Professional Ethics in Engineering

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CONNEXIONS

Rice University, Houston, Texas

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Chapter 1

Ethical Theory and Group Work

1.1 Theory Building Activities: Mountain Terrorist Exercise¹

1.1.1 Module Introduction

This module poses an ethical dilemma, that is, a forced choice between two bad alternatives. Your job is to read the scenario and choose between the two horns of the dilemma. You will make your choice and then justify it in the first activity. In the second activity, you will discuss your choice with others. Here, the objective is to reach consensus on a course of action or describe the point at which your group's progress toward consensus stopped. The Mountain Terrorist Exercise almost always generates lively discussion and helps us to reflect on of our moral beliefs. Don't expect to reach agreement with your fellow classmates quickly or effortlessly. (If you do, then your instructor will find ways of throwing a monkey wrench into the whole process.) What is more important here is that we learn how to state our positions clearly, how to listen to others, how to justify our positions, and how to assess the justifications offered by others. In other words, we will all have a chance to practice the virtue of reasonableness. And we will learn reasonableness not when it's easy (as it is when we agree) but when it becomes difficult (as it is when we disagree).

The second half of this module requires that you reflect carefully on your moral reasoning and that of your classmates. The Mountain Terrorist Exercise triggers the different moral schemas that make up our psychological capacity for moral judgment. Choosing one horn of the dilemma means that you tend to favor one kind of schema while choosing the other horn generally indicates that your favor another. The dominant moral theories that we will study this semester provide detailed articulations and justifications of these moral schemas. Reflecting on your choice, the reasons for your choice, and how your choice differs from that of your classmates will help you get started on the path of studying and effectively utilizing moral theory.

The following scenario comes originally from the philosopher, Bernard Williams. It is also presented in introductory ethics textbooks (such as Geoffrey Thomas' An Introduction to Ethics). The first time this module's author became aware of its use in the classroom was in a workshop on Agriculture Ethics led by Paul Thompson, then of Texas A&M University, in 1992.

1.1.2 Moral Theories Highlighted

- 1. Utilitarianism: the moral value of an action lies in its consequences or results
- 2. Deontology: the moral value of an action lies, not in its consequences, but in the formal characteristics of the action itself.
- 3. Virtue Ethics: Actions sort themselves out into virtuous or vicious actions. Virtuous actions stem from a virtuous character while vicious actions stem from a vicious or morally flawed character. Who we are is reveals through what we do.

¹This content is available online at http://cnx.org/content/m13764/1.11/.

Available for free at Connexions http://cnx.org/content/col10399/1.4>

1.1.3 Mountain Terrorist Scenario

You are in a remote mountain village. A group of terrorists has lined up 20 people from the village; they plan on shooting them for collaborating with the enemy. Since you are not from the village, you will not be killed. Taking advantage of your position, you plead with the terrorists not to carry out their plan. Finally, you convince the leader that it is not necessary to kill all 20. He takes a gun, empties it of all its bullets except one, and then hands it to you. He has decided to kill only one villager to set an example to the rest. As an honored guest and outsider, you will decide who will be killed, and you will carry out the deed. The terrorists conclude with a warning; if you refuse to kill the villager, then they will revert back to the original plan of killing all 20. And if you try any "funny business," they will kill the 20 villagers and then kill you. What should you do?

Your Options

- 1. Take the gun, select a villager, and kill him or her.
- 2. Refuse the terrorists' offer and walk away from the situation.

