal, then the communication may begin. Only then can the true beauty of music unfold.

And this is the miracle of choral singing for me. Inspired singing occurs when the ego of each individual drops away and every singer personally connects with the text of the piece being performed. When everyone in the ensemble achieves this moment at the same time, we're *in the zone* and the music created is inspired.

Our own life experiences provide the groundwork for connecting with the text of every piece of music. Take, for example, the text by Michael Dennis Browne of "Pilgrims' Hymn," set to music by Stephen Paulus:

Even with the darkness sealing us in,  
We breathe Your name,  
And through all the days that follow so fast,  
We trust in You; Endless Your grace, O endless Your grace,  
Beyond all mortal dream.

There is no single, simple interpretation of this text; on a personal level, it may be vastly different for each singer. The young singer who recently lost her father to cancer will express a profoundly different meaning to the text than a singer who has experienced the joy of a new love or the birth of a new family member. But what's important is that the singer connects the text with their own experiences, to sing the text with meaning and inspiration. When this is achieved, you can see in the face of each singer the intent of human emotion and experience they wish to express.

When, as a choir, our skill level has increased to meet the challenges of the music to be performed and we become completely involved, absorbed, and engaged in the process of making music, we have achieved flow. Every performer that has been given the opportunity to experience these exquisite moments of flow while singing can recall the powerful sensations involved. It's as though time stands still, we feel connected in a profound and indescribable way, and the breath traveling through our bodies to sing is not our own but from another source. There is a common unity and urgency of expressing the text and its meaning through music. We have relinquished our egos and learned to become a community—working together, depending upon one another and caring about one another.

### Empathy in the Zone

It's during these moments of *being in the zone* that the heart and mind are receptive to experiencing the world in a different way. In most cases, our daily lives are consumed with deadlines, appointments, classes, meetings, assignments, family obligations, practices, rehearsals, and a million other responsibilities. These commitments are largely driven by personal goals, societal expectations and ego. When creating music *in the zone*, our momentary life experience is liberated from the ego and transformed into a more universal understanding of the world. We suddenly see people and situations differently. We begin to learn that all people are struggling to understand this world in which we live. We have the opportunity to see that we all have obstacles to overcome and that we are all learning to find joy and a sense of

peace in this life. When we have developed the capacity to share and relate to the feelings and emotions of another human being, we are said to have empathy for that person.

The completion of a thirty-year study by the University of Michigan Institute for Social Research found that today's college students are not as empathetic as college students of the 1980s and '90s. The study found that college students today are less likely to agree with statements such as "I sometimes try to understand my friends better by imagining how things look from their perspective" and "I often have tender, concerned feelings for people less fortunate than me." Edward O'Brian, data analyst for this study, said, "College students today may be so busy worrying about themselves and their own issues that they don't have time to spend empathizing with others..."<sup>4</sup> The study goes on to discuss the role that social networking and technology play in this increasing lack of empathy.

In light of the findings of this study, if the role of liberal arts education is to provide students with opportunities to develop rational, intellectual, and ethical capabilities, then participating in activities and organizations that help develop a sense of empathy is essential. As we reflect on ethical frameworks in this book, we know that universal rules and norms shape our sense of duty. We also see how we must reflect upon the consequences of our actions and decisions in ethical living. However, we also must remember that the formation of our character to include virtues like empathy shapes the way we live every moment of our lives. As Bruce Birch and Larry Rasmussen argue, "*Character is the chief architect of our decisions and actions... [and] Community is the chief architect of character.*"<sup>5</sup> Ensemble participation provides a powerful avenue to develop our ethical character as well as the opportunity to discover empathy.

### A Fragile and Fleeting Gift

Outreach concerts give the choirs the opportunity to share their music with people from all walks of life. During spring tour, the choirs visit hospices, AIDS care facilities, elder care facilities, homeless shelters, Alzheimer's care facilities, and soup kitchens. It's not uncommon for some students to feel apprehensive about singing in these facilities; the unknown can always create anxiety. But in the process of making music, the anxiety and fear dissipate, allowing empathy and compassion to take root and grow.

One of the many developmental milestones for a baby is to roll himself or herself over, something that we take for granted in human development. Turning over from the tummy to the back may happen as early as two- to three-month old. While the TLU Choirs were singing in Houston a number of years ago, there seemed to be a commotion among the nurses. When we finished our presentation,

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<sup>4</sup> "Empathy: College students don't have as much as they used to." *University of Michigan News Service* (2010): n. pag. Web. 9 Aug 2010. (<http://ww.ns.umich.edu/htdocs/releases/story.php?id=7724>).

<sup>5</sup> Bruce Birch and Larry Rasmussen, *Bible and Ethics in Christian Life* (Minneapolis: Augsburg Books, 1988), 81. Emphasis theirs.

the head nurse told me that a miracle occurred while we were singing: a five-month old baby turned over for the first time.

Such an occurrence seems less like a miracle and more like the natural progression of life. But because the facility was a hospice and the nurses were present to help facilitate their patients in the natural progression of death, this tiny patient's finding the strength to turn over for the first time truly was a miracle. The young parents of the child witnessed the event. They told me again and again how the music seemed to come from angels to touch their own tiny angel. For a brief moment, the hospice was filled with the miracle of life rather than death, and that brought strength and hope into their lives.

For many of the students, this was their first time in a hospice. It challenged them on many levels. Being present to witness family members dealing with the inevitable loss of a loved one is a difficult journey to experience. The emotions are raw and painful. It brings into clear focus what is important in this thing we call life and it provides an opportunity to experience pure empathy for others. The students were shocked to hear that a baby was in a hospice; perhaps, in their minds, a hospice served only the older generation. But here they were given the opportunity to learn that life is a fragile and fleeting gift and that by the strength of their combined voices, they transformed the life of a family in grief.

We were blessed with another miracle during a recent outreach performance in an Alzheimer's Care Center. A man, unresponsive for many years, lifted his head and began to sing along with us. His memory of the piece of music we were singing fired the neurons of his brain into motion and his family, present that day, witnessed the miracle. His wife rushed to his side, put her arms around him and sang with him through the tears in her eyes. She expressed later how difficult the years have been, seeing her husband every day but not *seeing* him because of this disease. She thought that this was going to be just another day; little did she know that a group of students from Texas Lutheran University would create a miracle with their voices. It wasn't only the man who was transformed that morning; it was his family, the nurses, the residents, the singers, and their director.

The TLU Choirs perform for thousands of people every year during Christmas Vespers and choir tours. These concerts are a wonderfully gratifying experience. But performances for the unique and varied audiences in the outreach concerts provide a different experience; they provide the opportunity to witness the power of music as it connects people in profound ways. The lights are up. The faces of everyone present are visible. There is no hiding in the darkness of the theatre common in formal dress affairs. Any healing that takes place occurs in the light of day with nothing to hide or disguise the human emotion. A respected colleague and fellow faculty member pointed out to me that, many times, the same healing occurs in Vespers and on tour, but the wounds are better hidden by the darkness of the theatre and the formality of the events.

### Hard Work and Mysterious Gifts

Being part of a good choral ensemble is hard work. It requires commitment, discipline, dedication, thoughtfulness, creativity, consideration, intelligence,

openness to change, and a willingness to be challenged. People depend upon you to do your best work at all times; without that effort, the ensemble can never grow to its full potential. Each person is integral to either the success or failure of the ensemble. Developing these capacities through ensemble participation will shape their ethical interaction with others in whatever they do.

The choir, the *musical community*, is a laboratory for learning how to live, work, and sing together. If participating in a musical ensemble truly is the best of liberal arts education, as suggested by Steven Sametz, then the experiences and opportunities offered in that setting should provide participants with skills that will serve them in life well beyond their years in college.

In his keynote address to the choir alumni of Lehigh University in the spring of 2010, Dr. Steven Sametz, composer and Director of Choral Activities, Lehigh University, had the following to say regarding the experience of singing together as an ensemble:

The older and I'm not sure wiser I get, the more the mystery of this process amazes: singing engages us physically, intellectually, emotionally. Making music is to me the ultimate expression of the best in a liberal arts education: it is not reading about what somebody thought 1000 years ago: it is recreating, viscerally, bringing into the present what was present 1000 or 100 or 10 years ago. When we start to sing Bach or Tchaikovsky or a spiritual—we touch the minds of people from the past and we enter into their world, not vicariously, but in a way that directly touches the minds of Bach or Tchaikovsky or that lone slave on a plantation. Music is a language which enables us to transcend time, place, cultural differences. It is a passport to other eras, other cultures that we get to experience on an almost molecular level. And in that process we are transformed. We become larger people, smarter people, more understanding people. It is the best of liberal arts education.<sup>6</sup>

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<sup>6</sup> Used with permission of Dr. Steven Sametz.



## THE MYTH OF SUSTAINABILITY

### Why Recycling Is Only the Beginning

Lucas Land

*Sustainability* is one of those words in our culture that has been so thoroughly abused as to almost lose all meaning. Like the words *green*, *organic*, *natural* or *eco-*, *sustainable* is often appended to a wide variety of terms such as *sustainable* growth, *sustainable* development, *sustainable* design, *sustainable* travel, *sustainable* style or even *sustainable* websites. This is particularly unfortunate, as it is one of the words we most desperately need to understand if we hope to have a viable future for the continuation of our species. Sustainability, most simply, is the state in which a process or system is able to continue indefinitely without depleting the resources on which the system or process depends.

Many of our problems related to sustainability stem from some basic assumptions about who we are as human beings and how we relate to the non-human world. Most of us in the Western world have been enculturated into some powerful myths that continue to prevent us from understanding sustainability and our place in the world. The myth of human difference, the myth of control, the myth of technological salvation, and the myth of scarcity all conspire to keep us committed to a framework that has set us on a trajectory toward ecological disaster. In this chapter we will explore these myths and their impact on how we think about sustainability, who we are as human beings, and how we relate to the non-human world.

#### The Myth of Human Difference

From the creation stories in Genesis to the myths told over and over again in modern popular culture, we as a species think of ourselves as having somehow graduated from nature because of our large brains and good posture. Most of us have difficulty thinking back centuries, but the history of our species covers millenia. The evolution of our species began about 500,000 years ago. Modern homo sapiens that we would recognize as our relatives appeared around 200,000 years ago. Agriculture, which makes civilization and cities possible, appeared only 10,000 years ago. 10,000 years normally sounds like an incredibly long period of time. However, in light of the full history of our species it is a relatively new development and comprises only 2-5% of our existence.

