



**PDHonline Course R153 (5 PDH)**

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# **Ethics, Engineering, and Leadership**

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## **Ethics, Engineering, and Leadership**

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### **Course Content**

*The shortest and surest way to **live with honor in the world**, is to be in reality what we would appear to be; all human virtues increase and strengthen themselves by the practice and experience of them.*

---Socrates (Philosopher)

*Leadership is the art of getting someone else to do something you want done because he wants to do it.*

---Dwight D. Eisenhower (General and U.S. President)

### **Military Engineers**

Living in reality, with honor, with good ethics, and with great leadership is what this course is about. Our theme is guided by the quotes from Socrates, the father of ethics, and Eisenhower, the great American general during World War II, above.

This course was developed from my presentation to the San Antonio Post of the Society of American Military Engineers. The Society of American Military Engineers (SAME) was founded in 1920 and is an organization for military engineering professionals. Its mission is “to promote and facilitate engineering support for national security by developing and enhancing relationships and competencies among uniformed services, public-and-private-sector engineers and related professionals, and by developing future engineers through outreach and mentoring.” SAME’s vision is “to be a premier global engineering organization leading the professional and personal growth of all members in support of military readiness and development of solutions to national security challenges.”

It was within the SAME mission and vision that I attempted to fit my presentation. Originally, I planned to present *The Right Choice: Applying Ethics and Leadership to Engineering*, R118 that I co-authored with my brother, COL

(retired) Bruce A. Brant for PDHonline.org. It quickly became apparent that I could not possibly fit the five hour PDHonline course into an hour luncheon presentation.

Necessity became the mother of invention and this course was created for SAME. In keeping with the Socrates, Dwight D. Eisenhower, and SAME mission and vision, I outlined three main parts: (1) Personal Ethics, (2) Engineering Ethics, and (3) Leadership lessons. These three parts serve as the core chapters for our course.

## **Personal Ethics**

It was the Greek philosopher Socrates, known as the Father of Ethics, who opined: “The unexamined life is not worth living.” **Because I believe that personal ethics is the cornerstone of all ethics that follow, it is essential that we delve into aspects of personal ethics.**

As an example of personal ethics, required but not maintained, Boeing CEO Harry Stonecipher, placed a top priority on ethics:

“One of Stonecipher’s top goals...was to put ethics front and center. He created an internal governance office...and **required every employee to sign an ethics statement...without integrity you cannot conduct business successfully...firing people who lack integrity is good business,**” according to the March 21, 2004 issue of *Business Week*.

*Business Week* reported that Boeing fired Harry Stonecipher, Figure 1, citing ethics and loss of confidence as the reasons for their action. What did Harry Stonecipher do to be fired?

*Business Week* quoted Stonecipher himself, **“I violated my own standards.”** Harry had an affair with another Boeing executive officer.



Figure 1 Harry Stonecipher *Business Week* 3/21/04

As the movie philosopher, Forest Gump, from the movie *Forrest Gump* said, “stupid is as stupid does!”

My point of this example is not to disparage Mr. Stonecipher (I do not even know him), but **to illustrate that even a high priority and an ethics statement may not be enough to prevent lapses in personal ethics. Moreover, Mr. Stonecipher does not set an example of good leadership. Employees simply do not trust a leader who says one thing and does another.** Obviously, the board of directors recognized that when they dismissed him.

Recently, I read the book *Truth Be Told*, by Larry King. He illustrated an ethical situation involving the great ex-New York Yankee catcher and sometimes philosopher, Yogi Berra. Yogi was posed the hypothetical question: what would he do if he stumbled upon \$1,000,000 in the street while nobody was looking? Yogi said, “I’d find the guy who lost it; and, *if he was poor*, I’d give it back.”<sup>1</sup> At first blush, Yogi’s actions would seem to be ethical. But, the answer would depend on the definition of poor. If someone lost \$1,000,000 in the street, the

argument could be made that person would hardly be poor. Thus, Yogi might keep the money, regardless. Personal ethics can be rather confounding.

For years, I have lectured that we must ***think, act, and be ethical*** in our behavior. Of course, this is easy to say and difficult to do.

Where do you start when you want to ***think, act, and be ethical***? I believe the place to start is with your life's priorities. Life's priorities will start you thinking about **your** life's priorities. In the PDHonline course, *The Right Choice: Applying Life's Priorities and Ethics to Engineering, R124*, I have written more in depth about life's priorities. However, I believe it is important to address life's priorities here as I did with SAME because it is fundamental to our ethical behavior.

To examine life's priorities, it is helpful to look at the "good life" and not just any "good life," but your "good life."

What is the "good life?" Plato looks at good this way, the idea of "the good" requires sufficient knowledge or nothing else will have value. Or, put another way, without knowledge of "the good," nothing else will have value. "[I]f we don't know it [good] even the fullest possible knowledge of other things is of no benefit to us...[y]ou certainly know that the majority believe that pleasure is the good, while the more sophisticated believe that it is knowledge."<sup>2</sup>

This idea of good becomes a source of all value in the world and has a moral and ethical significance. Socrates and Plato's idea of "the good" becomes the principle of **reality, being, knowledge, and truth**.

Further, Socrates and Plato would say that life is neither good nor bad by itself. A life could be either bad or good. Socrates and Plato's assessment is that we must know how to use our life in order to make it truly good. Moreover, we must have knowledge of what the good life really is.

We have a purpose in our lives. Aristotle identified this purpose by isolating our distinctly human activity. Only humans can reason and we must live and act according to our reason. Humans can reason toward the "good life."

However, there is a big difference between mere life, where one does not reason at all; and, the "good life," where one reasons well.<sup>3</sup>

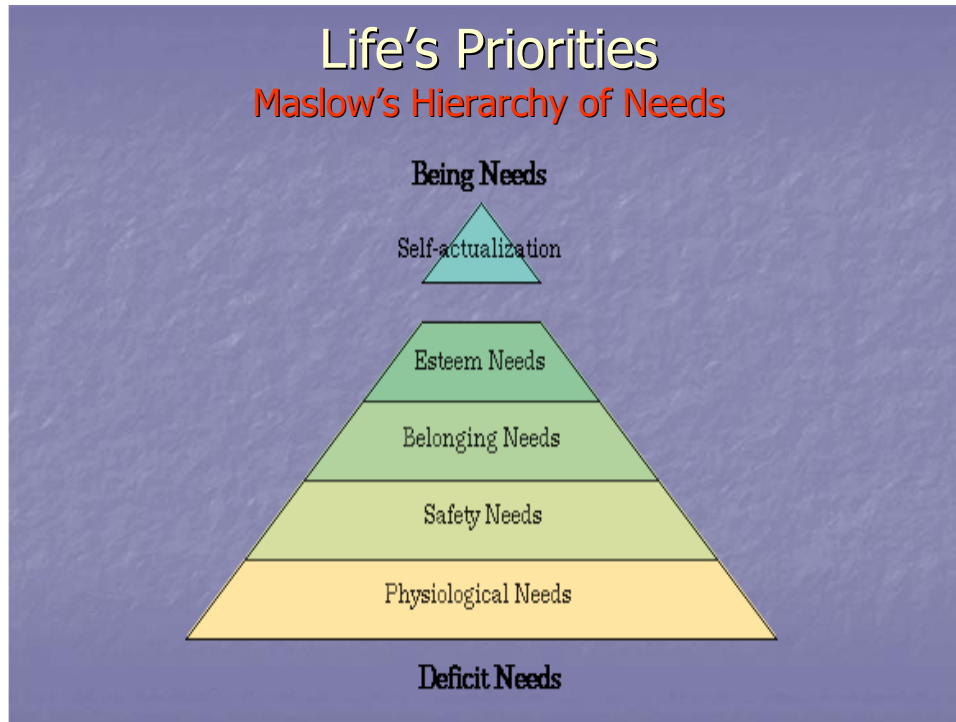
How about your good life? Philosophy Professor Patrick Grim<sup>4</sup> asks the questions, when you were five years old and someone offered you a cookie, which cookie did you choose? Most likely you wanted the best cookie. If you went to a bookstore to buy a used book, which book did you choose? If you are like me, you choose the best book. These things are easy to choose.

**However, if you have a life to choose --- and you do --- you will want the best life, the good life. What would that best life look like?** Plato and Aristotle answered these questions. For Plato the best life, the good life, is a life of character. For Aristotle the best life, the good life, is a life of virtue.

We will visit this later, but first we must ask ourselves and yourself: if you had something very precious that has to be spent and can **not** be held, you will want to spend it well! You do have something very special that has to be spent. **You have your life---you will want to spend it well!**

How do you spend your life well? Consider life's priorities and ethics as you spend your life. Often people are too busy in their daily lives, going to school, taking kids to school, or just making a living, to reflect on life's priorities. Of course, life's priorities have to consider life's needs. Psychologist Abraham Maslow determined life's needs set out in his Hierarchy of Needs pyramid.<sup>5</sup>

**The theory behind Maslow's Hierarchy of Needs pyramid is that as humans meet their basic needs, they will graduate to sets of higher needs that proceed to a prescribed hierarchy of needs.** Based on his experimentation and work with monkeys, Maslow determined that monkeys had basic needs over other needs. The basic needs had to be fulfilled before more advanced needs could be satisfied. Thus, breathing was a basic need that had to occur before thirst. Thirst occurred before hunger. The basic needs also applied to humans. Maslow saw human needs like a rung on a ladder of the pyramid. The most basic needs at the bottom are physical or physiological needs as shown in Figure 2.



*Figure 2 Needs*

The basic physiological needs are air, water, food, sex, and homeostasis (the property of a living system to regulate its internal environment which strives to maintain a stable, constant condition or equilibrium).