Spanish Translation by Dr. Halley Sanchez

El Terrorista de la Montaña Tú eres un antropólogo que por un mes ha estado viviendo con y observando (o sea, estudiando) a los residents de una aldea en una area remota montañoza de un pais en América Latina. El día que te dispone irte de la aldea, aprece un grupo de hombres armados que reúnen a los aldeanos y les anuncian que se han enterado de que ellos han estado cooperando con el gobierno represivo y que, como lección, han de ejecutar viente de ellos. El líder de los terroristas te mira y te dice que tú te puedes ir, ya que no estás involucardo en la lucha patriótica y que ellos no están en la costumbre de tomar rehénes extranjeros. Debido a que te da la impresión de que el líder de los supuestos patriótas (terroristas?) es un hombre educado, tú te atreves tratar de razonar con él. Le explica que llevas un mes en la aldea y que los aldeanos no han cooperado de forma volutaria con el gobierno. Sí, por supuesto, las tropas del gobierno pasaron por la aldea y confiscaron algunas provisiones, pero los aldeanos no se las dieron libremente sino que estaban indefenso y no podieron prevenir que le confiscaran las mismas. El líder piensa un tiempo y te dice que por tú ser forastero y obviamente un antropólogo estudioso, te va a dar el benificio de la duda, y que por tanto no van a ejecutar viente aldeanos. Pero dado que la lucha patriótica está en un proceso crítico y que la aldea sí le proveyó provisiones al gobierno, por el bien de la lucha patriótica y el bien de la humanidad, es menester darle una lección a la aldea. Así que tan sólo han de ejecutar un aldeano. Más, como huesped, tú has de escoger quién ha de morir y tú has de matarlo tú mismo. Te da una pistola con una sola bala y te dice que proceda, mientras que a la vez te advierte que de tratar algo heroico, te ejecutarán inmediatamente y procederán a ejecutar a los viente aldeanos como dijeron al comienzo. Tú eres el antropólogo. ¿Qué harás? Activity 1

In a short essay of 1 to 2 pages describe what you would do if you were in the position of the tourist. Then justify your choice.

Activity 2

Bring your essay to class. You will be divided into small groups. Present your choice and justification to the others in your group. Then listen to their choices and justifications. Try to reach a group consensus on choice and justification. (You will be given 10-15 minutes.) If you succeed present your results to the rest of the class. If you fail, present to the class the disagreement that blocked consensus and what you did (within the time limit) to overcome it.

1.1.4 Taxonomy of Ethical Approaches

There are many ethical approaches that can be used in decision making. The Mountain Terrorist Exercise is based on an artificial scenario designed to separate these theoretical approaches along the lines of the different "horns" of a dilemma. Utilitarians tend to choose to shoot a villager "in order to save 19." In other words they focus their analysis on the consequences of an action alternative and choose the one that produces the least harm. Deontologists generally elect to walk away from the situation. This is because they judge an action on the basis of its formal characteristics. A deontologist might argue that killing the villager violates natural law or cannot be made into a law or rule that consistently applies to everybody. A deontologist might say something like, "What right do I have to take another person's life?" A virtue ethicists might try to imagine how a person with the virtue of courage or integrity would act in this situation. (Williams claims that choosing to kill the villager, a duty under utilitarianism, would undermine the integrity of a person who abhorred killing.)

Table Connecting Theory to Domain

- 1. Row 1: Utilitarianism concerns itself with the domain of consequences which tells us that the moral value of an action is "colored" by its results. The harm/beneficence test, which asks us to choose the least harmful alternative, encapsulates or summarizes this theoretical approach. The basic principle of utilitarianism is the principle of utility: choose that action that produces the greatest good for the greatest number. Cost/benefits analysis, the Pareto criterion, the Kalder/Hicks criterion, risk/benefits analysis all represent different frameworks for balancing positive and negative consequences under utilitarianism or consequentialism.
- 2. Row 2: Deontology helps us to identify and justify rights and their correlative duties The reversibility test summarizes deontology by asking the question, "Does your action still work if you switch (=reverse) roles with those on the receiving end? "Treat others always as ends, never merely as means," the Formula of End, represents deontology's basic principle. The rights that represent special cases of treating people as ends and not merely as means include (a) informed consent, (b) privacy, (c) due process, (d) property, (e) free speech, and (f) conscientious objection.
- 3. Row 3: Virtue ethics turns away from the action and focuses on the agent, the person performing the action. The word, "Virtue," refers to different sets of skills and habits cultivated by agents. These skills and habits, consistently and widely performed, support, sustain, and advance different occupational, social, and professional practices. (See MacIntyre, After Virtue, and Solomon, Ethics and Excellence, for more on the relation of virtues to practices.) The public identification test summarizes this approach: an action is morally acceptable if it is one with which I would willingly be publicly associated given my moral convictions. Individual virtues that we will use this semester include integrity, justice, responsibility, reasonableness, honesty, trustworthiness, and loyalty.