When we look back on the history of our species, we talk about everything that happened before agriculture as “pre-history” and the people that lived prior to agriculture and civilization as “primitive” people. There are perhaps some good reasons for this, but it has relegated everything prior to agriculture and civilization to

a lesser status. We continue to think of the evolution of our species as a linear march of progress in which we have very little to learn from “primitive” peoples. During the centuries of colonial expansion in which Europeans conquered much of the world, one of the justifications for the oppression, enslavement, and genocide of indigenous peoples across the globe was that they were somehow less than human. Stephen Jay Gould explains the way we relate to our “primitive” past and our relationship to nature thusly,

What we criticize in ourselves, we attribute to our animal past...What we prize and strive for, we consider as a unique overlay, conceived by our rationality and imposed upon an unwilling body...Little more than ancient prejudice supports this common belief...It has roots in...our desire to view the history of life as progressive and to place ourselves on top of the heap (with all the prerogatives of domination). We seek a criterion for our uniqueness, settle (naturally) upon our minds, and define the noble results of human consciousness as something intrinsically apart from biology.<sup>1</sup>

In the more recent past (in terms of millenia) *homo sapiens* have gone from manipulating nature through agriculture to technological innovations such as automobiles and smart phones. This ability to manipulate natural resources into devices and infrastructure that insulate us from nature allows us to experience much of life, particularly in urban areas, as separate from nature. The ironic truth is that all of the things that insulate us from nature actually depend on the extraction of various mineral and hydrocarbon resources from the earth for their existence. In addition, fewer and fewer people in “developed” nations participate in agriculture (less than 1% in the United States).<sup>2</sup> We are not aware of our own connectedness to the earth through what we eat and the things we use and depend on every day.

So, for all our technology, we continue to be connected and dependent on the earth for our existence, civilization, and all that entails. No matter our perception or myths about being separate, superior to or different from other creatures, we continue to be subject to the same limitations and laws that govern them. Gould says that it is “our unwillingness to accept continuity between ourselves and nature, our ardent search for a criterion to assert our uniqueness”<sup>3</sup> which prevents us from reconciling ourselves to nature and perpetuates the myth of human difference.

### The Myth of Control

One of the things that distinguishes *homo sapiens* from other species is the degree to which we are able to manipulate our environment. Other species also manipulate their environment. Beavers build dams. Birds build nests. However, beavers and birds are not capable of destroying the ecosystem on which they depend. There are cases when natural predators are absent where a species might become

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<sup>1</sup> Stephen Jay Gould. *Ever Since Darwin: Reflections in Natural History*. (New York: Norton, 1977), 261.

<sup>2</sup> “Demographics,” last modified June 27, 2012, <http://www.epa.gov/oecaagct/ag101/demographics.html>

<sup>3</sup> Gould, *Ever Since Darwin*, 50.

overpopulated and eventually deplete its food source. The most common form of this problem in modern ecosystems is the introduction of invasive species. However, locusts are one example of naturally occurring, cyclical overpopulation.<sup>4</sup> The difference is that in the case of non-human species they quickly find themselves subject to the laws which govern ecosystems and face disastrous results with die-offs and possible extinction. In other words, non-human species have a limited ability to manipulate their environment and generally are subject to the restraints that make healthy ecosystems function properly with give and take between species.

*Population Growth:* In the case of *homo sapiens*, however, we cleverly found ways to “free” ourselves from these constraints, or so we believe. The first step to our “freedom” was agriculture. Once we were able to produce food from the land in excess of our immediate needs, we could then store it and be able to survive and not be subject to what nature provided hunter-gatherers in the form of foraged crops and wild game. The most important thing that agriculture made possible was the ability to support larger populations. With a more stable and abundant source of food we were no longer subject to the limitations of other species. As populations grew, this meant that villages and cities could no longer support their populations without expanding. This led to the impulse to expand and conquer territory through war, violence, and coercion in order to support ever expanding populations.

A study of the population growth from the beginning of agriculture to the present is revealing.<sup>5</sup> The change happens on an exponential growth curve in which the population appears to grow slowly at first and then suddenly spikes. It took from the beginning of agriculture until 1804 for global population to reach 1 billion. It only took 118 years for it to double at 2 billion in 1922 and only 52 years to double again in 1974.<sup>6</sup> We know that we reached 7 billion people almost two years earlier than predicted.<sup>7</sup> Most sources, including those of the United Nations, predict that global population will likely level off around 9 billion.<sup>8</sup>

Many claim that modern industrial agriculture will continue to be able to feed this many people. Current yields in industrial agriculture depend heavily on extracted hydrocarbons to provide fertilizer, pesticides, herbicides, and fuel for tractors and transportation. The ability to feed so many people is the result of extracting finite resources and artificially inflating the carrying capacity of our natural systems. Global agricultural production currently produces 3,500 calories per person per day,

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<sup>4</sup> “Dessert Locust Cause Severe Crop Damage in Mauritania,” accessed March 26, 2013, <http://www.fao.org/newsroom/en/news/2004/51403/index.html>

<sup>5</sup> U.S. Census Bureau. “Global Population Growth”. Last accessed February 27, 2013, <http://www.census.gov/population/international/files/wp02/wp-02003.pdf>.

<sup>6</sup> Ibid.

<sup>7</sup> “Human Population Reaches 7 Billion--How Did This Happen and Can It Go On?” *Scientific American*. October 28, 2011, accessed February 27, 2013, <http://www.scientificamerican.com/article.cfm?id=human-population-reaches-seven-billion>.

<sup>8</sup> United Nations. “World Population to 2300”, accessed February 27, 2013, <http://www.un.org/csa/population/publications/longrange2/WorldPop2300final.pdf>.

1,500 calories more than the recommended daily allowance, enough for the whole world to be obese.<sup>9</sup>

The question is how many people can be fed sustainably using current or alternative practices. In order to be sustainable, a process must be able to continue indefinitely with no negative impact on natural resources and it must replenish and support the systems on which it depends. The discussion around what kind of agriculture can feed the world and maintain a healthy ecosystem is complicated and beyond the scope of this chapter. The reality is that an adjustment in population will likely happen whether or not we are willing to face this uncomfortable topic.

We have come to believe that we are able to control nature, because agriculture and other technologies appear to free us from the constraints and limits placed on other creatures. While there are things we can do to limit population growth, we will eventually run into the natural constraints of our environment that we have no control over. The combination of the myth that we are different and apart from nature coupled with the myth that we can control and manipulate nature in defiance of natural constraints leads us to the next myth.

### The Myth of Technological Salvation

If agriculture had been the only discovery that attempted to “free” us from nature, we as a species would have quickly run into the same problem as any other species which overruns its ecosystem. We would have destroyed the very things upon which we depend. More likely, we would have been forced to find a balance between the agriculture required to support settled human populations and the needs of the ecosystem to maintain wild game, domesticated livestock, topsoil, and fertility.

What made it possible to temporarily overcome the limitations of ecosystems once more was the discovery of abundant hydrocarbons in the form of fossil fuels. This discovery made possible innovations which powered automobiles and factories. Today the fingerprints of oil are everywhere. If a product has plastic in it, it is dependent on oil. Oil permeates our modern life. The process to create petroleum takes millions of years, yet our consumption of fossil fuels continues at a rate well beyond any possibility for renewal. The use of fossil fuels as the primary source of energy which makes our current global civilization possible is the very definition of unsustainable.

The typical response to the problem of oil as a finite resource is that some technological innovation or new energy source will allow us to continue life as we know it. In considering new technologies and energy sources, the critical question is: what is the net energy output of these technologies? If it takes more energy to extract new sources of petroleum or some other energy source, then that is a net loss of energy and therefore not sustainable by definition. The oil extracted from Alberta tar sands, natural gas deposits found in shale and extracted through hydraulic fracturing, as well as ethanol and biofuels made from crops are all

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<sup>9</sup> See Francis Lappé, *World Hunger: 12 Myths* for more in depth analysis of global food systems and the causes of hunger.

examples of proposed solutions that have a questionable net energy return on investment when all factors are considered.<sup>10</sup>

Many look to what are called “renewable” energy sources to solve our energy problems. The sun, wind, waves, and geothermal heat produce energy every day with no inputs from human beings. The theory goes that if we can capture enough of this “free” energy then we will be able to fuel our current lifestyle forever. These solutions do not always account for all of the inputs and maintenance required to build the technologies that capture these renewable energy sources. What are the parts for solar panels and wind turbines made from? If the extraction of materials, maintenance, and replacement of solar panels or wind turbines require more than the energy that these technologies produce, then we are continuing to operate at a net energy loss. Perhaps renewable energy technology will be able to provide us with a certain level of sustainable energy, but probably not at the current rates of consumption.

Because of the incredible technological leaps made possible by the discovery of hydrocarbons, many people continue to believe that new technological discoveries will make it possible for us to continue on the same trajectory by simply substituting new sources of energy. The idea that we will find new sources of energy comparable to the energy density of hydrocarbons is not a matter of science, but one of faith. It is certainly possible that we will make a discovery that will allow us to continue our current patterns of massive energy consumption. However, given what we know about the nature of energy and the laws of physics it seems unlikely. Furthermore, the question persists, “How long can we continue down that path?”

Unfortunately, a lot of energy and resources are also spent promoting solutions such as recycling as the answer to our environmental problems. There are several problems with this. First, putting primary emphasis on recycling as something everyone can and should do to save the environment often has the opposite of the intended effect. Instead of leading to more sustainable lifestyles and criticism of the systems that create such waste of resources and energy, the small act of recycling assuages our guilt and allows us to ignore our own complicity in the larger systems that continue to pollute and degrade our environment. This doesn’t mean we should stop recycling, but we should recognize what it actually accomplishes and what it doesn’t. There are also major questions about the net benefit of recycling. While it is true that recycling takes less energy than producing products from new materials, this does not address the problem of the energy required for us to continue the rate of consumption demanded by the growth economy. This leads us to the final myth that continues to perpetuate our unsustainable practices.

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<sup>10</sup> Susan Lang, “Cornell ecologists study...” Cornell University News Service, July 5, 2005, last accessed March 26, 2013, <http://www.news.cornell.edu/stories/july05/ethanol.toocostly.ssl.html> and Nate Hagens, “The Oil Drum: Net Energy,” April 15, 2008, last accessed March 26, 2013, <http://www.theoil Drum.com/node/3839>

## The Myth of Scarcity

One of the foundational assumptions in modern economic thought is the concept of scarcity. The idea is that human wants and needs are unlimited, and therefore, the resources available to satisfy those needs are scarce. Capitalism claims to solve this problem by efficiently allocating scarce resources using the tools of the market. Capitalism has certainly achieved many things and was an improvement over previous economic arrangements (e.g., Feudalism). Unfortunately, the current economic arrangement does not accurately account for things such as the value of common goods which include natural resources like air and water quality, topsoil, and biodiversity.