When the physiological needs are met, humans progress to the next step or level, Safety Needs. Safety Needs concern physical safety and security needs for finding safe circumstances, stability, protection, and a need for structure or order in a social system. The terrorist attacks on the World Trade Center on 9/11/01 and our response illustrate our Safety and Security Needs.

After both physiological needs and safety needs are met, the next step or group is the Belonging Needs. The Belonging Needs include love, affection and belongingness. These needs overcome feelings of loneliness and alienation.

The fourth level of the needs pyramid contains the Esteem Needs. The Esteem Needs require recognition by other humans that give results in feelings of prestige, acceptance, and status. Self-esteem is important and results in feelings of adequacy, competence, and confidence. If you have ever lost a job, you realize very quickly how important the Esteem Needs really are. These self-esteem



feelings overrule discouragement and inferiority, which can take place when esteem is low or missing.

Maslow's first four levels are referred to as Deficiency Needs or D-needs. The D-needs are needs that must be met (survival needs). Whereas, the top self-actualization level is a growth level or Being Needs level (B-needs). The Being Needs are continually shaping our behavior and consist of morality, creativity, spontaneity, problem solving, lack of prejudice, and acceptance of facts.

It is the B-needs, self-actualization, level that we are primarily interested in this course. Virtually everyone taking this course has met all their D-needs.

Maslow used a qualitative method of biographical analysis for persons he classified as self-actualizers. The self-actualizers were studied: (1) some from history, i.e., Abraham Lincoln, Thomas Jefferson; (2) some from people Maslow knew; and, (3) others, mostly college or post-college subjects. He researched and studied their biographies, writings, acts and words developing a list of characteristics that fit these self-actualizers.

Maslow determined self-actualizers were reality-centered, problem-centered, with a different outlook on the means and ends. Personal relationships were different as were their social interests, compassion, and interest in humanity. The self-actualizers had humility and respect toward others. **Maslow discovered his self-actualizers had strong ethics or ethical standards which seemed spiritual in nature, but not really associated with religion as such.** These self-actualizers were creative and inventive with abilities to see ordinary things differently.

**Self-actualization, then, is reaching one's fullest potential.** Self-actualization was on a daily, moment to moment basis. Some of Maslow's self-actualization traits were:

- Experiencing with full absorption, leaving behind our defenses and shyness, childlike innocence.
- Awareness of life as a series of choices---one way advances us toward personal growth and the other backward in a regression.
- Being aware of self and listening to your inner voice, rather than the voice of a parent or society.
- Deciding to be honest and taking responsibility for your thoughts and feelings.



- Willingness to work and apply yourself in order to make the most of your abilities in your occupation.
- Being willing to see other people in their best light.

Moreover, Maslow told his students that doing only as much as necessary to be competent was a recipe for deep unhappiness in life. They would be evading their own capabilities. Maslow saw the ideal workplace as a reflection of the self-actualized person’s creative nature with a childlike inspiration to create; plus, the maturity to see the vision through to reality.<sup>6</sup>

**Our fullest potential is our goal with character and ethics to guide us.**

With Abraham Maslow’s Hierarchy of Needs firmly in place, let us make your plan and prioritized list of your values. **Virtually all psychologists and self-help experts insist on writing out your thoughts.** I will give you a list of good things in life along the lines of what I think might be a list of good things. The list is only meant to give you ideas and be a start for your list. In looking at the suggested list ask yourself the question, “would I like this in my life?” Hopefully, the answer is “yes,” but if not scratch it off the list and add what you want. We will call this our “List of good things in Life.”

So, here is our “List of good things in Life.”

- |                       |                      |                          |
|-----------------------|----------------------|--------------------------|
| Accomplishment        | Freedom              | Recreation               |
| Intelligence          | Fame                 | Honesty                  |
| Love                  | Good Education       | Adventure                |
| Fun                   | Big House            | Nice Car                 |
| Money                 | Entertainment        | Creativity               |
| Contentment           | Leisure              | Knowledge                |
| Fulfilling sex life   | Enjoyment            | Wisdom                   |
| Good Job              | Happiness            | Generosity               |
| Children/Family       | Spirituality         | Self-discipline          |
| Long Life             | Romance              | Talent                   |
| Travel                | Safety               | Good Health              |
| Recognition           | Friendship           | Respect                  |
| Meaningful Work       | Vacations to Europe  | Contributions to Society |
| Writer                | Patent on Invention  | Pres. of Tech Society    |
| Mayor of Town         | Engineering Fellow   | Engr. without Borders    |
| Volunteer             | Teacher or Professor | Peacemaker               |
| Motivator/Big Brother | Environmentalist     | Artist                   |

Musician	Mentor	Coach
Curious	Open-mindedness	Love of Learning
Humility	Bravery	Persistence
Integrity	Vitality	Kindness
Social Intelligence	Citizenship	Fairness
Leadership	Forgiveness/Mercy	Modesty
Hope	Humor	Assessment
Fidelity	Charity	Responsibility
Prudence	Appreciation Beauty/Excellence	Gratitude

The above list is just a start for your list. Part of the list came from Dr. Grim's lecture on Life's Priorities.<sup>7</sup> I have provided several items that might pertain to engineers. Some items came from Hyrum Smith's book, *What Matters Most-The Power of Living Your Values*,<sup>8</sup> while others came from Christopher Peterson and Martin Seligman's book, *Character Strengths and Virtues-A Handbook and Classification*.<sup>9</sup>

**The idea here is for you to develop your list that represents a portrait of your priorities and character traits for your own life. Physically writing out your list is valuable to help you organize and prioritize your list later.** This list is not complete so take enough time to develop your list. Write out as much as you can think of as you develop your list. Once you have completed your list you are ready to start step two.

Step two for your list organizes your list into a useful structure. There are items on the list that can be grouped or classified rather than left by themselves. Take for example: fame, recognition, and respect, which might fall into the same group or class. You will want to group your priorities to make them easier to work with. Recognition might be a group topic with respect and fame as sub-groups under recognition. Work with your list to make groups and sub-groups, remembering you can still add or subtract from your list of your priorities.

After you have separated your list into major groupings, you have started to understand what it is you value in your good life and life's priorities. Another group might be love, which might include friendship and romance. Now you have two groups: Recognition and Love. Maybe you have another group that is primarily talent with sub-groups creativity and talent. This yields groups of Recognition, Love, and Talent with sub-groups. Weave your way through your list in this fashion.

Your challenge is to find what you want your life to look like and what your priorities are for your good life. So, think of these groups the way you want to think of them.

Step three is to rank your groups of priorities. Professor Grim suggests using the test Plato uses in his *The Philebus*. Say you have (1) love, (2) recognition, and (3) talent as important groups in your list. Your list might also include (4) character strengths and virtues, such as wisdom and knowledge, courage, humanity, justice, temperance, and transcendence. The Platonic test asks if you could have only one group, what would it be?

Would you go for a life of love, to the exclusion of recognition, talent, and character strengths and virtues? Or, would you choose a life of character strength and virtue sacrificing love, recognition, and talent? Perhaps you want talent, and you would develop talent over the other priorities in your life.

Unfortunately, under Plato's test you only get to choose one group. But, Plato's test forces you to think about your top priority. In my lectures, I ask my attendees to vote on their top priority with a show of hands. How would you vote if you only have one group to choose?

**Fortunately, we do not live in an all or nothing group of our life's priorities.** You get to choose which groups you want for your life, your good life. However, just choosing really is not good enough. [You need to rank them.](#)

We all know percentages, so we can start with 100 percent and divide by our groups. If we have four groups, we could have 25%, 25%, 25% and 25%. But, that might not be your life, the life you want. Perhaps you want Character Strength/Virtue to be top at 40%, Talent second at 30%, Recognition third at 20%, and Love last at 10%; or, maybe in your life, Love should be top at 50% and the rest at lower percentages. So, rank your groupings.

[By doing this exercise you have identified, grouped, and ranked your life's priorities for your good life. You have actually evaluated how you want to shape your life in a systematic method, rather than just reacting to what life throws at you.](#)

**The value of what you have done is that you have established what is really valuable in your own life.** There are at least three reasons why this might be

important to you. First, people can work for years to achieve certain things, i.e., a good job, a good position, a house in a good area. After decades of effort and sacrifice they achieved their goal. Yet they end up saying, “is that all there is to life?” They stagnate. When people get to this stage, I have seen them very vulnerable to divorce. They want something different, but they don’t know what it is they want.

A second reason to prioritize your values and good life is that some people think they want something to the point of devoting all their effort to get what they want, and make enormous sacrifices in order to achieve something, that in the end they do not really want. I have personally seen business owners, tell me it just is not worth the headaches of running a business and they would just like to get a job and be like “normal” people. They have achieved their dream of running a business, but it has become more of a nightmare than a dream.

A third reason to prioritize your values is that you need to examine what it is you really value and determine the routes to get what you want out of your good life. It may be that what you really want out of life is to hunt, fish, golf, and have a family. Working twenty hours a day to create wealth may be at odds with your life’s priorities of hunting, fishing, golfing, and having a family. You do not need a lot of money to have your good life. On the other hand, it may be that you want to own your own business, take vacations to Europe, have a big house, and do not care about hunting, fishing, or golfing. It may be your priority to achieve success by earning enough money to enjoy what money can buy, while still being ethical. Or, you may want something in between.

**What Matters Most** At least you have given your life priorities some thought. I believe you can go a little further for yourself. Hyrum Smith in his book *What Matters Most-The Power of Living Your Values* asks, “**What am I going to do with the rest of my life?**”<sup>10</sup> In his workshops along with his book, Smith requires you to identify on cards what really matters. Essentially, you have just done the same thing with your list of your life’s priorities, and your good life.

**Smith contends life’s real fulfillment comes when you honestly answer: “What really matters most to me? What would I really like to accomplish? What legacy would I like to leave behind?”** Your challenge is to answer these questions, which you have on your list of life’s priorities, but then put them into action every day.