Covering All the Bases						
Ethical Dimension	Covering Ethical Approach	Encapsulating Ethical Test	Basic Principles	Application or Bridging Tools		
Consequences Utilitarianism		Harm/Beneficence (weigh harms against benefits)	Principle of Util- ity: greatest good for greatest num- ber	Benefit & cost comparisonUtility Maximization		
Formal Character- istics of Act	Deontology (Duty- based, rights- based, natural law, social con- tract)	Reversibility (test by reversing roles between agent and object of action)	Categorical Im- perativeFormula of EndAutonomy	Free & Informed Consent, Privacy, Property, Due Process, Free Speech, Conscien- tious objection		
continued on next page						

CHAPTER 1. ETHICAL THEORY AND GROUP WORK

Skills and habits cultivated by agent	Virtue Ethics	Public Identifica- tion (impute moral import of action to person of agent)	Virtues are means between extremes with regard to agent and ac- tionVirtues are cultivated disposi- tions that promote central community values	Integrity, justice, responsibility, rea- sonableness, hon- esty, trustworthi- ness, loyalty
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Table 1.1

1.1.5 Comments on the Relation Between Ethical Approaches

The Mountain Terrorist Exercise has, in the past, given students the erroneous idea that ethical approaches are necessarily opposed to one another. As one student put it, "If deontology tells us to walk away from the village, then utilitarianism must tell us to stay and kill a villager because deontology and utilitarianism, as different and opposed theories, always reach different and opposed conclusions on the actions they recommend." The Mountain Terrorist dilemma was specially constructed by Bernard Williams to produce a situation that offered only a limited number of alternatives. He then tied these alternatives to different ethical approaches to separate them precisely because in most real world situations they are not so readily distinguishable. Later this semester, we will turn from these philosophical puzzles to real world cases where ethical approaches function in a very different and mostly complimentary way. As we will see, ethical approaches, for the most part, converge on the same solutions. For this reason, this module concludes with 3 meta-tests. When approaches converge on a solution, this strengthens the solution's moral validity. When approaches diverge on a solution, this weakens their moral validity. A third meta-test tells us to avoid framing all ethical problems as dilemmas (=forced choices between undesirable alternatives) or what Carolyn Whitbeck calls "multiple-choice" problems. You will soon learn that effective moral problem solving requires moral imagination and moral creativity. We do not "find" solutions "out there" ready made but design them to harmonize and realize ethical and practical values.

Meta-Tests

- Divergence Test: When two ethical approaches differ on a given solution, then that difference counts against the strength of the solution. Solutions on which ethical theories diverge must be revised towards convergence.
- Convergence Test: Convergence represents a meta-test that attests to solution strength. Solutions on which different theoretical approaches converge are, by this fact, strengthened. Convergence demonstrates that a solution is strong, not just over one domain, but over multiple domains.
- Avoid Framing a Problem as a Dilemma. A dilemma is a no-win situation that offers only two alternatives of action both of which are equally bad. (A trilemma offers three bad alternatives, etc.) Dilemmas are better dissolved than solved. Reframe the dilemma into something that admits of more than two no-win alternatives. Dilemma framing (framing a situation as an ethical dilemma) discourages us from designing creative solutions that integrate the conflicting values that the dilemma poses as incompatible.

1.1.6 Module Wrap-Up

1. **Reasonableness and the Mountain Terrorist Exercise.** It may seem that this scenario is the last place where the virtue of reasonableness should prevail, but look back on how you responded to those of your classmates who chose differently in this exercise and who offered arguments that you had not initially thought of. Did you "listen and respond thoughtfully" to them? Were you "open to new ideas"

even if these challenged your own? Did you "give reasons for" your views, modifying and shaping them to respond to your classmates' arguments? Did you "acknowledge mistakes and misunderstandings" such as responding critically and personally to a classmate who put forth a different view? Finally, when you turned to working with your group, were you able to "compromise (without compromising personal integrity)"? If you did any or all of these things, then you practiced the virtue of reasonableness as characterized by Michael Pritchard in his book, Reasonable Children: Moral Education and Moral Learning (1996, University of Kansas Press, p. 11). Congratulate yourself on exercising reasonableness in an exercise designed to challenge this virtue. You passed the test.