The truth is that the earth naturally provides an abundance of resources. Mahatma Gandhi said, “The Earth provides enough to satisfy every man's need but not for every man's greed.”<sup>11</sup> This truth exposes the fallacy of the basic economic assumption of scarcity. Scarcity only exists if human wants and needs are, in fact, unlimited. Advertising executives are betting that they will be able to continue creating “needs”, but the ecological constraints of our natural resources are quickly running into conflict with these executives. If we hope to achieve sustainability, we must recognize that our basic economic assumptions must be overturned and alternatives to an infinite growth, consumer economy sought.

Politicians of various stripes can often be heard claiming that protection of the environment will cost jobs and hurt the economy. On the other side of the aisle, those who argue for environmental regulation are also guilty of buying into the myth of scarcity by trying to argue that it will not hurt jobs, but potentially fuel a green technology revolution spurring economic growth. The problem is that both sides continue to base their arguments on the unquestioned belief in the necessity of economic growth. E.F. Schumacher critiques this line of thinking:

“From an economic point of view, the central concept of wisdom is permanence... Nothing makes economic sense unless its continuance for a long time can be projected without running into absurdities. There can be ‘growth’ towards a limited objective, but there cannot be unlimited, generalised [sic] growth...The cultivation and expansion of needs is the antithesis of wisdom.”<sup>12</sup>

Unfortunately, “the cultivation and expansion of needs” is at the very heart of our consumer economy. Advertisers and marketers are paid large sums of money in order to convince us that we “need” the products of the companies they represent. The problem of sustainability can be summed up as the modern confusion of the difference between “needs” and “wants.”

*An Alternative, Sustainable Economy:* Collaborative consumption, social entrepreneurship, steady-state economics, the sharing economy and Sabbath

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<sup>11</sup> Quoted by Pyarelal Nayyar in *Mahatma Gandhi: The Last Phase*, Volume 10, page 552 (1958).

<sup>12</sup> E.F. Schumacher. *Small is Beautiful: Economics as if People Mattered*. (New York: Harper & Row, 1975), 33.

economics are some of the alternative economic possibilities circulating as people struggle to find new ways to live and work together that depend less on an extractive, growth economy.<sup>13</sup> One way to begin making these changes is to shift how we think about ourselves from primarily consumers to producers. In the future we may not be able to rely on distant others to produce the things we need.

Here are some examples. Social entrepreneurs are asking good questions about profit being the only bottom line in our economics. They are building companies which include the well-being of the environment and workers into their business models. These are often referred to as companies with a triple-bottom line. In California they have a legal structure called Benefit Corporations for such businesses.<sup>14</sup> My own small company, Edible Lawns, is one such business, partnering with other local non-profits to educate consumers about sustainability, increase participation in the local food economy, create sustainable landscapes that conserve water, and train low-income individuals with the skills to start their own socially and environmentally responsible businesses.

There are also businesses and communities dedicated to reducing our consumption through sharing economies. Zipcar and Airbnb are two of the most well-known examples of businesses built on the sharing economy.<sup>15</sup> In my community, people share cars, tools, meals, and other resources. While businesses may be able to bring some scale to this problem, we can all begin to practice sharing economics by creating networks of interdependence. Instead of purchasing new appliances like a “good” consumer, consider seeking out others with whom you can share resources. We can also learn how to repair and maintain old equipment instead of filling landfills, and share this knowledge with others.

For those who are Christians, our tradition contains invaluable resources for practicing an alternative economics in the midst of a world bent on destruction and death. The Sabbath practices of the Hebrew Bible culminate in the year of Jubilee.<sup>16</sup> This is a visceral and practical embodiment of the right-relatedness embraced by the Hebrew word *shalom*. This theme is picked up by the prophet Isaiah<sup>17</sup> and later by Jesus when he delivers his Lukan Manifesto<sup>18</sup> in the synagogue as a vision for the way that our lives together should be arranged.<sup>19</sup>

## Conclusion

The situation is dire and it does no one good to pretend that everything will just work out somehow. We must stare into the darkness of the road we are on and ask

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<sup>13</sup> Shareable is a website full of resources, stories and news about the sharing and solidarity economy. <http://www.shareable.net>. Information about Sabbath economics can be found on Ched Myers website <http://chedmyers.org>.

<sup>14</sup> See <http://www.bcorporation.net>

<sup>15</sup> See <http://www.zipcar.com> and <http://www.airbnb.com>.

<sup>16</sup> Leviticus 25:8-55

<sup>17</sup> Isaiah 61:1-2

<sup>18</sup> Luke 4:16-20

<sup>19</sup> See author's work on this theme at his blog (<http://wwje.wordpress.com>) as well as Ellen Davis' book *Scripture, Culture and Agriculture*.

ourselves the difficult questions about the choices we have made as a species. We must ruthlessly work out the slow, inevitable calculus of the ecological systems that we have ruined for our own selfish ends. The biggest and most deadly myth of all is that this is just the way things are and there is nothing we can do about it. The selfishness that tempts us to make the most of our time left on a sinking ship is the very heart of what the Christian tradition calls sin.

As we let go of the myths that continue to lead us down the broad path which leads to destruction, we must learn to listen to those voices which have been marginalized. As we alluded to earlier, indigenous peoples have much wisdom for the problems of modern civilization. Hunter-gatherers understood how to live with the food that the earth provides without human intervention. Groups we call minorities—which actually comprise the majority of the world's population—see many of these issues differently than those in the dominant culture. They provide much needed perspective on how we got into this mess in the first place.

Not one of the above ideas is a silver bullet that can solve all our problems, but together they point us to better ways of organizing our lives together and possible solutions for how to live sustainably on this planet. There are capitalists trying to account for these problems in the way that they do business. There is a growing movement of farmers dedicated to reconnecting us to the source of our sustenance while caring for the earth in the way that they grow our food, keeping and tilling it.<sup>20</sup> There are communities of faith trying to embody these values in their life together. There are many more people engaged in a variety of ways in trying to solve the greatest problem our species has ever faced. The question, as always, is whether we will be part of the solution or part of the problem.

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<sup>20</sup> Genesis 2:15

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## LIFELONG LEARNING Or, Will This Be on the Final?

Martha Rinn

The answer to the question in this chapter's title is a resounding, "Yes, what you are learning here at Texas Lutheran University *will* be on The Final." The question deserves a "yes" because what you are learning at TLU will be what *finally* matters to you throughout your life. You may not realize it, but some of those classes about which you have the most doubt right now will turn out to be the most useful and personally rewarding after you graduate. This chapter really focuses on the last *Institutional Goal for Graduates*, which states that "TLU encourages and assists its students in developing a will to pursue cultural, intellectual, and spiritual growth."

I don't expect that you spent hours studying TLU's mission statement before enrolling here. I'd be quite amazed if you did. But I want to point out that the mission statement, which is intended to sum up the university's reason for existence, states that TLU's academic programs are based on "the tradition of the liberal arts." Because this tradition is a systemic part of a TLU education, I will make heavy use of that word "liberal" in this chapter. This word has taken on some political connotations, both negative and positive, over the last century or so. So let's go straight to a reference source to find the more traditional definition that I'm going to employ. (You'd expect no less from a librarian, would you?) According to *Webster's Third International Dictionary of the English Language*, some of the more traditional definitions of the words "liberal" or "liberalism" include the following positive meanings: "marked by generosity, bounteousness, openhandedness, ... broadmindedness; openmindedness, ... of, belonging to, or befitting a free man..."<sup>21</sup> Gender-specific terminology aside, I hope you might agree that the traditional meaning of the label "liberal" is one that you could wear proudly, outside of any political agendas that have become attached to the word.

*The Encyclopedia of Education*, a more specialized source, offers a definition of the term "liberal education," which is what we hope you will get here at TLU. The article states that the original purpose of higher education in America was to "provide a liberal education based on the European model of classical education..." This model stressed the importance of a broad base of education that encouraged an appreciation of knowledge, an ability to think and solve problems, and a desire to

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<sup>21</sup> *Webster's Third New International Dictionary of the English Language*. Merriam-Webster, Inc. Springfield, MA, 2002.

improve society.”<sup>22</sup> You can see how the definition of “liberal education” grows out of the original definition of “liberal.” Both definitions emphasize an ability to keep an open mind, which can lead to the development of productive curiosity and a love of learning. Our hope is that all of our graduates will strive to become liberally educated in their time at TLU, and as a result will be able to think for themselves, be open to new and exciting ideas, and find calling and satisfaction in an increasingly complex and confusing world.

If you really embrace your liberal education, you will be poised to play a role in the leadership of our society. That role may be a big, commanding one, such as holding a public office while acting ethically; running a large company in a compassionate manner; or teaching a new generation of students to be open to new ideas. Or your leadership role may be as simple and important as being an informed, active voter; volunteering or working in a paying job that allows you to stand up for those who can’t defend themselves; or raising children who have open minds and kind hearts.

### Personal Experiences

The first person to influence my lifelong learning was my own mother. She was born in 1917 and graduated in 1937 from Texas Lutheran College, as TLU was then known. She went on to become a school teacher who taught the children of migrant workers in central Texas at a time when that wasn’t exactly a fashionable or well-paid job. Even that many years ago, people who graduated from this school received a liberal education. She has told me that her liberal education prepared her for a life where she would have to interact with some pretty high-powered people. My father, who grew up on an Iowa farm, was a Lutheran bishop for 22 years and later served the American Church of Denmark. Dad’s was another liberal education success story that I don’t have the space to go into here. But because of my father’s various roles, my mother was privileged to interact with kings, queens, ambassadors, and people from all over the world. She credits her liberal education with preparing her to successfully navigate in these kinds of settings.