**Governing Values** Smith begins his chapter on governing values with a quote by Deepak Chopra. I believe Deepak Chopra's quote is so true and succinctly put that it could well be the single most important point you take from this course. Some theories of the collapse of the Roman Empire prove historical precedent for Deepak Chopra's quote:

**“Without values there is confusion and chaos. When values disintegrate, everything disintegrates. Health disintegrates, poverty attains dominance over affluence, societies and civilizations crumble. When we pay attention to these values that society has always held sacred, then order emerges out of chaos, and the field of pure potentiality inside us becomes all-powerful, creating anything it desires.”**

Smith defines governing values as **“what we believe to be of greatest importance and of highest priority in our lives.”** Our governing values lie at the center of who we really are and are a core part of our being. **What makes governing values difficult, and our ethics, is our inability to give hard and fast rules that work for every occasion.** Some of our values or ethics may represent character traits made up of honesty, compassion, decisiveness, or generosity that have come to have special meaning or desirability in our culture and other cultures. Other values or ethics may reflect our attitudes about people or other aspects of our lives, for instance, being a loving partner, caring for people, appreciating nature, having faith in a higher power, to having freedom of action and thought.

**Think about your “good life” and what it is you value. Re-assess your “good Life” and what you value as you go forward in your life. Re-visit often.**

**Happiness** Some might disagree that happiness belongs on the “list of good things in life” because it is hard to define and is too variable. I believe happiness should be on the list and have written a one hour PHDonline.org course entitled “The Right Choice: Applying Ethics and Happiness to Engineering” R117. It is a popular course; thus, there might be some agreement.

How many of us want to be happy? Aristotle discussed and shaped happiness in his book, “Nicomachean Ethics” where he introduced the good for man and what we call “happiness”:

**“[H]uman good turns out to be activity of soul in accordance with virtue, and if there are more than one virtue, in accordance with the best and most complete.**

But we must add ‘in a complete life.’ For one swallow does not make a summer, nor does one day; and so too one day, or a short time, does not make a man blessed and happy.

....

**Will not the knowledge of it [happiness], then, have a great influence on life?** Shall we not, like archers who have a mark to aim at, be more likely to hit upon what is right? If so, we must try, in outline at least to determine what it is...”

Among other things, Aristotle studied happiness or eudaimonia, mostly translated as happiness. Aristotle started with human intelligence and understanding reality. He used *logos* or reasoning to figure out reality. *Logos* is the base word for the English word logic.

It is an interesting concept of understanding reality. It seems as if the distinction between reality and fiction is being blurred today. Videogames, particularly war games, give a false sense of reality. These videogames simulate the action but are far from the reality of actual wounding or death. Moreover, the internet is a fantastic source of information. However, not all internet material is accurate and true. Thus, this concept of understanding reality may be more vitally important today than it ever was in the past.

Aristotle realized we must understand the world around us including different cultures, animals, the sky, and whatever was beyond our world. Aristotle lived in Athens, Greece, a seaport, which allowed him to study different cultures from far away through the sailors who came into the port.

Aristotle studied what caused our being that he referred to as the first principles of things. **Importantly for us, Aristotle discovered happiness was connected to ethics.** For our purposes, we will simplify our definition of ethics to actions of right and wrong.

Aristotle developed a model of happiness and ethics based upon the community or *Polis*, the base word for politics. Aristotle linked *Polis* and ethics together. The *Polis* or community includes the city, state, and country. The *Polis* must create laws, a constitution, and institutions to encourage each citizen to make good, what I’ll call *Right Choices*, and be excellent citizens. Citizens must be ethical toward the *Polis*. In like manner, the *Polis* must be ethical toward the citizens to encourage citizens to be virtuous and respect the rights of others.



What comes from Aristotle's model is a two way street where laws steer citizens in the *Right* direction. Ethics becomes the medium where ethics of the *Polis* is balanced by the ethics of the citizen. Both the *Polis* and the citizen must be ethical toward each other. If the *Polis* expects citizens to be ethical, the *Polis* must be ethical and vice versa. One does not work without the other.

Aristotle saw the family as a basic human unit, fundamental to society. For Aristotle the family was vital because the children of today are the citizens of tomorrow.

Aristotle's happiness is to be guided by *logos* or reasoning toward the just and true end. We would use virtues as guidelines to allow us to use our intelligence for our actions. These virtues would disallow ourselves to be overruled by our passions (wrongs) and allowing choices for good (right). **According to Aristotle, the key for happiness is that happiness must be identified, sought, and selected, remembering happiness depends on ethics.**

**The Problem of Ethics** Ethics seems so simple. Just do what is good and right. Why or how could ethics be such a problem? Unfortunately, we live in a society that is generally hostile to the concepts of:

- Accountability--- a person, organization, or institution required to justify actions or decisions;
- Responsibility--- the state or fact of having a duty to deal with something; and,
- Discipline--- the practice of training people to obey rules or a code of behavior, using punishment to correct disobedience.

Moreover, this attitude is the result of a growing preoccupation with:

1. Individualism--- self-centered feeling or conduct, egoism
2. Diminished respect for authority
3. Acceptance of "relative morality" with the loss of common norms and values
4. Antagonism toward anything that might cause a sense of personal guilt.

If those are some of the problems of ethics, what is ethics about?

Ethics is about creating strength:

Inner strength

Interpersonal strength

Outer strength

Ethical living produces



Stronger people  
Stronger families  
Stronger communities  
Stronger organizations  
Stronger nations

Ethics keeps you out of trouble.

If we believe these things about ethics, what makes ethics so difficult?

Unfortunately, ethics does not have a formula or a fixed set of rules. Ethics is making *meaningful* decisions *purposefully* emulating the *Right Choice* of good. Ethics has developed from different norms of human conducts, whose attitudes and actions vary greatly and are difficult to measure.

**Three Main Schools of Ethical Theory** Volumes have been written on the schools of ethical theory. It is not our purpose here to flesh out all the details of each theory, but only to give a brief overview of the three schools of theory that predominate.

1. Deontological or duty ethics---is based upon a reasoned duty and obligation, and expects persons to know through reason what their duties and obligations should be and how they should be practiced. In philosophy, it is study of the nature of duty and obligation and is associated with Immanuel Kant.
2. Consequential ethics or consequentialism---focuses on the consequences of one's actions. In philosophy, it is the doctrine that the morality of an action is to be judged solely by its consequences. A subset of consequential ethics is utilitarian ethics or utilitarianism, which espouses the greatest good for the greatest number of persons. It can also be said that utilitarianism is the doctrine that an action is right insofar as it promotes happiness, and that the greatest happiness of the greatest number should be the guiding principle of conduct. Associated philosophers include Jeremy Bentham and John Stuart Mill.
3. Virtue ethics---subscribes to Aristotle's ethics. Aristotle's ethics depends on individual character, examination of one's self, and provides practical guidelines to develop one's self. In philosophy, it is behavior showing high moral standards and a quality considered morally good or desirable in a person.

Although not strictly a school of ethical theory, **The Golden Rule**, is the one common thread that ties ethics and religion together around the world. [The](#)

Golden Rule is perhaps the single most important religious and ethical standard of morality and virtue the world has to share. Different versions between religions set the same standard:

Christian: “Do to others as you would have them do to you.”

Islam: “No one of you is a believer until he loves for his neighbor what he loves for himself.”

Judaism: “What is hateful to you, do not do to your fellow man. This is the entire law.”

Virtually, all other religions’ versions of “The Golden Rule” are similar.

**Six Core Ethical Virtues or Values** The core engineering virtues and values from my lectures have developed over the years and lectures. I recall one of my first lectures for engineering students at University of Texas at San Antonio--- I left **Integrity** out of the list of values and virtues. After class, a student just out of the military came up to me and said, “Sir, I believe that integrity should be in your list.” My response was, “you are right and thank you.” Ever since, integrity has been at the top of my list. The list is not without argument, but I believe most engineers would go along with the list. I mention these six core ethical virtues or values for you to ponder and think about:

### 1. Integrity

- Wholeness
- Character
- Adherence to ethical principles
- Exercising good judgment in professional practice
- Being true to yourself

### 2. Honesty

- Truthfulness
- Fairness
- Sincerity
- Openness
- Transparency

### 3. Fidelity

- Faithfulness to clients

- Allegiance to the public and employer
- Loyalty to the profession

#### **4. Charity**

- Kindness
- Caring
- Good will
- Tolerance
- Compassion/mercy

#### **5. Responsibility**

- Reliability/dependability
- Accountability
- Trustworthiness
- Competency

#### **6. Self Discipline**

- Acting with reasonable restraint
- Not indulging in excessive behavior

With the six core ethical virtues or values in mind, let us turn to what I call “The Problem.” I have pictorially set out the problem to show the opposing forces that pull from the middle which would be in balance. Essentially, we have the individual pulling against society and vice versa. Moreover, there is the classic battle between good and evil. This is shown in Figure 3.