- 2. Recognizing that we are already making ethical arguments. In the past, students have made the following arguments on this exercise: (a) I would take the gun and kill a villager in order to save nineteen; (b) I would walk away because I don't have the right to take another's life; (c) While walking away might appear cowardly it is the responsible thing to do because staying and killing a villager would make me complicit in the terrorists' project. As we discussed in class, these and other arguments make use of modes of thought captured by ethical theories or approaches. The first employs the consequentialist approach of utilitarianism while the second makes use of the principle of respect that forms the basis of our rights and duties. The third works through a conflict between two virtues, courage and responsibility. This relies on the virtue approach. One accomplishment of this exercise is to make you aware of the fact that you are already using ethical arguments, i.e., arguments that appeal to ethical theory. Learning about the theories behind these arguments will help you to makes these arguments more effectively.
- 3. Results from Muddy Point Exercises The Muddy Point Exercises you contributed kept coming back to two points. (a) Many of you pointed out that you needed more information to make a decision in this situation. For example, who were these terrorists, what causes were they fighting for, and were they correct in accusing the village of collaborating with the enemy? Your request for more information was quite appropriate. But many of the cases we will be studying this semester require decisions in the face of uncertainty and ignorance. These are unavoidable in some situations because of factors such as the cost and time of gathering more information. Moral imagination skillfully exercised can do a lot to compensate when all of the facts are not in. (b) Second, many of you felt overly constrained by the dilemma framing of the scenario. Those of you who entered the realm of "funny business" (anything beyond the two alternatives of killing the villager or walking away) took a big step toward effective moral problem solving. By rejecting the dilemma framing of this scenario, you were trying to reframe the situation to allow for more—and more ethically viable—alternatives. Trying to negotiate with the Terrorists is a good example of reframing the scenario to admit of more ethical alternatives of action than killing or walking away.
- 4. Congratulations on completing your first ethics module! You have begun recognizing and practicing skills that will help you to tackle real life ethical problems. (Notice that we are going to work with "problems" not "dilemmas".) We will now turn, in the next module, to look at those who managed to do good in the face of difficulty. Studying moral exemplars will provide the necessary corrective to the "no-win" Mountain Terrorist Exercise.

1.2 Ethics of Teamwork²

- Ethics of Team Work
- William J. Frey (working with material developed by Chuck Huff at St. Olaf College
- Centro de la Etica en las Profesiones
- University of Puerto Rico Mayaguez

²This content is available online at < http://cnx.org/content/m13760/1.17/>.

1.2.1 Module Introduction

Much of your future work will be organized around group or team activities. This module is designed to prepare you for this by getting you to reflect on ethical and practical problems that arise in small groups like work teams. Four issues, based on well-known ethical values, are especially important. How do groups achieve justice (in the distribution of work), responsibility (in specifying tasks, assigning blame, and awarding credit), reasonableness (ensuring participation, resolving conflict, and reaching consensus), and honesty (avoiding deception, corruption, and impropriety)? This module asks that you develop plans for realizing these moral values in your group work this semester. Furthermore, you are provided with a list of some of the more common pitfalls of group work and then asked to devise strategies for avoiding them. Finally, at the end of the semester, you will review your goals and strategies, reflect on your successes and problems, and carry out an overall assessment of the experience.

1.2.2 Module Activities

- 1. Groups are provided with key ethical values that they describe and seek to realize thorugh group activity.
- 2. Groups also study various obstacles that arise in collective activity: the Abilene Paradox, Groupthink, and Group Polarization.
- 3. Groups prepare initial reports consisting of plans for realizing key values in their collective activity. They also develop strategies for avoiding associated obstacles.
- 4. At the end of the semester, groups prepare a self-evaluation that assesses success in realizing ethical values and avoiding obstacles.
- 5. Textboxes in this module describe pitfalls in groups activities and offer general strategies for preventing or mitigating them. There is also a textbox that provides an introductory orientation on key ethical values or virtues.