At 92 years of age my mother continues to learn. She just finished reading *Rome on 5 Denarii a Day*, which is the book I will soon be reading with the Honors 331 students. She has given me a fine critique along with some wonderful ideas and approaches to the text. As a person who has traveled to Rome, she found the book to be highly engaging and pretty accurate according to what she has learned over the course of her education and actual travel experiences. My mother continues to be a leader in her church and is not afraid to take a brave stand when it is necessary. You might think that a 92-year-old woman would be reluctant to take a stand on an issue such as the Evangelical Lutheran Church has faced regarding its recent acceptance of the *Social Statement on Human Sexuality*. Even if you think she might speak out, her actual stand on the issue might surprise you. She believes that all should be accepted

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<sup>22</sup> Deusterhaus, Molly Black. “General Education in Higher Education.” *Encyclopedia of Education*. Ed. James W. Guthrie. 2nd ed. Vol. 3. New York: Macmillan Reference USA, 2003. 923. Print. 8 vols.

no matter what their sexual orientation. She stood up at a recent congregational meeting, no doubt leaning on her cane, and opined that the church should get back to the teachings of Jesus, which she summed up as a combination of the Golden Rule<sup>23</sup> and Jesus' biblical command to love God and your neighbor as yourself. This seems to be a pretty *liberal* outlook for a woman who would definitely fall into the elderly category.

My husband also comes to my mind when I think of a liberally educated person. He graduated from Texas Lutheran College in 1974 with a double major in English and Theater. He went on to work for 25 years at USAA, a world-wide insurance company based in San Antonio. You might think that's a pretty good trick for someone holding majors in the humanities. However, when he applied he was told that USAA *much* preferred liberally educated people for the kinds of work he was going to be doing. The rationale was this: my husband had made it through four years of higher education at a liberal arts institution, and he had completed degrees in the humanities. Therefore, his credentials assured USAA that *he knew how to learn*. While at TLU he had learned to read with good comprehension, write clearly, and apply what he had learned to a wide variety of situations. When he went to work for the company, he put those skills to use every single day while settling claims. USAA was not interested in a check-the-box educational approach where a freshly minted graduate would come to them bearing a standard set of workplace skills memorized by rote. Rather, they wanted someone they knew could *learn* USAA's specific approaches and methods, and be able to *apply* logic and clear thinking to solving problems. In other words, they wanted a liberally educated person.

My own journey has been a bit more convoluted. I came to Texas Lutheran College as a freshman, thinking I was going into a service profession in medical technology. However, it quickly became apparent both to me and to my professors that my desire to help others was not going to find expression in that kind of work. Try as I might, I was not a chemist. But as a TLC student I was required to take a set of core classes that exposed me to a wide variety of disciplines. As I took those classes and others, I quickly realized that I absolutely loved the study of theology, so that's what I chose as a major.

After graduation I had to decide whether to stay in Texas or move up north to attend seminary, since there were no Lutheran seminaries in Texas at that time. While I pondered my next move, I went to work at the local steel mill, where I started out as a clerk but soon worked my way up into the position of Cost Accountant. Anyone who knew me in college would have gotten a giggle out of this progression, because math was never my favorite subject. But the fact that I had taken math classes served me well. As a Cost Accountant I worked with 22 manufacturing plants around the United States. Once again, my liberal education opened doors to me that probably would not have opened if I'd only focused very narrowly on one set of skills, or if I had considered my education to be complete the minute I walked across the stage on graduation night. My superiors saw my

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<sup>23</sup> The "Golden Rule" is most often quoted as being, "Do unto others as you would have them do unto you."

aptitudes and gave me chances that might have been denied to someone without a liberal education.

I could easily have continued on the financially lucrative path I was on, in a job that featured plenty of good perks like opportunities to travel and a set of great co-workers. In addition, quite frankly I was pretty comfortable in the job itself. But I continued to have a growing nagging feeling; I was ignoring that old, original desire to be helpful to others in more tangible, one-on-one ways. I was extremely successful as a cost accountant, so much so that my boss delayed my departure by six months because he kept finding ways to make me put off my exit. But I eventually came to realize that I had to take a chance on a new career that allowed me to use that long-ignored calling to make a difference. After twelve years in accounting I realized that I needed to make a decision, and I decided to change.

I planned this change carefully, and I did plenty of homework, including taking multiple versions of those dreaded career and aptitude tests to figure out exactly what direction I wanted to take. I'll admit that I had my doubts about those tests. When I was a kid they'd always seemed pretty dorky to me; my tests always resulted in a recommendation to become a forest ranger. But after taking several versions I began to see trends and possibilities that I'd never before considered. I also discussed my thoughts and feelings with close family and friends in order to get their feedback. It's a funny thing—when I told my mother that I wanted to go back to school to become a librarian, she confided in me for the first time ever that she had wanted to be a librarian. However, she was not allowed to do so because that career choice would have entailed attending a Catholic university, which was a forbidden act for a Lutheran minister's daughter in the mid-1930s.

After much research and soul-searching, I took my chance and I've never looked back. I will say that my years in accounting taught me many useful things that I still use to this day. For example, as a library director a large part of my work has to do with creating, implementing, and maintaining a balanced budget. I've written successful grant proposals, each of which required a well-reasoned and fully justified budget. My largest successful proposal was for \$75,000 worth of networking and computing equipment for TLU. All of this is a mark of a liberally-educated person: the ability to apply the things you learn to new and different experiences, and to continue to stretch and seek out new learning opportunities.

I came out of the master's program at UT determined that I was going to be a librarian at a public library. I even had a job lined up and waiting for me after I received my Master of Library and Information Science. But the wife of one of my own TLC professors talked me into applying for a librarian's position that was open at TLC. At this university I have found the perfect environment for blending my love of learning and my desire to help others in a personal way. I've found my vocation and calling, and I owe it all to *learning how to learn* and continuing that process to this day. One of my crowning achievements so far, in terms of personal fulfillment, has been becoming a librarian.

If you take nothing else away from this chapter, please remember the following: any employer for whom you would wish to work should place a high value on the fact that you have learned how to learn. If this trait is not valued by an employer, then that company or institution probably isn't a place you'll want to remain for very

long. A place where you are not allowed to continue to grow and learn is soul-killing. The ability to recognize these kinds of organizations and to avoid them or leave them at-will may require some experience and even some financial planning. But if you are liberally educated, you will be better prepared to make the observations and judgments that will allow you to realize when you are in the wrong place. In reality, *any* organization can be a toxic place if it does not value inquisitiveness and intelligence in its members. This could even apply to an organization that seems to have a mission that fits your personal vocational desires.

The company I left actually *did* place a high value on continuing to learn, so I can't attribute my yearning to change on some kind of company-wide lack of support of lifelong learning. Frankly, it requires a lot of courage to make a life change like this. I'll admit that it took me a full twelve years in the workforce to come to my decision to pursue my true vocation. I have often wrestled with the question of why it took me so long to make this decision. I hate to admit that a good part of the long delay was probably due to fear. This realization leads me to urge you to be bold and follow your calling, once you discern what that calling is, and whenever that discernment might come.

### Finding Fulfillment

On a recent episode of the *CBS Sunday Morning* news show, Ben Stein gave a commentary entitled "How to Live: Follow Your Heart, Risk Be Damned." In this segment, Stein tells about asking his "shrink," to use his term, what separates happy people from unhappy people. The doctor answered "like a shot" that the unhappy ones were those who let some kind of outside pressure force them into a career that "wasn't really them." The doctor went on to say that these folks eventually find themselves in the middle of their lives, unable to go back and become what they should have been. Speaking as someone who *did* go back and successfully make that change, I'd obviously disagree with the doctor that a change cannot take place even later in life. But the doctor's explanation of the difference between happy people and unhappy people really hit home with me. Here is a quote from Stein:

'And what about the happy ones?' I asked [my doctor]. 'What did they do?' My shrink answered that, again, like a shot. 'They made a decision to live,' he said, and those were his exact words. They decided to do what their hearts told them to do, to do what was in them to do. They took risks and they took chances, and they tried a lot of different things until they got to where they wanted to be... Unless you are born rich—or even if you are—you have to earn your keep, that is for sure. But to decide to live—that makes a lot of difference in this difficult world. That's it. Choose to live a life you want to live, not one that's safe or what someone else thinks you should do. Decide to live.<sup>24</sup>

At the age of 66 Stein definitely qualifies as an elder statesman. But it is interesting to me that even at his age he found this doctor's advice to be

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<sup>24</sup> Stein, Ben. "How to Live: Follow Your Heart, Risk Be Damned." *CBS Sunday Morning*. CBS. KENS, San Antonio, Texas, 13 June 2010. Television.

“spectacular.” So give yourself the tools and knowledge and time you need to figure out what your heart is telling you to do. If you learn this lesson a lot earlier in life than Stein, and if Stein’s “shrink” is correct, you’ll be one of the happy ones!

### Community Examples

Your own professors and the staff members here at TLU are people who continue to love and treasure learning. I’ll relate a few of their stories here, starting with a dear faculty colleague who is no longer with us. This book is dedicated to her.

Linda Clark was a devoted, engaged librarian and teacher. Her love of learning was so great that it almost formed a physical aura around her. Her life was cut short in a car accident as she drove home from work on March 23, 2009. This loss was shocking, coming unexpectedly as such tragedies always do. Making the loss even worse was the fact that Linda had intended to retire soon, and she and her husband had made many wonderful plans for the future. However, as I’ve come to grips with the loss of my friend, it has been a great comfort to me to know that Linda never wasted an opportunity to travel and learn about other cultures, and to share that love and knowledge with students, friends, and colleagues. She capitalized daily on these opportunities in many varied ways. You are probably not aware that it can be somewhat unusual for academic librarians to teach semester-long classes. But Linda took teaching assignments frequently. She always had new, exciting, and sometimes challenging ideas of things to do in the library, and was always ready to conduct library instruction even though her title was Technical Services Librarian. The fact that Linda and her husband served in the Peace Corps in Korea during the 1960s continued to inform her teaching. Her interest in international education eventually led her to participate in a Semester at Sea that took her around the world during a sabbatical leave from TLU. Many of the things Linda learned on that leave found their way into classes that she subsequently taught.

Linda’s eager willingness to try new things was apparent in everything she did. It didn’t matter if she was engaging in those special one-on-one learning interactions that librarians get to enjoy with students; finding “just the right book” to fit with a specific course or student research interest; teaching Freshman Experience or Global Perspectives classes; or simply goofing around with the highly-amateur Faculty/Staff All-Star Gospel Band. Linda had a beautiful, clear alto voice and the training and ability to read music and sing harmony. Her favorites were old gospel songs and spirituals. Her one big regret about singing in the Band was that Pastor Greg, who does not care for tambourines, absolutely forbade her to play one in the band. Linda continued to learn throughout her life, and she valued her learning experiences right up to the day she died.

If you look around you’ll see lots of examples of people who throughout their lives continue to learn and enjoy a wide array of activities that might seem to be unrelated or out-of-the-ordinary. These are people who embrace new experiences and challenges rather than avoiding them.