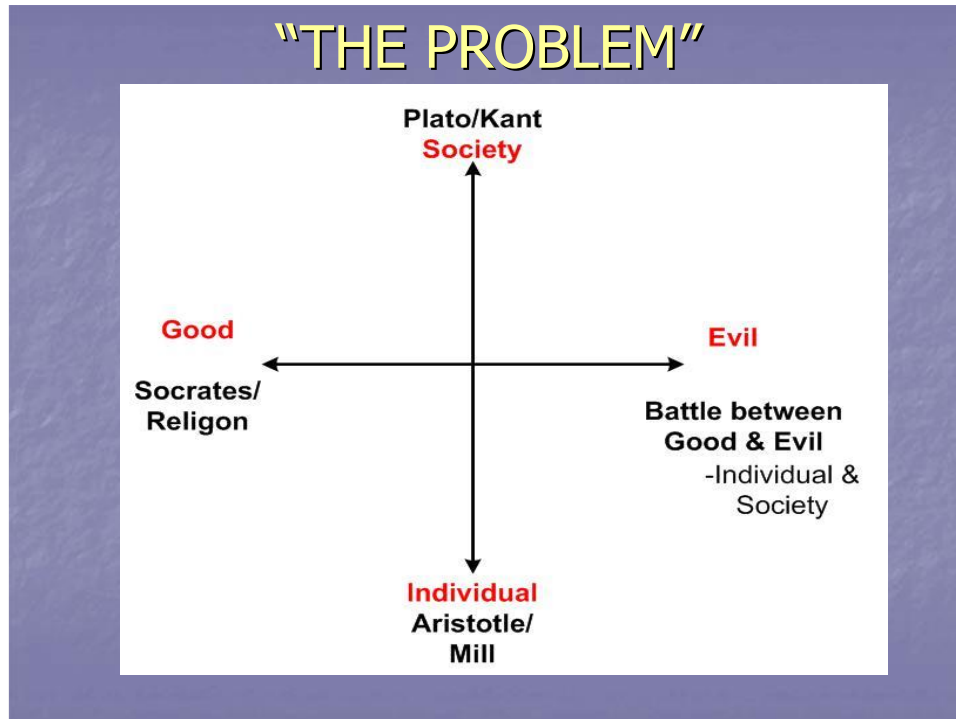


Figure 3 "The Problem"

In many of my lectures and at SAME, we tested "The Problem" with a series of questions and votes. Interestingly, it does not matter if I am speaking to a lecture hall of 200 students or around a conference table of 12 people, we can vote on the questions. These questions look at "The Problem" and the different directions it is pulling us---society versus individual and good versus evil. I typically choose Hitler as the example of evil. Let us take a look and test "The Problem" by trying to honestly answer these questions:

1. Murder, which I will define as killing an innocent human being. Do you believe murder is wrong? Nearly 100% of the people answering this question agree murder is wrong.
2. Do you believe in the death penalty for murder? My informal polls during my lectures show about 10-15% oppose the death penalty.
3. Do you believe in the military at war killing combatants? Nearly all agree it is OK.
4. Do you believe the military at war should kill civilians? About 40% of those I poll say the military should not kill civilians.
5. Do you believe the military at war should kill civilians, if they are munitions workers? My polls jump up to close to 100% saying it is OK.

6. Do you believe in certain circumstances abortion is right or always wrong? This question splits my polls at 50/50.
7. Are nuclear plants good or bad for society? About 90% answer good.
8. Are nuclear plants safe? The number drops down to about 80%.
9. How many in my lectures have healthcare? Almost everyone in my lectures has healthcare.
10. Should healthcare be affordable for everyone? The response is virtually unanimous that it should.
11. Do we owe a duty to keep the environment clean? Again virtually all polled in my lectures answer yes.
12. But change the question to: Does the environment belong to us or do we belong to the environment? The response is about 60/40 in favor of we belong to the environment.

These questions are just a sample of “Test the Problem” questions that let us know that even a fairly aligned group of engineers or engineering students have **differences of opinion on fundamental ethical questions**. The purpose of the questions was to show that opinions of good and evil vary as do opinions regarding rights of individuals and those of society. Again, ethics is a system of right and wrong that varies or is uncertain.

The idea is that we must have a common ground to build a foundation for our ethics.

**Doing the Right Thing** Doing the right thing feels good. Although I had written in my PDHonline.org *Happiness course*, that good ethics, doing the right thing makes you happier; I only had subjective not objective proof. However, I did find that good ethics reduces stress.

You can reduce stress through personal ethics. Scientific evidence proves that personal ethics reduces stress. *Affirmation of Personal Values Buffers Neuroendocrine and Psychological Stress Responses* in the journal of *Psychological Science* reports the first evidence that an experimental intervention involving the affirmation of personal values lessens neuroendocrine and psychological stress responses. Value affirmation participants had significantly lower cortisol responses to stress tasks.<sup>11</sup> Dr. Shelley E. Taylor, one of the researchers, confirmed in personal correspondence that their experimental evidence was another reason for developing personal ethics and values.<sup>12</sup>

Moreover, I believe you need a personal commitment to *think, act, and be ethical*. I urge you to write your own Personal Honor Code. The service academies have had honor codes since they were created. **An honor code will crystallize a fundamental commitment to ethics.** Your honor code does not have to be elaborate. It is probably better to keep it simple. It is also better to write it out. Start with “I will \_\_\_\_\_.” A simple version might be “*I will not lie, cheat, or steal, nor tolerate those who do.*” **If you write this out and sign it, you will feel better about yourself.** And, you now have a personal honor code and a commitment to good ethics. Re-visit it from time to time.

Coincidentally, an article in the Boerne, Texas, *Boerne Star* newspaper discussed the Geneva School of Boerne’s Honor Code and pledge. The Geneva School of Boerne is a Christian school that educates through high school. The Geneva School’s Honor Code in part states: “*As a student leader, I promise to abide by all school policies. I will not lie, steal, or cheat, nor tolerate these behaviors by my classmates...*” Surely, if the high school students have a personal honor code, we engineers can have a personal honor code.

This is a commitment to personal ethics.

## Engineering Ethics

There are many engineering ethics codes for the many engineering societies as well as company ethics codes and government ethics codes involving the government. The American Society of Mechanical Engineers (ASME) has their ethics code at <http://files.asme.org/STLLC/13093.pdf> and requires ethical practice by each of its members using its code. The American Society of Civil Engineers (ASCE) has a similar code of ethics at <http://www.asce.org/Leadership-and-Management/Ethics/Code-of-Ethics> and it is an enforceable requirement of members to report violations. Moreover, it is phrased in terms of a duty to report violations. The Institute of Electrical and Electronics Engineers (IEEE) commit themselves to the highest ethical and professional conduct and agree to their IEEE Code of ethics at <http://www.ieee.org/about/corporate/governance/p7-8.html> .

On the national level, the National Society of Professional Engineers (NSPE) has an ethics code at <http://www.nspe.org/Ethics/CodeofEthics/index.html> . NSPE has an excellent set of Board of Ethical Review cases at <http://www.nspe.org/Ethics/EthicsResources/BER/index.html> .

When I presented to the Metal Building Manufacturers Association's Researchers' Symposium entitled, *Engineering Ethics and You*, we used the ethical problem of the CitiCorp Building. The CitiCorp Building has an unusual design, four columns at each face or center rather than the usual design of columns at the ends. Moreover, the first floor started at the ninth story because of a church that it was built over. **A unique set of ethical problems surfaced with the structural engineering.**

The building met all codes and inspections. However, it was calculated to be unsafe after construction due to wind loadings different from code requirements. The structural engineer, William LeMessurier, risked his firm and his money to go back in after the fact and construct structural bracing while the building was occupied. The construction was done largely in secret to avoid panic. Although he kept safety paramount for the building, many thought he had a duty to inform the public. I believe he acted ethically, safely protecting the public. This problem is NSPE case 98-9 at <http://www.nspe.org/resources/pdfs/Ethics/EthicsResources/EthicsCaseSearch/1998/BER98-9-app.pdf>.

At the Symposium the vote on the ethics of William LeMessurier was split on this problem; however, the majority believed he acted ethically despite the presentation of the NSPE case 98-9.

In spite of my disagreement with case 98-9, NSPE has an extensive and thorough library of ethics cases by year that is worth reviewing for cases that might touch on your own situations.

States have similar societies of professional engineers. For example, Texas has the Texas Society of Professional Engineers (TSPE) at <http://www.tspe.org>. TSPE has adopted the NSPE Code of Ethics for its board, chapters and members.

**Useful Purpose** My personal feeling is that you are in trouble when you have to go to an ethics code. It should only be a source of verification. I believe personal ethics is paramount and you should *think, act, and be ethical*. The core values or virtues and the golden rule should put you in good stead. However, there are useful functions of ethics codes such as:

1. Educate new persons with guidelines based on experience and alert them to ethical problems in their field. New persons can be alerted to ethics codes that are applicable to them; thus, setting a foundation.



2. Narrow or bracket difficult problem areas. The NSPE case studies do an excellent job of recognizing and bracketing past ethics problems.
3. **Minimize governmental regulations by voluntary code compliance.** This has become even more important in light of the Sarbanes-Oxley Act on the ethics of the financial markets. Criminal penalties are lessened if companies have an ethics code.
4. Serve as a starting point for ethical debate. As with my presentation to the Metal Building Manufacturers Association's Researchers' Symposium, the NSPE case 98-9 stimulated a lively discussion centered on engineering ethics.
5. Reflect a wide range of character traits for a professional. This is true for a wide range of ethics codes, although some are more so than others.

These useful functions can serve us well when we periodically review them and keep them in mind.

**Legal Distinction** There is a legal distinction between the ethics codes by the engineering societies and company ethics codes and those ethics codes passed by state law or federal law. The difference lies in the penalties. The societies can expel violators from the society, whereas the state law or federal law can strip violators of their license to practice, fine violators, or in exceptional case prosecute criminally.

For example, the Texas penalty:

**§ 1001.552. Criminal Penalty**

- (a) A person commits an offense if the person:
- (1) engages in the practice of engineering without being licensed or exempted from the licensing requirement under this chapter;
  - (2) violates this chapter;
  - (3) presents or attempts to use as the person's own the license or seal of another; or
  - (4) gives false evidence of any kind to the board or a board member in obtaining a license.
- (b) An offense under this section is a Class A misdemeanor.

Obviously, the part that says (2) violates this chapter is the one that gives one pause for concern.

Let us take a quick look at the Texas Professional Conduct and Ethics sections which have the force of law as shown above. I do not believe Texas is unique in this regard and other states have similar codes or conduct.

The law emanates from the Texas Occupation Code, Chapter 1001, the Texas Engineering Practice Act, Chapter 137 Compliance and Professionalism, Subchapter C Professional Conduct and Ethics:

### **Rules**

[§137.51](#) General Practice

[§137.53](#) Engineer Standards of Compliance with Professional Services Procurement Act

[§137.55](#) Engineers Shall Protect the Public

[§137.57](#) Engineers Shall be Objective and Truthful

[§137.59](#) Engineers' Actions Shall Be Competent

[§137.61](#) Engineers Shall Maintain Confidentiality of Clients

[§137.63](#) Engineers' Responsibility to the Profession

[§137.65](#) Action in Another Jurisdiction

Let us look at a few of the sections that illustrate points we have been making.

#### **[§137.51](#) General Practice**

(a) In order to safeguard, life, health and property, to promote the public welfare, and to establish and maintain a high standard of integrity and practice, the rules relating to professional conduct in this title **shall be binding on every person holding a license authorized to offer or perform engineering services in Texas.**

(b) License holders having knowledge of any alleged violation of the Act and/or board rules shall cooperate with the board...

(c) A license holder shall promptly answer all inquiries...

(d) .... Professional engineers shall perform or directly supervise the engineering work of any subordinates

The section applies to every PE in the State of Texas, but since Texas is a reciprocal state other states enforcement actions are applicable in Texas.

#### **[§137.55](#) Engineers Shall Protect the Public**

(a) **Engineers shall be entrusted to protect the health, *safety*, property, and welfare of the public in the practice of their profession.**

(b) Engineers shall not perform any engineering function which, when measured by generally accepted engineering standards or procedures, is reasonably likely to result in the endangerment of lives, health, safety, property, or welfare of the public.

- (c) Engineers shall first notify involved parties of any engineering decisions or practices that might endanger the health, safety, property or welfare of the public. When, in an engineer's judgment, **any risk** to the public remains unresolved, that engineer **shall** report any fraud, gross negligence, incompetence, misconduct, unethical or illegal conduct to the board or to proper civil or criminal authorities.
- (d) Engineers should strive to adequately examine the environmental impact of their actions and projects...

**If there is a key point to be taken from virtually all ethics codes and the section above, the safety and health of the public is paramount. We as engineers are trusted and bound to keep the public safe and healthy with our engineering decisions.**

**§137.57Engineers Shall be Objective and Truthful**

- (a) **Engineers shall issue statements only in an objective and truthful manner.**
- (b) The issuance of oral or written assertions in the practice of engineering **shall not be:**
- (1) **fraudulent,**
  - (2) **deceitful, or**
  - (3) **misleading or shall not in any manner whatsoever tend to create a misleading impression.**
- (c) The engineer shall disclose a possible conflict of interest ...
- (d) A conflict of interest exists... reasonable probability... engineer's own financial, business, property, or personal interests may affect any professional judgment...

This section is very akin to the will not *lie, cheat, or steal* personal honor code we have discussed.

**§137.59Engineers' Actions Shall Be Competent**

- (a) **Engineers shall practice only in their areas of competence.**
- (b) The engineer... perform .... outside of the engineer's area of competence if...performed by qualified licensed professionals...
- (c) **The engineer shall not express an engineering opinion in deposition or before a court, administrative agency, or other public forum which is contrary to generally accepted scientific and engineering principles without fully disclosing the basis and rationale for such an opinion.**

Areas of competency are difficult ethical situations or dilemmas. We all have done enough engineering problems in school that looked easy to start with and

ended up very, very, difficult; and, engineering problems that looked extremely difficult to the point of almost giving up that all of a sudden became straight forward and solvable. We can be fooled by the initial aspects of the problem. Thus, competency may be difficult to determine in some cases.

**§137.61 Engineers Shall Maintain Confidentiality of Clients**

- (a) The engineer may reveal confidences and private information *only...consent*, or when required by *law or court order*; or...*threat to the health, safety or welfare of the public.***
- (b) The engineer shall not use...information regarding a client...or for the advantage of a third party.**
- (c) The engineer shall exercise reasonable care to prevent unauthorized disclosure or use of private information or confidences...**

The section above part (a) specifically illustrates the difficulty with arguments in the CitiCorp Building, William LeMessurier case. The first part of (a) requires confidences to the client, but the last part excepts for a *threat* to health, safety or public welfare. Conducting secret construction while the building was occupied and high wind collapse effecting a large public area were seen by some as violating ethical and/or legal standards.

The point of my making you go through the Texas PE Code is to illustrate the closeness and similarities of the legal provisions in an ethics code with other engineering societies' and company's ethics codes. I believe it also illustrates the personal ethical requirements. *The bottom line is these codes are personal.*

**Solving Engineering Ethics Dilemmas** John C. Maxwell is a leadership expert who has communicated his principles to Fortune 500 companies, U.S. Military Academy at West Point, NCAA, NBA, and the NFL. He suggested five factors that highlight the golden rule in his book, *There's No Such Thing As "Business" Ethics There's Only **One Rule** For Making Decisions.*<sup>13</sup> I have renamed Maxwell's five factors into the 5P's or 5 Precursors of ethical violations.

Oftentimes you do not know you are getting into ethical trouble until it is too late. The 5P's help predict a personal violation is coming.

Here are the 5P's of ethical violations:

1. Pressure—Money, Performance, Schedule

2. Pleasure—Adultery to Drugs “If it feels good, do it”
3. Power—the misuse of power—Power corrupts, Absolute power, Absolutely corrupts
4. Pride—Exaggerated sense of self-worth to the detriment of others, “It is the I am better, I can do no wrong” attitude
5. Priorities—”Things that matter most must never be at the mercy of things that matter least.”

I am sure you have seen in your own life how the 5P’s caused ethical violations and destroyed lives or companies. We saw one example of Harry Stonecipher, but there were dozens of others in the banking industry and financial service industry.

Putting engineering ethics together, we can solve engineering ethics dilemmas:

- \*Recognize what causes dilemmas—5 P’s
- \*Recall your Core Ethical Values and Golden Rule—Integrity, Honesty, Fidelity, Charity, Responsibility, & Self-Discipline + THE GOLDEN RULE
- \*Refer to the Code of Ethics for your company and discipline.

## **Columbia Space Shuttle**

“I think we lost them!” Those horrible words from Mission Control signaled a tragedy. It was with optimism and enthusiasm that Columbia leapt off the launch pad and into space on January 16, 2003. The launch itself almost takes your breath away, Figure 4.



Figure 4, Columbia launch January 16, 2003

With the exception of the Challenger, we viewed the Space Shuttle launches and return as standard operating procedure. NASA and its contractors' shuttles were viewed as superb engineering feats. As engineers, we marveled.

But, on February 1, 2003, upon Columbia's return horrible things happened. Figure 5, shows the *Time* magazine cover that is gut retching. Columbia was breaking up as it was traveling across the sky upon return. Just minutes from home, this was not supposed to happen.





Figure 5, Columbia breakup

The breakup would leave an unbelievable debris field, Figure 6.

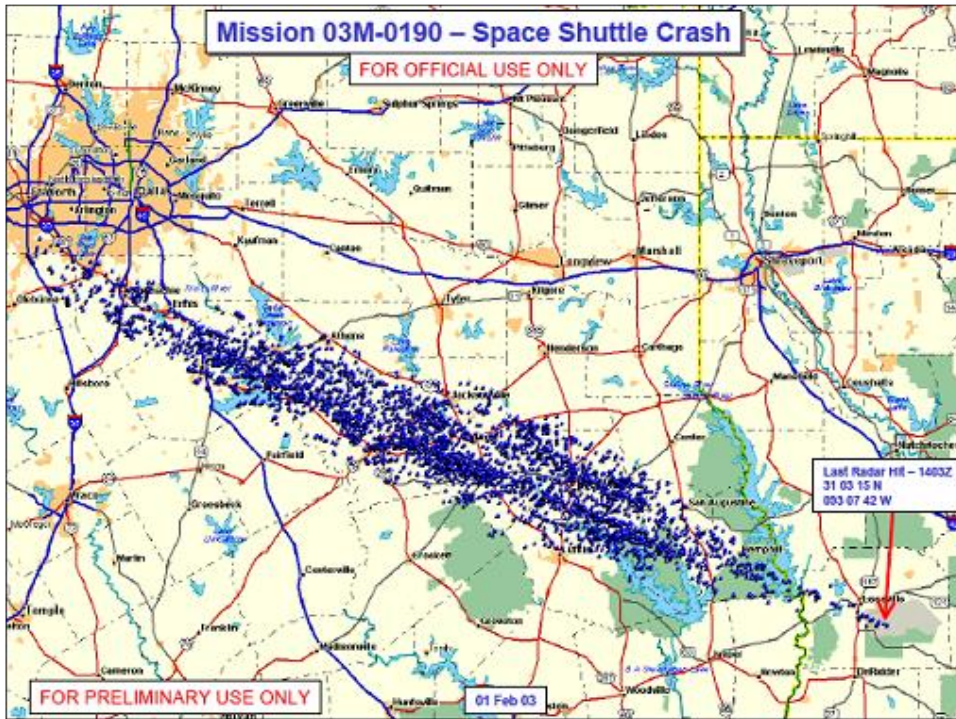


Figure 6, Debris Field



Columbia was seconds from leaving debris in the Dallas Metroplex with potential death and large scale destruction. An even greater tragedy was avoided by the grace of God, not an engineered safety feature. The entire crew, Figure 7, was lost, but thankfully no more.



Figure 7, Columbia crew lost

What caused this tragedy? The simple answer is that external tank foam, the size of a brick, hit the left wing root on launch at a  $\Delta v$  of 525 mph causing a piece to break off the heat shield tiles. When the tiles were breached, they allowed a fiery cutting torch effect that cut off the left wing upon re-entry in the earth's atmosphere.