The variety of your professors’ activities might surprise you; the situation reminds me a bit of an old Calvin & Hobbes cartoon. You may know that Calvin is a precocious 6-year-old boy with a vivid imagination. This particular cartoon is set in

the summertime, when Calvin is off from school. Calvin's long-suffering Mom is unloading groceries in the kitchen as Calvin watches. Mom tells Calvin that she saw his teacher, Miss Wormwood, at the supermarket, and that she said to tell Calvin hi. Calvin, with a stunned look on his face, asks his Mom if Miss Wormwood *really* shops in a supermarket. Mom says, "Well certainly. What did you think?" In the last panel, Calvin, who is scratching his head in a puzzled fashion, delivers the following soliloquy: "I dunno ... I kinda figured teachers slept in coffins all summer."<sup>25</sup>

Trust me, TLU professors and staff members do NOT hide in coffins like vampires when they are not in the classroom or on campus. TLU faculty and staff excel at being extraordinary learners. Dr. Robin Bisha teaches communications but she is also an accomplished yoga instructor who speaks and reads Russian. Dr. John Sieben is a mathematician and computer scientist, but he also engages in sailing and scuba diving. Prof. Steve Boehm is a sociologist who plays a *killer* Dobro. Dr. Bob Jonas is a biologist and also a brewer of fine beers. Prof. Mark Dibble is a librarian and an extreme basketball player. Prof. Rodrick Shao is an instructional technologist but he also raises funds to help children orphaned by AIDS in Tanzania. You'll see Craig Hunt gardening or mowing around campus, but you'll also see him in his role as an accomplished music director when he works with the faculty/staff bell choir. Pastor Greg Ronning is a campus minister and scratch golfer.

Don't ever short-change your professors or staff members by thinking that they are narrowly focused individuals who never leave their offices or labs, or stay within the strict confines of their chosen disciplines. Many of them came to TLU precisely because they *didn't* want to get pigeonholed into a narrow slot at a large institution. They want to be someplace where they are able to experience the stunning cross-pollination that can occur where collegiality is natural and interdisciplinary efforts are encouraged and maybe even required. TLU professors and staff are very, very intelligent people who continue to learn and grow in sometimes amazing ways.

## In the Know

Do you remember when you first learned that a parent, an older sibling, or some other childhood idol didn't have all the answers? That fact may have disillusioned you a little bit at first. But I hope that you have since figured out that the strongest, most confident people are the ones who willingly admit that they don't know everything and don't have all the answers. If they are also lifelong learners, these same people will make that admission and then take the next vital step. They will go on to *find out* information about the question or issue at hand. Sometimes they will even use this new knowledge to forge creative and unique works, discoveries, and inventions.

As a librarian, my credo is that I don't know all the answers but I *do* know how to go about informing myself. Of all the things I've learned in my life, this ability is the most golden. I'll admit that it can also be terrifying and exhilarating at the same

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<sup>25</sup> Watterson, Bill. "Calvin and Hobbes." Cartoon. *Homicidal Psycho Jungle Cat*. By Bill Watterson. Kansas City: Andrews and McMeel, 1994. 150. Print.

time—I would imagine that a physical analogy might be bungee jumping. My own ability to make this kind of jump was severely tested recently when I was asked to fill in for a colleague who unexpectedly was unable to teach two sections of ISYS133, Applications Software. Ordinarily I would welcome a request to teach; in fact, I had even expressed a desire to teach ISYS133. However, this specific request came to me a mere three weeks before the semester began, and I had never taught the class before or even set eyes on the textbook. I really had only one choice if this was going to work. I was honest with my students, informed them of the reasons why I was teaching the classes, and told them that we would all be embarking on a major learning adventure together. I believe that everyone, including me, learned many things that semester. I was living out that credo I mentioned before, as I experienced firsthand that nobody can know everything. I also learned that while this is a really great philosophy, it can still be a difficult admission for a college professor. But once again I was surprised. In the end my student course evaluations for those two classes were the highest I'd received in years. I suppose I shouldn't have been so amazed. Once again my liberal education had given me the tools I needed to delve into an unfamiliar subject and learn new things, even under extreme pressure.

### Dealing with Conflicting Ideas

Another key to being informed is to try to hear many voices and perspectives. To do this you must be willing to consider facts, opinions, and thoughts that might conflict with beliefs you hold. When you are considering complex, important issues, I would encourage you to use that *liberal* approach I described in the opening paragraph of this chapter. Very few of the important questions in your life will have clear-cut answers. At the very least, listen to others with an open mind and with civility. Screaming and vitriol are most often used to intimidate and to obscure true meanings and agendas. These actions can also be a sign of a weak argument that won't hold up to facts or to courteous, informed discourse. Holocaust deniers provide just one example of a loudly expressed, but egregiously erroneous, belief.

Read, view, or listen to a variety of sources with differing viewpoints in order to gather as many facts about issues as you can, and then take care to determine whether someone is stating facts or simply opining. This kind of analysis can be time-consuming and very frustrating. But after careful scrutiny, you can then use all the information you've considered to synthesize your own viewpoint and stance. Understanding your opponent's point of view and then refuting it can be one of the most convincing methods of arguing a thesis. A life-long learner constantly conducts similar internal arguments as he or she weighs information, forges knowledge, and gains understanding.

### Following Paths

This chapter opened with the following affirmation: the things you learn while undertaking a liberal education prepare you for all of the *Final Exams* you'll have to

undergo in life. Most importantly, this kind of learning also prepares you to capitalize on unexpected opportunities that will come your way.

Let's revisit my friend Linda one more time. One particular image of Linda stands out in my mind as I think about taking hold of opportunities. The image is a photograph that her family had on display when we all went to Linda's home after her memorial service in San Antonio. In the photograph Linda is walking down a wooded path. Under one arm she is toting the Korean daughter she and her husband had adopted; in the picture this child is a toddler. It's an undeniably wonderful picture of a mother and daughter. To me, it's even more endearing due to the fact that Linda was quite short in stature, and in the picture her young daughter's legs dangle about halfway to the ground. But one of the most striking things about that photograph is the fact that it embodies the richness Linda was able to enjoy due to her open approach to life and learning. Without her love of learning and her openness to other cultures and new ideas, the life represented by this beautiful little tableau probably never would have happened. One of the most precious relationships in Linda's life—this chosen daughter who has grown into a wonderful, successful, and independent young adult—might never have existed.

So I encourage you to embrace life-long learning like Linda did. Treasure your liberal education and use it as a key to leading a life that is open to all that the world has to offer. In the end, you will have an impact in ways you'd never begin to imagine, both on your own life and on the lives of others.



## CALLING ALL INNOVATORS

Tony Wagner

*Our students want to change the world. But to give them the skills they need to do so, schools must focus on five essential practices.*

In their recent book *That Used to Be Us*,<sup>1</sup> Thomas Friedman and Michael Mandelbaum argue that to succeed in the new global knowledge economy, all young people must learn to be innovators. U.S. workers who cannot bring innovation to their work will see their jobs increasingly off-shored or automated. Policymakers, economists, and business people may fiercely debate which specific approaches will solve the current worldwide economic crisis, but most of them agree on one thing: A nation's long-term economic health depends on innovation.

In the last few years, I have explored the question of how U.S. schools can educate young people to become innovators. I've interviewed scores of highly innovative 20-somethings— budding engineers and scientists, artists and musicians, entrepreneurs seeking better ways to solve societal problems, and others—and then studied the parental, educational, and mentoring influences that they told me were most important in their development.

I found that many young Americans in this millennial generation have a strong desire to do meaningful work and make a difference in the world. But I also discovered that even those who have attended the most prestigious high schools and colleges have most often become innovators *in spite of* their schooling, not because of it. Having all students graduate from high school "college-ready" is the new mantra of policymakers and educators alike, but the reality is that the overwhelming majority of U.S. high schools and colleges are not preparing students to become innovators.

### Education for Innovation: Five Essentials

Despite this generally bleak picture, some extraordinary high schools, colleges, and graduate schools are doing an outstanding job of educating young people to be innovators—places like High Tech High in San Diego, California; the more than 80 New Tech high schools in 16 states; Olin College in Needham, Massachusetts; the Institute of Design at Stanford University; and The Media Lab at the Massachusetts Institute of Technology. The culture of learning in these highly successful and

popular programs is radically at odds with the culture of schooling in most classrooms. Here are five essential differences.

### Collaboration Versus Individual Achievement

Conventional schooling in the United States celebrates and rewards individual achievement while offering few meaningful opportunities for genuine collaboration. Students are ranked and sorted according to their levels of achievement as measured by tests and grades. Serious and sustained collaboration is not a real expectation, either for students or for faculty.

Not so at the programs mentioned above, which understand that collaboration is essential for innovation. Every class requires teamwork and collaboration, and learning to collaborate is one of the most highly valued outcomes. For example, at High Tech High, a 9th grade requirement is for teams of students to develop a new business concept—imagining a new product or service, writing a business and marketing plan, and developing a budget. The teams must then present their plans to a panel of business leaders whom the school invites to assess students' projects. All seniors must also complete a service learning project in teams as a condition of graduation.

### Multidisciplinary Learning Versus Specialization

Expertise and specialization will always have an important role, and learning for its own sake has enormous value. However, innovation requires knowing how to apply an interdisciplinary approach to solve a problem or create something new. Judy Gilbert, the director of talent at Google, told me that learning to solve problems across disciplinary boundaries is one of the most important things that schools can teach students to prepare them to work at companies like Google.

High schools and colleges that create a culture of innovation know this, so most of their courses focus on answering a question or solving a problem using multiple academic disciplines. At Olin College, one-half of the students create their own interdisciplinary majors. One Olin senior whom I interviewed had a deep interest in the history of cities and the challenge of environmental sustainability. She developed an interdisciplinary major, with a combined humanities, engineering, and ecological focus, around the problem of how to create sustainable cities.

### Trial and Error Versus Risk Avoidance

The most innovative companies celebrate failure. At IDEO, a design and consulting firm that is consistently recognized as one of the most innovative companies in the world, the motto is, "Fail early and often." Most high school and college classes penalize failure and thus discourage students from taking intellectual risks. In contrast, schools with a culture of innovation teach students to view trial and error—and failure—as integral to the problem-solving process.

One Olin college student told me, "We don't talk about failure here. We talk about iteration." Students at Olin often become interested in a particular problem

and begin working on a possible solution in a class, and then complete some kind of prototype or version 1.0 as a project for the course. They then continue to study the problem and evolve the project in succeeding classes, with feedback from their peers and teachers.