Why did the external tank foam cause this tragedy? Specifications that prevented debris and foam from hitting the Space Shuttle system were rationalized. Although specifications precluded foam from hitting the Shuttle, small pieces of foam had broken off on prior launches and hit the Shuttle without significant damage. There were some 1600 "safety waivers" including foam strikes that were assessed and justified as an acceptable risk.

Looking at this incident as an ethical exercise, do the "safety waivers" violate our ethics and/or the engineering ethics code? Do the "safety waivers" present an acceptable risk? Is the public protected from the space shuttle?

If we look at the 5P's discussed above, virtually all the votes at my lectures indicate that four of the 5P's were violated:

- \*Pressure---money, performance, schedule
- \*Power---White House, Congress, NASA
- \*Pride---White House, Congress, NASA
- \*Priorities---Did not put crew safety FIRST (and the PUBLIC)

The violated 5P's lead us to believe there was an ethical dilemma brewing. Now, look at an ethics code. Safety is to be paramount, supreme above all else.

It appears from an Engineering Ethics viewpoint, the situation surrounding Columbia violates Engineering Ethics. Of course, this is an oversimplification, but where does acceptable risk fit in our personal and public engineering ethics. Who bears the brunt of the acceptable risk?

## Leadership Lessons

While preparing for my presentation to the Society of American Military Engineers (SAME), I searched for different, not talked about, leaders. As I was searching for leadership examples, Robert Caro's book four on *The Years of Lyndon Johnson* was published. Book four, entitled *The Passage of Power*<sup>14</sup> was highly praised in many reviews.

I have never been a Lyndon Johnson fan! But, after reading several reviews, I bought Caro's fourth book; and, selected Lyndon Johnson as one of my leaders for SAME. I was concerned that I might not have selected one of the most ethical leaders. However, it was Lyndon Johnson's unique situation that fascinated me, and still does.

Part of what fascinated me was remembering the fear I had as a young inexperienced trial attorney sitting second chair in a major products liability trial in Federal Court in Dallas, Texas. I knew if something happened to the first chair, I would have to step up and try the case. It is kind of like having your boss leave and now you are it, ready or not. That memory brought me sympathy for Lyndon Johnson and, most importantly, his situation.

I will try to flesh out the **uniqueness and leadership qualities** Lyndon Johnson displayed in his transition from vice-president scorned to president the day of and days after John F. Kennedy was assassinated.

Robert Caro's first volume, *The Path to Power*, covers the first 33 years of LBJ's life. LBJ was elected to the U.S. House of Representatives in a special election in 1937. He used the Rural Electrification Administration to help build his power base. Caro's second volume, *Means of Ascent*, describes LBJ's "win" in the U.S. Senate race in 1948, essentially stealing the election and beating his opponent in a lawsuit for the seat. The third volume, *Master of the Senate*, explains LBJ's rise in his Democratic Party while the Democrats were in the minority. After the Democrats gained the majority in the U.S. Senate, Johnson became the majority leader in 1955.

The fourth volume, *The Passage of Power*, starts with LBJ in 1958 and continues until 1964, after the Kennedy Assassination on November 22, 1963. It is this narrow window of time that brings **unique lessons of leadership** from Lyndon B. Johnson.

John F. Kennedy's funeral is exceptionally described in Chapter 15, "The Drums," in *The Passage of Power*. It is a moving piece! It is made even more moving to me, who as a kid, was riveted to the TV watching the funeral.

Reading Robert Caro's description, remembering JFK's funeral, I could not help but think of my father's own funeral at Arlington National Cemetery. Dad was a leader also.

Dad was a platoon leader, at age 19, during the invasions of North Africa, Sicily, and Normandy during WWII. He was a battalion commander in Vietnam and Commanding Officer Special Troops and Headquarters Commandant for United States Army Republic of Vietnam (USARV). Later, he was Chief of Public Information for NATO in Izmir, Turkey. He retired as Director of Plans and Programs in the Office of the Secretary of Defense. The leadership quality that Dad had, was that his troops loved him. Affectionately referred to as "Ironass," he was tough, but fair. This was attested to by the numerous troops who served under him in Vietnam and attended his funeral. Dad was a leader in combat.

Robert Caro's description of JFK's funeral at Arlington National Cemetery reminded me so much of Dad's funeral that I am compelled to share it with you. I hope you don't mind.

Caro sets the scene, "...the sounds were of horses' hooves and the creaking of harnesses, and rolling of wooden wheels. A bare black wooden platform---a caisson, or artillery gun carriage---on four black wheels...[pulled] by six matched gray horses in pairs, a rider on the left-hand horse of each pair, the saddle of the right horse empty, as was the military custom for a fallen leader. Two heavy black straps had been attached to the caisson...The straps were laid across the coffin, black against the bright red and white stripes, and buckled fast so that it couldn't fall off....Behind that flag came a riderless horse, a magnificent tall black gelding, sword in its scabbard hanging from the saddle, but in the stirrups, boots turned backward to symbolize the fact that his fallen rider would never ride again: since the days of Gengis Kahn and Tamberlane, a riderless horse with boots reversed in the stirrups had followed chieftains to their graves..."

The riderless horse with boots turned backward commemorating Dad as a fallen leader is shown in Exhibit 8. A United States Army band played during the long march to the gravesite.



Exhibit 8 Riderless horse with boots reversed  
(photo by Mattox Photography)

The same color matched gray horses and left-handed horse riders taking Dad, and years before him, JFK, to their final resting place at Arlington National Cemetery in Washington, DC is in Exhibit 9. Dad's final resting place at Arlington National Cemetery, is Exhibit 10.





Exhibit 9 Matched gray horses (photo by Mattox Photography)



Exhibit 10 Final resting place Arlington National Cemetery

The Kennedy Assassination has always fascinated me! Interestingly, years before Dad's death, one morning, as Dad and I were walking in his Austin, Texas neighborhood, we ran into Dad's friend, Waggoner Carr. Waggoner Carr had been the Attorney General for the State of Texas during the President Kennedy assassination. Waggoner Carr told me directly, "There was no conspiracy." The State of Texas had done its own inquiry and investigation into the assassination of JFK and concluded there was no conspiracy. Waggoner Carr had no doubt about it.



Figure 11 Johnson taking Presidential Oath (Photo White House Staff)



The photograph in Figure 11 was heavily orchestrated. Although, Lyndon B. Johnson was already president as next in line after Kennedy, he wanted no doubt that he was president. He had the photograph taken with JFK's widow, Jackie Kennedy, to further legitimize his presidency and help put away conspiracy thinkers. This leadership quality by Lyndon Johnson left no doubt that he was President of the United States. It was a time of shock and immediate doubt in the government. Lyndon Johnson the leader was taking charge.

**Maybe Eisenhower defined leadership best, "Leadership is the art of getting someone else to do something you want done because he wants to do it." Lyndon Johnson exemplified this statement in a big way. Leadership is often best understood when it is during a leader's most intense struggles, when they have all resources available.** I tend to think of two sports analogies: when the rookie pitcher gets called up to the major leagues for his first game and when the backup quarterback is put in the game after the starting quarterback is injured. In these two examples, all the resources of the team are behind the inserted player; and, in Lyndon Johnson's case, the United States government was behind him. But, there is always a measure of distrust for the "new" person. Leaders overcome this distrust, usually in a hurry.

I believe we can take away from Robert Caro at least four key leadership lessons that Lyndon Johnson demonstrated following the Kennedy assassination: 1. Continuing and Stabilizing the U.S. 2. Using the crisis to move forward. 3. Detaching yourself emotionally from the crisis. 4. Making big decisions alone.

### **1. Continuing and Stabilizing the U.S.**

At the time of the Kennedy assassination, the whole event, and particularly Johnson, were on live television. Places and faces were shown instantly to millions of people in the United States and around the world. A nation was horrified! A world was stunned! This was a national crisis! The President of the United States had been gunned down and nobody knew by whom or why it happened. There were rumors of a conspiracy of some sort and the chance that Cuba's Fidel Castro might be behind a conspiracy.

Lyndon Johnson had to calm the nation. As Caro describes, "He (Johnson) has to create an impression of continuity and stability. He has to make clear that the government is functional---even though its leader has been suddenly killed." It was not going to be easy. Many of Kennedy's staff and cabinet had contempt or hate for Johnson. Johnson had been stripped of a staff and had been placed in the background by Kennedy, his staff, and cabinet. Moreover, Johnson did not get

along with Kennedy's brother, Bobby Kennedy, who was the attorney general of the United States.

**This moment in history may have been Lyndon Johnson's finest leadership moment.** Johnson began a carefully crafted campaign to bring the "Kennedy" people over to his side and help him. Johnson met with each person individually and told them he needed them more than Kennedy needed them. The magic Lyndon Johnson used with each person was that Johnson gave an individual reason, personally, as to why they should stay and appealed to each person's particular interests. And, stay they did, to help the man they had originally despised. That took leadership at its highest level. Moreover, Johnson did this within hours of Kennedy's unforeseen death and funeral.

## 2. Using the Crisis to Move Forward.

Lyndon Johnson came back to Washington, DC the night of the Kennedy assassination and could not sleep. He called three of his aides to his bedroom and talked to them for hours about what needed to be done to run the country. Johnson essentially outlined, that night, the agenda for the rest of his presidency.

Lyndon Johnson had been one of, if not the most, powerful Senate majority leaders in history. He also knew that Kennedy's legislative agenda was stalled. Johnson's leadership was to use the Kennedy assassination crisis to move Kennedy's legislation forward. The time was now! *This was another key leadership moment.*

The first bill Johnson presented was the contentious Civil Rights Act. Moreover, Johnson's advisors were extremely concerned that taking the contentious Civil Rights Act up first would ruin any political capital he owned. Johnson famously stated that if he could not take up something like the civil rights bill, "What the hell is the presidency for?" This was a tough "pitch" and Johnson stepped up to the plate to "hit."