### Creating Versus Consuming

Students' experience in most high school and college courses focuses on acquiring knowledge by passively listening to lectures. In contrast, in schools with a culture of innovation, the primary goal is to acquire knowledge and develop skills while solving a problem, creating a product, or generating a new understanding. Students are creators, not mere consumers. They acquire knowledge on an as-needed basis, as a means to an end.

The range of projects I found in the schools mentioned above was stunning. For example, at High Tech High, I interviewed a young woman who had created an elementary curriculum for teaching about the ecology of the San Diego Bay. At Olin, I talked to a team of 10 students who had designed and built a remotely controlled model sailboat for an international competition, learning an enormous amount about mechanical and electrical engineering, computer science, weather, and sailing strategy in the process. These students understand and retain far more of what they learn because they have studied and used the knowledge in an applied context.

### Intrinsic Versus Extrinsic Motivation

Conventional academic classes rely on extrinsic incentives as motivators for learning. Although many teachers may espouse the value of learning for its own sake, they nevertheless rely heavily on traditional carrots and sticks to ensure that students come to class and learn the material.

Perhaps the most important finding of my research is that young innovators are not primarily motivated by extrinsic incentives. Even those who come from families that have struggled economically are intrinsically motivated. As a consequence, the programs that do the best job of educating young innovators focus on intrinsic motivations for learning through a combination of play, passion, and purpose: playful, discovery-based learning leads young people to find and pursue a passion, which eventually evolves into a deeper sense of purpose.

### Portrait of an Innovating Teacher

The Intel Science Talent Search, the oldest and most prestigious pre-collegiate science competition in the United States, annually awards more than \$1.25 million in prizes and scholarships. Amanda Alonzo, a science teacher at Lynbrook High School in San Jose, California, has mentored two Intel Science Prize finalists and 10 semifinalists in the last two years—more than any other public school teacher in the United States. Her secret? Using the five essential practices described here to create a culture of innovation in her after-school, noncredit Intel Club.

Amanda requires students to work in pairs to develop and refine their research project concepts. The projects they pursue always demand a multidisciplinary approach and must result in the creation of something useful. For example, one of her students is working on a smartphone application that uses the phone's camera to track the eye movements of someone who has been drinking alcohol to determine whether it would be safe for that person to drive. To develop this app, the student needed to know about the biology of sight, the physics of light, engineering, and computer programming. Presenting her project required speaking, writing, and graphic skills. Establishing the product's social relevance required social science knowledge and logical thinking.

Amanda also recognizes the importance of giving the students ownership of what they are learning and making the work fun so that they are motivated to persevere in spite of failures. "One of the most important things I have to teach them," she commented, "is that when you fail, you are learning. I show them examples of where other scientists didn't get results either."

Amanda believes her Intel Club students are learning far more science than are students in her regular classes, where she has to cover the content required for state tests at a pace that allows less time for inquiry, exploration, or discovery. And she refuses to teach advanced placement courses because she believes they are far too content-driven. Amanda explained,

In my required classes, I have state standards that I have to teach, which are all about content knowledge. Students have to know that mitochondria make energy. Whereas in the noncredit seminars where I introduce students to the scientific method as a preparation for the Intel competition, I am teaching them how to *figure out* that mitochondria make energy, as well as how to ask good questions, problem solve, and come up with novel solutions.

After students in her regular biology class have taken the state test, she has each student develop a research proposal on a topic of interest to him or her and present it to the class. "Many go on to pursue their ideas for experiments on their own or join the Intel Club in the fall," she added.

### Creating Innovation-Driven Schools

To motivate today's students and prepare them for a world that will require them to innovate, educators must be far more intentional in designing cultures of innovation that foster the skills that matter most. But we cannot mandate that teachers or school systems develop such cultures. The education environment must inspire and encourage educators to innovate.

Policymakers need to promote the development of more authentic, performance-based forms of assessment, such as digital portfolios that follow students from 1st grade as a record of their progressive mastery of the skills and dispositions of innovators. Schools need to provide focused professional development that enables teachers to create hands-on, project-based, interdisciplinary courses. Larger school districts and states should establish laboratory schools that can pioneer these new approaches to teaching, curriculum,

and assessment. As we create many more transparent models of success, the skeptics will better understand both what is possible and what is necessary for a better future, thus creating more demand for innovation in classrooms.

The education profession has traditionally been risk-averse, and current punitive accountability systems have greatly exacerbated this tendency. Do we have the courage and sense of urgency needed to make a radical break from the old ways and create schools with the cultures of innovation that our students want and our economy needs? Can many more educators become innovators? Can we work together to ensure that all students graduate from high school innovation-ready?

#### Endnote

<sup>1</sup> Friedman, T. L., & Mandelbaum, M. (2011). *That used to be us: How America fell behind in the world it invented and how we can come back*. New York: Farrar, Straus, and Giroux.



## RIGOR REDEFINED

Tony Wagner

*Even our “best” schools are failing to prepare students for 21st-century careers and citizenship.*

In the new global economy, with many jobs being either automated or “off-shored,” what skills will students need to build successful careers? What skills will they need to be good citizens? Are these two education goals in conflict?

To examine these questions, I conducted research beginning with conversations with several hundred business, nonprofit, philanthropic, and education leaders. With a clearer picture of the skills young people need, I then set out to learn whether U.S. schools are teaching and testing the skills that matter most. I observed classrooms in some of the nation's most highly regarded suburban schools to find out whether our “best” was, in fact, good enough for our children's future. What I discovered on this journey may surprise you.

### The Schooling Students Need

One of my first conversations was with Clay Parker, president of the Chemical Management Division of BOC Edwards—a company that, among other things, makes machines and supplies chemicals for the manufacture of microelectronics devices. He's an engineer by training and the head of a technical business, so when I asked him about the skills he looks for when he hires young people, I was taken aback by his answer.

“First and foremost, I look for someone who asks good questions,” Parker responded. “We can teach them the technical stuff, but we can't teach them how to ask good questions—how to think.”

“What other skills are you looking for?” I asked, expecting that he'd jump quickly to content expertise.

“I want people who can engage in good discussion—who can look me in the eye and have a give and take. All of our work is done in teams. You have to know how to work well with others. But you also have to know how to engage customers—to find out what their needs are. If you can't engage others, then you won't learn what you need to know.”

I initially doubted whether Parker's views were representative of business leaders in general. But after interviewing leaders in settings from Apple to Unilever to the U.S. Army and reviewing the research on workplace skills, I came to understand that the world of work has changed profoundly.

Today's students need to master seven survival skills to thrive in the new world of work. And these skills are the same ones that will enable students to become productive citizens who contribute to solving some of the most pressing issues we face in the 21st century.

### 1. Critical Thinking and Problem Solving

To compete in the new global economy, companies need their workers to think about how to continuously improve their products, processes, or services. Over and over, executives told me that the heart of critical thinking and problem solving is the ability to ask the right questions. As one senior executive from Dell said, "Yesterday's answers won't solve today's problems."

Ellen Kumata, managing partner at Cambria Associates, explained the extraordinary pressures on leaders today. "The challenge is this: How do you do things that haven't been done before, where you have to rethink or think anew? It's not incremental improvement any more. The markets are changing too fast."

### 2. Collaboration and Leadership

Teamwork is no longer just about working with others in your building. Christie Pedra, CEO of Siemens, explained, "Technology has allowed for virtual teams. We have teams working on major infrastructure projects that are all over the U.S. On other projects, you're working with people all around the world on solving a software problem. Every week they're on a variety of conference calls; they're doing Web casts; they're doing net meetings."

Mike Summers, vice president for Global Talent Management at Dell, said that his greatest concern was young people's lack of leadership skills. "Kids just out of school have an amazing lack of preparedness in general leadership skills and collaborative skills," he explained. "They lack the ability to influence."

### 3. Agility and Adaptability

Clay Parker explained that anyone who works at BOC Edwards today "has to think, be flexible, change, and use a variety of tools to solve new problems. We change what we do all the time. I can guarantee the job I hire someone to do will change or may not exist in the future, so this is why adaptability and learning skills are more important than technical skills."

### 4. Initiative and Entrepreneurialism

Mark Chandler, senior vice president and general counsel at Cisco, was one of the strongest proponents of initiative: "I say to my employees, if you try five things and get all five of them right, you may be failing. If you try 10 things, and get eight of them right, you're a hero. You'll never be blamed for failing to reach a stretch goal, but you will be blamed for not trying. One of the problems of a large company is risk

aversion. Our challenge is how to create an entrepreneurial culture in a larger organization.”

## 5. Effective Oral and Written Communication

Mike Summers of Dell said, “We are routinely surprised at the difficulty some young people have in communicating: verbal skills, written skills, presentation skills. They have difficulty being clear and concise; it's hard for them to create focus, energy, and passion around the points they want to make. If you're talking to an exec, the first thing you'll get asked if you haven't made it perfectly clear in the first 60 seconds of your presentation is, ‘What do you want me to take away from this meeting?’ They don't know how to answer that question.”

Summers and other leaders from various companies were not necessarily complaining about young people's poor grammar, punctuation, or spelling— the things we spend so much time teaching and testing in our schools. Although writing and speaking correctly are obviously important, the complaints I heard most frequently were about fuzzy thinking and young people not knowing how to write with a real voice.

## 6. Accessing and Analyzing Information

Employees in the 21st century have to manage an astronomical amount of information daily. As Mike Summers told me, “There is so much information available that it is almost too much, and if people aren't prepared to process the information effectively it almost freezes them in their steps.”

It's not only the sheer quantity of information that represents a challenge, but also how rapidly the information is changing. Quick—how many planets are there? In the early 1990s, I heard then–Harvard University president Neil Rudenstine say in a speech that the half-life of knowledge in the humanities is 10 years, and in math and science, it's only two or three years. I wonder what he would say it is today.

## 7. Curiosity and Imagination

Mike Summers told me, “People who've learned to ask great questions and have learned to be inquisitive are the ones who move the fastest in our environment because they solve the biggest problems in ways that have the most impact on innovation.”

Daniel Pink, the author of *A Whole New Mind*, observes that with increasing abundance, people want unique products and services: “For businesses it's no longer enough to create a product that's reasonably priced and adequately functional. It must also be beautiful, unique, and meaningful.”<sup>1</sup> Pink notes that developing young people's capacities for imagination, creativity, and empathy will be increasingly important for maintaining the United States' competitive advantage in the future.

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<sup>1</sup> Pink, D. (2005). *A whole new mind: Moving from the information age to the conceptual age*. New York: Riverhead Books, pp. 32–33.

## The Schooling Students Get

I've spent time observing in classrooms across the United States for more than 20 years. Here is a sampling of what I've seen recently. These examples come from secondary honors and advanced placement (AP) classes in three school systems that enjoy excellent reputations because of their high test scores.

### AP Chemistry

Students work in groups of two and three mixing chemicals according to directions written on the chalkboard. Once the mixtures are prepared, students heat the concoction with Bunsen burners. According to the directions on the board, they are supposed to record their observations on a worksheet.

I watch a group of three young men whose mixture is giving off a thin spiral of smoke as it's being heated—something that none of the other students' beakers are doing. One student looks back at the chalkboard and then at his notes. Then all three stop what they are doing, apparently waiting for the teacher to come help them.

“What's happening to your mixture?” I ask the group. “Dunno,” one mutters. “We must have mixed it up wrong.”

“What's your hypothesis about what happened—why it's smoking?”

The three look at one another blankly, and the student who has been doing all the speaking looks at me and shrugs.

### AP U.S. Government

The teacher is reviewing answers to a sample test that the class took the previous day. The test contains 80 multiple-choice questions related to the functions and branches of the federal government.

When he's finished, he says “OK, now let's look at some sample free-response questions from previous years' AP exams.” He flips the overhead projector on and reads from the text of a transparency: “*Give three reasons why the Iron Triangle may be criticized as undemocratic.* How would you answer this question?”

No one replies.

“OK, who can give me a definition of the Iron Triangle?”

A student pipes up, “The military-industrial-congressional complex.” “OK, so what would be three reasons why it would be considered undemocratic?” The teacher calls on a student in the front row who has his hand half raised, and he answers the question in a voice that we can't hear over the hum of the projector's fan.

“Good. Now let's look at another one.” The teacher flips another transparency onto the projector. “Now this question is about bureaucracy. Let me tell you how to answer this one. . . .”

## AP English

The teacher explains that the class is going to review students' literature notes for the advanced placement exam next week. The seven students are deeply slouched in their chairs, arranged in a semicircle around the teacher's desk.

The teacher asks, "Now what is Virginia Woolf saying about the balance between an independent life versus a social life?"

Students ruffle through their notebooks. Finally, a young woman, reading from her notes, answers, "Mrs. Ramsey sought meaning from social interactions."

"Yes, that's right. Now what about Lily, the artist? How did she construct meaning?"

"Through her painting," another student mumbles, her face scrunched close to her notes.

"So what is Woolf saying about the choices these two women have made, and what each has sacrificed?"

No reply. The teacher sighs, gets up, goes to the board, and begins writing.

## A Rare Class

Once in a great while, I observe a class in which a teacher is using academic content to develop students' core competencies. In such a class, the contrast with the others is stark.

At the beginning of the period in an Algebra II class, the teacher writes a problem on the board. He turns to the students, who are sitting in desks arranged in squares of four that face one another. "You haven't seen this kind of problem before," he explains. "Solving it will require you to use concepts from both geometry and algebra. Each group will try to develop at least two different ways to solve this problem. After all the groups have finished, I'll randomly choose someone from each group who will write one of your proofs on the board, and I'll ask that person to explain the process your group used."

The groups quickly go to work. Animated discussion takes place as students pull the problem apart and talk about different ways to solve it. While they work, the teacher circulates from group to group. When a student asks a question, the teacher responds with another question: "Have you considered...?" "Why did you assume that?" or simply "Have you asked someone in your group?"

What makes this an effective lesson—a lesson in which students are learning a number of the seven survival skills while also mastering academic content? First, students are given a complex, multi-step problem that is different from any they've seen in the past. To solve it, they have to apply critical-thinking and problem-solving skills and call on previously acquired knowledge from both geometry and algebra. Mere memorization won't get them far. Second, they have to find two ways to solve the problem, which requires initiative and imagination. Third, they have to explain their proofs using effective communication skills. Fourth, the teacher does not spoon-feed students the answers. He uses questions to push students' thinking and build their tolerance for ambiguity. Finally, because the teacher announces in advance that he'll randomly call on a student to show how the group solved the

problem, each student in every group is held accountable. Success requires teamwork.

### Rigor for the 21st Century

Across the United States, I see schools that are succeeding at making adequate yearly progress but failing our students. Increasingly, there is only one curriculum: test prep. Of the hundreds of classes that I've observed in recent years, fewer than 1 in 20 were engaged in instruction designed to teach students to think instead of merely drilling for the test.

To teach and test the skills that our students need, we must first redefine excellent instruction. It is not a checklist of teacher behaviors and a model lesson that covers content standards. It is working with colleagues to ensure that all students master the skills they need to succeed as lifelong learners, workers, and citizens. I have yet to talk to a recent graduate, college teacher, community leader, or business leader who said that not knowing enough academic content was a problem. In my interviews, everyone stressed the importance of critical thinking, communication skills, and collaboration.

We need to use academic content to teach the seven survival skills every day, at every grade level, and in every class. And we need to insist on a combination of locally developed assessments and new nationally normed, online tests—such as the College and Work Readiness Assessment ([www.cae.org](http://www.cae.org))—that measure students' analytic-reasoning, critical-thinking, problem-solving, and writing skills.

It's time to hold ourselves and all of our students to a new and higher standard of rigor, defined according to 21st-century criteria. It's time for our profession to advocate for accountability systems that will enable us to teach and test the skills that matter most. Our students' futures are at stake.

## Mind as a Bucket

*“Procrastination is the most creative act there is.”*

*Rudolf Staffel (1911-2002), internationally acclaimed ceramic artist, originally from San Antonio*

Into the bucket we pitch

the fresh from the word freshmen

stick it to every day's forehead

fresh just by waking & thinking

stirring & mixing

fresh at any age

grant ourselves our own fresh mistakes

the inn from the word innovation

wild ideas blazing through

check them in

assign them a spacious room

don't worry      they're not staying forever

but think what might happen

while they're visiting

who else they might invite over

what they might find

Innovation has great welcome in it  
surprise    savory sweetness  
              a willingness to fail  
The mind's a very deep bucket  
              room for others who innovate  
in ways different from you  
              plenty of empty  
so many sifting & stirring styles  
              but first you have to pour something in  
              don't wait too long  
              perfection not required  
bucket may be rinsed & re freshed  
              don't forget  
pause to        thank the bucket

Naomi Shihab Nye

## AUTHORS

Charla Bailey *has been in the import-export business at TLU since 1997. She is the director of TLU's international education program and enjoys working with students coming from and going to a wide range of countries. She takes pride in facilitating students' transitions from being nervous and worried to knowledgeable and worldly. In her free moments, Charla enjoys spending time with her husband and their labrador retriever, running (well the finishing part anyway!), and traveling. Sometimes all of these activities come together at once.*

H. David Baer *has served as TLU's ethicist for over a decade and is a specialist in just war theory. He has had the opportunity to team-teach an ethics course with two of the other authors in this volume and has coached TLU's ethics bowl team on to great regional success. He relaxes by playing classical music on the piano. Dr. Baer summers in his wife's home country Hungary with their two children. Hannah and Martzi are both bilingual and each are studying a third language in an attempt to catch up to their parents.*

Tim Barr *directs the Jon and Sandra Moline Center for Servant Leadership. The center is charged with building and nurturing a culture of service on the TLU campus, both through extracurricular activities (volunteerism) and curricular engagement (service integrated into courses to deepen a student's understanding of course content). Tim credits some of the people named in his essay and many who are not with shaping his understandings of service. One of his deep joys is spending time with his two daughters Ariana and Natalya and his wife Kathleen. He also enjoys riding a bike to and from work. Tim encourages students to join in making Seguin a better place for everyone.*

Beth Barry *teaches Frex 134 each fall and currently serves as the Director of the Summer Scholars Academy. In our composition program, she continues to develop "Write to Serve," which gives students opportunities to use their writing skills in partnership with the surrounding community. She lives in New Braunfels with her loving little family. In her spare time, she enjoys cheering for the Mighty Unicorns, raising money for the Cystic Fibrosis Foundation, and participating in the faith life of Sts. Peter and Paul Catholic Church. She also loves to laugh, out loud and as often as possible. She is proud to have had a part in the creation of this book.*

Douglas R. Boyer *is the director of both the TLU School of Music and that school's choral activities. He holds the Mary Gibbs Jones Chair in Choral Music. He departed the cold of Minnesota for Seguin, Texas, to attend Texas Lutheran College, as it was known in those days. He also spent a number of years as a professional actor and director before returning to music and completing his DMA in Choral Conducting at The University of Texas at Austin. He loves making music with TLU students and is especially committed to providing them with the opportunity to use their musical talents as a form of outreach. He is passionate about the music of our time and has published numerous articles on American composers such as Libby Larsen and Steven Sametz. He has studied composition with some of his favorite composers: Stephen Paulus, Chen Yi, Alberto Grau, and Steven Sametz. When he's not teaching, doing paperwork, or in meetings, he takes care of his chickens ... seriously! They are the best pets on the planet ... except, of course, for his cats, Michelangelo and Frida Kahlo.*

Annette Citzler *began teaching economics at Texas Lutheran in 1977. An avid reader, completing seventy-five or more books per year, she writes a daily journal she calls "Gratitudes". Dr. Citzler has taught the freshmen experience course many times since it began in 1984, and she enjoys discussing the nature of our human experience with her students at all levels. Besides economics, she teaches finance and is the faculty director for the international studies major. She has led students on international study experiences of four weeks or longer to Mexico, Germany, and Liberia in West Africa. With homes in both Seguin and La Grange, Dr. Citzler is the primary care organizer (and on weekends the sole care-giver) for her wheelchair-*

*bound parents, both of whom are willing “guinea pigs” for new recipes which she culls from a collection of over one thousand cookbooks.*

*Casi Helbig has taught in the department of kinesiology since the fall of 2000, after receiving her PhD from Texas A&M University in College Station. While at Stephen F. Austin State University, she played four years collegiate volleyball. She went on to receive a master’s degree in physical education at Texas State University. Dr. Helbig instructs various classes in the kinesiology department including motor skill development, early childhood motor programming, adapted physical education, kinesiology capstone, motor learning, and contemporary wellness. She directs two service-learning experiences where the TLU community and the Seguin community come together for a common purpose. One involves movement programs at Faith Lutheran Preschool, and the other adapted physical education program for adults with intellectual disabilities. When not at work, she enjoys teaching Sunday school/ bible study to college students, running, cycling, lifting weights, traveling, and spending time outside with her husband, two daughters, and family.*