Shortly after Kennedy's funeral, in his first address as President of the United States, Johnson implored the nation to continue Kennedy's work. Robert Caro quotes Johnson later saying, "although Kennedy had died, 'his cause' was not really clear. That was my job. I had to take the dead man's program and turn it into a martyr's cause." That is using the crisis to move forward.

Lyndon Johnson used the assassination crisis to move Kennedy's causes forward, from civil rights and voting rights to Medicare. In metallurgical engineering terms, that is striking while the iron is hot.

### **3. Detaching Yourself Emotionally from the Crisis.**

Johnson and Kennedy had a relationship that was contentious at best. Johnson had little staff and was often not involved in Kennedy's meetings. Robert Caro opines that we may never really know how Johnson personally felt about Kennedy's death. Caro supposes that Johnson's detachment from Kennedy may have made it easier to handle the crisis from the Kennedy assassination. History may never know. Robert Caro has made a thorough investigation and interviewed dozens of people looking for answers to this question.

We do know that in Dallas at Parkland Hospital after Kennedy was shot, Lyndon Johnson stood in the hospital for 45 minutes without any information about the president's condition before being informed that President Kennedy was dead. The description of Lyndon Johnson being placed in a room with secret service agents all around is almost unbelievable.

After, what probably seemed like an eternity, an aid walked in and called Lyndon Johnson, "Mr. President" for the first time. Almost immediately, Lyndon Johnson is asked to make decisions. Johnson starts making those decisions with great precision.

Lyndon Johnson had detached from the moment and moved on. Moreover, from that moment on, Lyndon Johnson entered a new mode of thinking. Any personal thoughts or emotions were pushed aside in order to lead the nation through a crisis and come out of it with meaning. *What a moment!* Put yourself in Johnson's position and think what you would do.

### **4. Making Big Decisions Alone.**

Big decisions have to be made alone. Kennedy had stripped Lyndon Johnson of most of his advisors in an effort to minimize Johnson's ability to exert influence over the Kennedy administration affairs. Remember, Johnson was one of the most powerful Senators who ever lived. But, as a result, in the Kennedy assassination crisis, Johnson had no one with whom to consult or really trust.

Johnson alone decides on what has to be done, by himself. His decisions are based on his thorough knowledge of government. Johnson made the Senate function productively. Part of that productivity was due to Johnson being able to

think fast on his feet. When the Kennedy assassination crisis hit, Johnson had the fortitude to think fast and act.

I love the Johnson quote Robert Caro used in his book: “Everything was in chaos. We were spinning around and around, trying to come to grips with what had happened, but the more we tried to understand it, the more confused we got. We were like a bunch of cattle caught in the swamp. There is but one way to get the cattle out of the swamps. And that is for the man on the horse to take the lead, to assume command, to provide direction. *I was that man.*”

The keys we can learn for Lyndon Johnson in crisis leadership are: 1. Preserving continuity and stability of your organization (in this case the U.S.). 2. Using the crisis to move forward (quickly). 3. Detaching yourself emotionally from the moment. 4. Making the really big decisions alone by yourself.

In summary of Lyndon Johnson, Doris Kearns Goodwin may have said it best when she described Lyndon Johnson’s most effective tactic to get the 1964 Civil Rights Act through Congress. (Doris Kearns Goodwin is a noted historian and author of biographies about LBJ and Abraham Lincoln as well as other books.) Her response was from a question in an interview in AARP Bulletin, June 2014.

Goodwin’s Lyndon Johnson description, “He believed in the law. He once said, ‘What convinces is conviction.’ He was passionate. Then, of course, the Johnson treatment was spectacular. He knew every senator. He had big charts, so he knew what everybody wanted and called them regularly. He traded things. He used every skill, every weapon, every charm, every bludgeon.”<sup>15</sup>

As a personal trait, Lyndon Johnson had unbelievable ambition. Goodwin traces his dilemma of having to choose between his mother and father growing up. “If he chose his father, he might jeopardize the love and respect of his mother; if he chose his mother, his identity as a man would be in danger.”<sup>16</sup> Undoubtedly, this situation led to Johnson’s ambition.

If we look back at Abraham Maslow’s Hierarchy of Needs, Figure 2, we see that Johnson’s last deficit need was Esteem Needs. The Esteem Needs required recognition by his mother and father to give feelings of prestige, acceptance, and status. Johnson’s ambition led to the highest office in the United States, but after achieving the Presidency, Johnson had a difficult time handling retirement.

Whether you, like me, were skeptical of Lyndon Johnson, we have to admire his leadership in a time of crisis. Unfortunately, Lyndon Johnson will always be associated with the Vietnam War. Fortunately, we are able to look at his leadership. *Lyndon Johnson led in a moment of crisis!*

## **Marcus Aurelius, a Leader for All Time**

The more I learn about Marcus Aurelius the more I like him. Ethics, engineering, and leadership are exemplified in Marcus Aurelius. A photograph of his bust is shown in Figure 12.



Figure 12 Marcus Aurelius

Marcus Aurelius lived from 121-180 AD and was emperor over the Roman Empire from 161-180 AD. He was Plato's ideal philosopher-king.

Virtues espoused by Marcus Aurelius were love of our fellow man, truthfulness, moderation and these, according to Marcus, were the same qualities of law. Accordingly, right, reason, and justice were one and the same. He believed himself to be a man of reason and was carrying out his civic duty. As emperor of Rome, he believed in one law for all, individual equality, and a sovereignty that preserved the freedom of the individual. The idea of natural law was written into the legal code of Rome.<sup>17</sup>

The sheer size of the Roman Empire in Marcus Aurelius' day is impressive. In today's terms, the expanse of the Roman Empire covered from Scotland to the

Tigris and Euphrates river valleys in Iraq and from the North Sea in Germany to the sands of the Sahara. Quite a vast empire!

Interestingly, you could use one language that was understood if you travelled from Morocco to Spain, Algeria, Tunisia, Libya, Egypt, Israel, Jordan, Lebanon, Syria, Turkey, Greece, Bulgaria, Romania, Hungary, Austria, Switzerland, Germany, Luxembourg, Belgium, Holland, France to Scotland and the United Kingdom. If you knew Latin you could travel during Marcus Aurelius' time in most of the known world and be understood. To travel through these countries today you would probably need to know a dozen languages, have to change your money a dozen or so times, and obtain a dozen visas, even with the European Union.

Granted, a lot of people speak English today, but I can tell you from personal experience that when I hailed a cab late one night in Vienna, Austria, and the driver told me "nur Deutsch" I had to put my best German forward.

In Marcus Aurelius' day the currency of Rome allowed you to travel across the empire with the same money.

Most importantly, there was one law in the vast empire during the reign of Marcus Aurelius. That was Roman Law. Roman Law protected your rights as an individual, your rights to property, and domestic relations throughout the empire. Even today, Latin phrases dominate our law.

Martin Seymour-Smith authored the book, *The 100 Most Influential Books Ever Written: The History of Thought From Ancient Times to Today*. Marcus Aurelius' book *Meditations* was selected as one of the most influential books ever written. Why? One reason is the ethics that Marcus Aurelius practiced as one of the greatest emperors to lead Rome.

Marcus Aurelius composed *Meditations* in Greek because Greek was more philosophical than Latin. *Meditations* is as relevant today as when Marcus Aurelius wrote it two thousand years ago. It should be read by anyone who wants to reconcile the personal demands of leadership with a need for personal integrity and spiritual well-being.

Marcus Aurelius practiced Stoic philosophy, Plato's philosopher-king character, who had been thoroughly schooled in Greek rhetoric and Latin oratory.



For Marcus Aurelius, Law and Ethics **merged** into the same thing---**to do right!**

## **Stoic Philosophy**

To appreciate Marcus Aurelius, we should examine his philosophy and what he added to philosophy. The founder of Stoicism was Zeno of Citium who taught in Athens, Greece about 300 B.C. The Stoics took their name from the Stoa Poikile or painted column where they taught in the market place in Athens.

Stoicism developed during a period of time when Greek city-states, like Athens, were being conquered by foreign empires. The chaos of war precipitated the Stoic philosophy to deal with the situation. **Stoicism was a way to remind yourself what you can and cannot control.** We, for instance, cannot control the weather, global politics, other people, our job, our parents or friends, the past, the future, or to some extent our own bodies, and the fact that we will die. Our world is complex and constantly changing. World events are beyond our control. But, what we can control are our own beliefs and thoughts.

Stoics believe that if they remind themselves on a regular basis of their beliefs and thoughts and focus their energy and attention on their beliefs, they will be able to cope with outside events. Further, Stoics believed they provided a unified meaning of the world that included logic, physics, and naturalistic ethics. **Out of these, ethics was considered the most important.**

Stoicism develops self-control and fortitude as a means of handling our destructive emotions. Primarily, Stoicism involves improving our ethical and moral well-being.

The term “stoic” is often misunderstood today as meaning unemotional. Stoics try to follow reason rather than passion in certain situations. That is not to say that Stoics are unemotional, but that they try to reason and maintain an inner calm. To give a sports analogy, a football quarterback may have plenty of emotion during a game, but he has to remain calm and dutifully run the plays he has practiced.

The English word “emotion” is derived from Greek and Latin words meaning “to move.” Emotions are things that move us and are somewhat out of our control. The job of philosophy is to train our emotions so we are not ruled by these movers.<sup>18</sup>



The Stoics had an optimistic worldview. Stoics believe that nature (God) has blessed them with consciousness, reason, and free will. With these three items, Stoics believe they can adapt themselves to any set of circumstances to achieve happiness here on earth. Stoics regarded adversity as a training exercise. Fortune can only damage externals. Stoics place no moral value on externals. Stoics seek happiness and fulfillment in rising above fortune and *doing the right thing*. Stoics believe virtue is its own reward.<sup>19</sup>

### *Meditations*<sup>20</sup>

Marcus Aurelius wrote his book, generally translated as *Meditations*, to himself. He never meant it for publication. It was written by the Emperor to himself “carrying nearly the world on his shoulders, determining life and death of millions, judging, ruling, killing and rescuing.”<sup>21</sup> Marcus Aurelius was writing **his** thoughts from a tent while defending Rome from the Eastern European barbarians. When he wrote *Meditations* also translated “thoughts to myself,” Rome had experienced floods, earthquakes, a horrible plague, and war. Marcus spent the last decade of his life fighting the German tribes in grueling and vicious campaigns. He lived at the front of the German campaign in a tent where he kept his journal now known as *Meditations*. This journal kept track of his thoughts and he used it to help and guide himself against his life challenges. On top of these problems, he was suffering from health issues.<sup>22</sup>

Marcus Aurelius never called himself a Stoic. However, he was steeped in the Stoic philosophy. Philosophy as taught today is different from the ancient notion of philosophy. “To be a philosopher in Marcus’ time was to dedicate oneself to a particular school and adhere to its daily practices.”<sup>23</sup>

Marcus Aurelius referred to the “inner citadel” of your soul, when you withdraw from externals and find your happiness. Moreover, what is really valuable is not your house or your career or your reputation, **but your soul**. Nothing in the outside world can really do you injury.<sup>24</sup> What have you accomplished, if you have lost your soul?

*Meditations* was a working book where Marcus Aurelius wrote out and challenged his irrational thoughts and tried to practice wiser thoughts and attitudes. It is not smooth and consistent because it depended on what happened each day and what his mind came up with that day. His responses were

practicing for himself until the response became automatic. Marcus used his journal as a resource to retreat from the demands of his life. It was his game plan. He would take a situation and consider it from different aspects. Essentially, Marcus is taking difficult situations, viewing them from different perspectives, making his mind flexible, and rehearsing new attitudes until they become a habit. Behavior modification in a sense.

Scattered throughout *Meditations* are great philosophical questions Marcus Aurelius was grappling with:

- Why are we here?
- How should we live our lives?
- How can we ensure that what we do is right?
- How can we protect ourselves from the stress of daily life?
- How can we handle the pain and misfortune that comes our way?
- How can we live with the knowledge that someday we will die?

It is believed that Marcus Aurelius developed a philosophy in *Meditations* consisting of three doctrines or disciplines:

- Perception
- Action
- The will

**Perception** requires us to maintain absolute objectivity of thought, i.e., we see things for what they really are (reality).

**Action** relates to our relationship or reaction to other people. Marcus believes we were made for others, not ourselves, and our nature is to be unselfish. Moreover, we should work for the collective good. People should be treated justly and fairly as individuals. Aurelius describes human society as a single organism, like a tree. The trunk of the tree is not to be confused with the branches or leaves. Our duty is to act justly, but that does not mean to treat everybody equally. By this Marcus means to treat people as they deserve in their place in society.

**Of the will** doctrine, relates to our approach to things in our control and things out of our control. We control our own actions and are responsible for them. Things outside of our control cannot harm us because we have no ability to control them.

These three doctrines constitute a comprehensive approach to life that mixes and combines doctrines within Marcus Aurelius' *Meditations*. The doctrines are specifically set out in *Meditations* 7.54 (chapter 7 verse 54) where it states:

“Everywhere, at each moment, you have the option:

- To accept this event with humility[of the will];
- To treat this person as he should be treated [action];
- To approach this thought with care, so that nothing irrational creeps in [perception].”

This is mixed and reformulated in *Meditations* 9.6 and 8.7.

Perception, Action, and Will are key to Marcus Aurelius' thinking in *Meditations*.

**So what? How does this affect me? Who cares?**

Marcus Aurelius and the Stoics still have something for us today. Stoics believe that a person's behavior is more important than his words. What you see is what you get. Stoics practice fortitude when fate hands us a blow. Stoics want us to develop self-control over our destructive and negative emotions.

Self-control is such a vital asset in life. How many times have we seen a sports figure out of control? Look back on your own life and I am sure there were times when you were out of control. I know there were times when I was out of control. Marcus Aurelius was a spiritual person who believed in God and order in the universe. Stoics want us to improve our moral and spiritual wellbeing. They want us to align our lives with the divine logos permeating our creation. And yet, stoics want us to be passionate, joyful, and peaceful while being wise, courageous, disciplined, and just. Moreover, Stoics want to examine our lives and practice daily disciplines which become habits to help us here and now.

**Concentrate on what we can control and what we choose, and let go of things we cannot control.**

Along these lines, my late law partner, Ken Nunley, instructed our secretaries not to let me see any mail until late in the day. Ken claimed that I would get so angry at opposing counsel that I could not get anything done the rest of the day. That was his way of making me let go of things we cannot control. Ken was a master at letting things go we cannot control and especially during a trial. If Ken had an adverse ruling on something during trial, he would look at the jury, smile, and with a chuckle keep on going.

**The point is, we so often get upset at things that are out of our control.**

Marcus Aurelius and his Stoic Philosophy, is a realistic philosophic approach and has the ideal of pursuing a conception of the “good,” having an excellent state of character that can meet difficulties head on, and contains the idea of structuring one’s life as a whole around a coherent set of values.

I feel like I almost know Marcus Aurelius and I hope you do as well. He was much more than a leader. He was an inspirer as well.

### **Concluding Remarks**

Let’s admit, we all push ethical boundaries from time to time. What makes us break some boundaries, but not others?

A partial explanation was addressed by Jena Pincott’s article, “Are these rules worth breaking?” in the November/December 2014 issue of *Psychology Today*. Research shows us that we commit one to two daily acts of lying, cheating, or stealing in somewhat innocuous ways while at the same time believing ourselves to be honest. Examples of such indiscretions might be a little dishonesty on our tax returns or just breaking the law a little by speeding. Interestingly, we might be less than ethical in some situations, but not in others. Just thinking about getting away with something less than ethical can steer us in that direction.

Studies have shown that smarter people are not any more dishonest than persons less smart. However, creativity seems to breed dishonesty. It appears the more creative you are, the easier it is to get away with dishonesty. You are also better able to justify why your action was *ethically justified*. Deception is easier when rules or ethical boundaries are ambiguous or when there doesn’t appear to be a victim.

I was fortunate to take an online ethics course taught by Arthur Dobrin, a professor at Hofstra University and author of numerous books on ethics. Dobrin offered that studies have shown that lawyers and doctors are more ethical before graduating than afterward. I know law school teaches you to think from both sides of an issue and argue for one side or the other, not necessarily what is right. Dobrin stated that law school taught ways of getting around particular laws. This would seem to fit well with the creativity theory.

Studies indicate that minor rule breaking offers two immediate rewards: One, a cheater's high, making a person feel smarter and more confident; and, two, a sense of freedom by not having to play by the rules.

Cheaters win? Take an example of two accountants who have been alerted to suspicious book entries. The first accountant takes the matter seriously while the second deems it okay to break the rules. Guess which accountant is the better regarded? Studies show participants picked the second accountant. Breaking rules made the second accountant appear to be more powerful. Now, think back to Enron. Accountants broke the rules and appeared to be very powerful, all except the one who was successful in exposing illegal accounting and brought down Enron. Oddly enough, I recently saw where Andy Fastow, an Enron accountant who served prison time and is out, is teaching ethics. His reason for teaching ethics is that he now knows what is ethical.

Studies show as persons gain power, their behavior becomes liberated and leans toward an ethical numbing. The more people care about winning and power, the more they feel threatened by competition and the faster their value system is abandoned. This empirically supports one of the 5P's we discussed earlier as a precursor toward an ethical violation, i.e., Power.

Studies also confirm that we humans follow a norm within our culture or company. If this is at the expense of society as a whole, so be it. If we are around people who download pirated music, cheat on tests, or accept bribes, we are more likely to follow those people or cover up for them. If everyone else is doing it, why shouldn't I?

The fairness argument for breaking rules states that rules are worthy of breaking in the name of fairness. We see this in small children, "it just isn't fair!" Children have a unique sense of fairness. Studies show that persons who see themselves as disadvantaged cheated more than those who believed it was a level playing field. Edward Snowden leaked surveillance data because he perceived powerful evildoers were not held accountable under the law. He divulged information because it violated basic fairness to society.

Our real problem posed by ethical lapses is not the occasional lapse. The real problems are the minor transgressions that are frequent enough to be routinized. They become the new norm. This ethical erosion can happen slowly and is difficult to notice. Again, the 5 P's can help with notice and awareness. But, can you imagine Bernie Madoff or Lance Armstrong in the beginning saying, "only

this one time.” Then saying, “only one more time.” Eventually, they did not even think about it.

Unfortunately, behavioral psychology does not offer many answers as yet to these ethical lapses. Your ethical behavior basically boils down to self-control. However, we are likelier to fall into ethical lapses when we are tired or hungry.

**It is important to give ourselves ethical reminders often.** Studies show that people who sign an ethics pledge before filling out tax documents, job applications, or claims did better ethically after filling out the documents. The same goes if you are asked to recall the Ten Commandments, even among the non-religious. These studies were one of the reasons I requested an ethics pledge in this course. If you took the pledge, hopefully you will remember taking a pledge.

Only you can make yourself be happy. In order to feel good about ourselves we need to lead honest lives and see ourselves in a positive light. This means we need to lead ethical lives.

I hope you have enjoyed this course and gained from it. Thank you for taking it.



## ***Ethics, Engineering, and Leadership: References, Endnotes, Acknowledgments, Permissions & Websites***

**The Right Choice: Applying Ethics to Engineering** started development in 2001. Other courses were developed and co-authored. Since then, countless websites were visited, many with links to other sources, some of which are no longer on the web. Every attempt has been made to credit those sources used in this course and your indulgence is asked of anyone who has been slighted.

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