*Judith Dykes-Hoffmann is an associate professor of geography and has taught at TLU since 1997. She continues to dive headfirst into life! When not teaching geography she can often be found dreaming about or planning her next global travel adventure—carpe diem! Her favorite travel memory is the time she put her hand into the Indus River, high in the Himalayas while traveling through Kashmir, India. Her love and passion for learning about the world was a gift given to her by her father who taught her to listen to and be curious about the great outdoors. She spends as much time as she can outside hiking, bird watching, and listening to what nature has to say.*

*Pamela Johnston has been a professor in the department of English & communication studies since 2001. She has also served as director of the Center for Women’s Studies since 2006. She grew up in the Pacific Northwest and never once imagined herself living in Texas, although she has learned to embrace her inner Southerner over the years. Her career as a writer got off to an early start, with the posting of her poem, “Leaves,” on her first-grade teacher’s bulletin board. Dr. Johnston is now the author of a novel, Little Lost River; a food blog, The Family Foodie; several short stories, and many articles on teaching and education. When she isn’t teaching, writing, cooking, or some combination of the three, she enjoys running and spending time with her family.*

*Robert Jonas was born a long time ago in a galaxy far far away (OK, Michigan). He got interested in science through comic books and science fiction (and a few good teachers along the way). He enjoys the interaction among faculty and students at TLU, and has been fortunate to team-teach with fellow authors Drs. Baer and Toledo among other faculty members. He has a wife who tolerates his sports addictions; he likes to brew beer (an example of applied microbiology), and has run the Bulldog 5K since 1992.*

*Lucas Land is an eco-theologian and urban farmer. He is avoiding growing up by constantly learning and trying new things. He currently runs a socially responsible business which transforms the places where people live, learn, work, play and pray into beneficial and sustainable spaces by planting gardens, native landscapes, rainwater harvesting, small-scale livestock and compost systems. He is also part of a bilingual, diverse, intentional Christian community called Hope Fellowship. He lives with his wife, Sarah, three children, Asber, Lydia and Dorothy and flock of chickens in Waco, TX.*

*John McClusky is a professor of chemistry and associate provost at TLU. As a chemist he helps students learn to solve organic and polymer chemistry problems in the classroom and in the laboratory. His most important goals as a teacher are to help students become lifelong learners and recognize that they are capable of much more than they realize. As associate provost he helps solve problems to strengthen TLU for the benefit of its students. His wife, Stacey Ward, teaches nursing and also solves problems by managing diabetic patients in intensive care units. His hobbies are reading, hiking, as well as designing and building electronic circuits and computer programs to use with his telescope to solve problems in astronomy.*

Jim Newberry is professor and chair of the departments of education and kinesiology, and directs the Kieffer motion analysis lab at TLU. His interest in the physiological and ethical demands of climbing began in Georgia while teaching a section of high altitude physiology with a colleague who was an avid climber. When the book "Into Thin Air" was published by Jon Krakauer in 1997, a fascination developed regarding the sometimes irrational pursuit of extreme challenges in sport and recreation. Dr. Newberry has enjoyed teaching many sections of honors reading at TLU combining Krakauer's book with applied ethics. In addition to interacting with students, he enjoys experiencing life with his wife and two sons, traveling in the Texas Hill Country and the northern New Mexico town of Red River, as well as hanging around bookstores drinking coffee and exploring ideas. He is extremely fearful of heights.

Naomi Shihab Nye is an acclaimed poet, whose writing process opens her to discover something new in the places, things, and activities of everyday life. Ms. Nye serves as a chancellor of the American Academy of Poets. She lives within two cultures and draws on both to create work for both adults and children. She has published many books and won numerous awards. "Mind as a Bucket" was commissioned especially for this edition of *The TLU Reader*.

Kyle Olson teaches in the department of visual art at TLU. He created the cover on this book and some of the images in his chapter. Kyle was inspired by comic books as a child but found that the spaces between the panels were the most exciting elements they contained. There the reader's mind could take the story anywhere. He hates having to reduce himself to a single paragraph as his editors have demanded and asks that you instead think of him with his wife and son in their backyard, enjoying the surprises found while looking under all of the rocks.

Plato is one of those people like Oprah or Bono who is so famous he only needs one name. He studied with Socrates and later wrote dialogues that were based on what Socrates had taught. He is the one author in this list whom you cannot meet on our campus this semester. However, nine out of ten scholars agree that if he were alive today, he would be corrupting the students of TLU with his unsettling ideas and his stylish toga.

Terry Price teaches design and technology in the department of dramatic media. His split personality has become more apparent since he took on the role of director of emerging media for the university. Among his research interests are the following: the theatrical space's relationship to place, society and emerging media, exploring connections between art and science—specifically connections between theatre and physics, the use of advanced technologies in Baroque theatres in Central Europe as well as theatre as a tool for political change in Central Europe. All of those research topics were selected because they required travel, one of his passions. His biggest passion, though, is Tar Heel basketball.

Kristi Gold Quiros is vice president and dean of student life and learning and an alum of TLU. She did her graduate work in psychology after which she became a Licensed Professional Counselor (LPC) specializing in helping those with substance abuse and addiction issues. Her clinical work was within in-patient treatment facilities and the prison system where she worked with repeat felony offenders. In 1994 she returned to TLU to teach in the psychology department, and became dean of students in 2003. Away from work she loves to read, create art, go to movies, and pretend her athletic skills are the same as when she was 20. Kind enough to overlook this delusion (and probably many more) is her husband Ron (also TLU alum), son Joshua, and daughters Taylor and Makenzie. Three dogs, one cat, and the occasional fish round out the Quiros clan which resides in Seguin.

Betseygail Rand is on the faculty in the math department. She enjoys teaching a wide range of classes, although she doesn't find summer vacation half bad either. Her research interests include tiling theory and how students learn to write proofs. In her free time, she plays soccer, and writes songs and children's books. She lives with her husband Jamaal and their small children, and consequently does not play much soccer, nor write many songs or children's books, anymore. Still, she wouldn't change a thing.

Martha Rinn made a life-changing decision in 1987 to attend graduate school and become a librarian after working in accounting for twelve years. This decision, while driven at first by a keen enjoyment of reading, blossomed into a full-blown love of research and the overall life of information. As she has written in her essay, she feels she made the right decision. In the summer of 2010 she celebrated twenty years of service to TLU. Before becoming the director of the library in 2002 she held positions as readers' services librarian and library system administrator, and also served for a year as an interim associate dean. Over the years she has found many ways to enjoy the fruits of an excellent liberal arts undergraduate education. She and her husband enjoy camping, and on many of their excursions they have been known to play highly-unprofessional bluegrass music with a group of their extended family members.

Juan Rodríguez is an associate professor in the department of English & communications studies and directs the Center for Mexican American Studies whose mission is, among other things, to teach and promote the history and culture of Mexican Americans as part of a greater effort to better prepare our students for a multicultural world. He enjoys reading, writing, and research. An avid observer of both physical and human nature, he especially enjoys fishing and visiting with his children and grandchildren.

Phil Ruge-Jones teaches students about theology. He feels that laughter should be present in healthy learning environments and does his best to create it. His view of the world was decisively shaped by two years in Chile where he served as a pastorito. He is a Suzuki violin parent to his son, watches *The Office* and *Modern Family* with his daughter, and tells biblical stories with his wife. He has achieved double stars in all the races of MarioKart thanks to the addictive tendencies of his personality. His favorite aspiration is to fit the description he got off of a wine bottle's label and "dialectically bridge rusticity and sophistication" or, in other words, be earthy yet profound. This book was his idea.

Tiffany Sia is an assistant professor in the department of psychology. She also known as the Princess of Darkness because she is both legally blind and has an interest in some of the darker areas of psychology (prejudice, aggression, and substance abuse treatment). She is usually lurking in her Langner office between teaching classes in social psychology, developmental psychology (birth to death), human sexuality (yeah, there is a class) and psychology & life. She did her dissertation on prejudice and worked on improving substance abuse treatment in the criminal justice system before coming to TLU. She is glad to announce that college students are much better behaved than the criminal population. Her goals include enabling student to use psychology in a positive way to change their own and other people's lives. Favorite hobbies include knitting, Greek mythology, homebrewing, traveling, and creating experiments. Although she is well aware that everyone is a cognitive miser, she would still like people to reduce this tendency.

Melanie Thompson teaches business ethics and accounting. Among other responsibilities, she is responsible for TLU's accounting internship program. Melanie is a CPA with over twenty years experience in the practice of public accountancy. Active in her profession, she was the first woman to serve as presiding officer of the Texas State Board of Public Accounting and as president of the Texas Society of CPAs. In her personal life, Melanie is involved in her church and bible study fellowship. She loves life with her husband, Robert, and cat, RC. With two grandchildren, two sons, one daughter, two daughters-in-law, and one son-in-law, Melanie says life is never dull. In her advising role, she frequently tells students that we may not be able to see around the next corner in our lives, but God can. So trust him, take the life step you can see, explore possibilities, and never close doors until absolutely necessary.

Santiago Toledo is an assistant professor in the department of chemistry. He is a TLU alum who is grateful for the opportunity to come back to TLU and give back to the institution that gave him so much. Santi (as most people call him) is an inorganic chemist and enjoys admiring, investigating, and studying the properties of enzymatic reactions. Although a chemist at the core, Santi simply loves the beauty and elegance of the natural world, and every day is more amazed by its complexity and beauty. As a rookie professor he has embarked on an amazing learning quest of understanding how to best catalyze student learning. Santi is

*a native of Ecuador (best country in South America). As a good Ecuadorian he loves food, futbol, a good party, and his family. His family still lives far away and he deeply misses their presence. Santi loves life, learning, and a Friday evening in the company of his beloved wife Stephanie and good friends.*

*Tony Wagner is the first innovation education fellow at the Technology and Entrepreneurship Center at Harvard University. He is the author of five books on education, including The Global Achievement Gap.*

*Germaine Paulo Walsh is chair of the department of political science, sociology, and geography, and former coordinator of the freshman experience course. Her research interests include ancient and Christian political thought, and the nature of gender difference and its relation to politics. She teaches political philosophy and American politics, including a special topics course on the political philosophy of J.R.R. Tolkien, author of "The Lord of the Rings". She enjoys spending time with her husband and four children.*