1.2.3 A Framework for Value-Integration

The objective of this module is to teach you to teach yourselves how to work in small groups. You will develop and test procedures for realizing value goals and avoiding group pitfalls. You will also use Socio-Technical System Analysis to help you understand better how to take advantage of the way in which different environments enable groups activities and to anticipate and minimize the way in which other environments can constrain or even oppose group activities.

- **Discovery**: "The goal of this activity is to 'discover' the values that are relevant to, inspire, or inform a given design project, resulting in a list of values and bringing into focus what is often implicit in a design project." [Flanagan et al. 323]. Discovery of group values is a trial and error process. To get started, use the ADEM Statement of Values or the short value profiles listed below.
- **Translation**: "[T]ranslation is the activity of embodying or expressing...values in a system design. Translation is further divided into operationalization, which involves defining or articulating values in concrete terms, and implementation which involves specifying corresponding design features" [Flanagan et al., 338]. You will operationalize your values by developing profiles. (See below or the ADEM Statement of Values for examples.) Then you will implement your values by developing realization procedures. For example, to realize justice in carrying out a group task, first we will discuss the task as a group, second we will divide it into equal parts, third, forth, etc.
- Verification: "In the activity of verification, designers assess to what extent they have successfully implemented target values in a given system. [Strategies and methods] may include internal testing among the design team, user testing in controlled environments, formal and informal interviews and surveys, the use of prototypes, traditional quality assurance measures such as automated and regression-oriented testing and more" [Flanagan et al., 344-5]. You will document your procedures in the face of

different obstacles that may arise in your efforts at value-realization. At the end of your semester, you will verify your results by showing how you have refined procedures to more effectively realize values.

The framework on value realization and the above-quoted passages can be found in the following resource: M. Flanagan, D. Howe, and H. Nissenbaum, "Embodying Values in Technology: Theory and Practice," in **Information Technology and Moral Philosophy**, Jeroen van den Hoven and John Weckert, Eds. Cambridge, UK: Cambridge University Press, 2008, pp. 322-353.

1.2.4 Value Profiles for Professional Ethics

- 1. Definition A value "refers to a claim about what is worthwhile, what is good. A value is a single word or phrase that identifies something as being desirable for human beings." Brincat and Wike, Morality and the Professional Life: Values at Work
- 2. **Reasonableness** Defusing disagreement and resolving conflicts through integration. Characteristics include seeking relevant information, listening and responding thoughtfully to others, being open to new ideas, giving reasons for views held, and acknowledging mistakes and misunderstandings. (From Michael Pritchard, Reasonable Children)
- 3. **Responsibility** The ability to develop moral responses appropriate to the moral issues and problems that arise in one's day-to-day experience. Characteristics include avoiding blame shifting, designing overlapping role reponsibilities to fill responsibility "gaps", expanding the scope and depth of general and situation-specific knowledge, and working to expand control and power.
- 4. **Respect** Recognizing and working not to circumvent the capacity of autonomy in each individual. Characteristics include honoring rights such as privacy, property, free speech, due process, and participatory rights such as informed consent. Disrespect circumvents autonomy by deception, force, or manipulation.
- 5. **Justice** Giving each his or her due. Justice breaks down into kinds such as distributive (dividing benefits and burdens fairly), retributive (fair and impartial administration of punishments), administrative (fair and impartial administration of rules), and compensatory (how to fairly recompense those who have been wrongfully harmed by others).
- 6. Trust According to Solomon, trust is the expectation of moral behavior from others.
- 7. **Honesty** Truthfulness as a mean between too much honesty (bluntness which harms) and dishonesty (deceptiveness, misleading acts, and mendaciousness).
- 8. **Integrity** A meta-value that refers to the relation between particular values. These values are integrated with one another to form a coherent, cohesive and smoothly functioning whole. This resembles Solomon's account of the virtue of integrity.

1.2.5 Exercise 1: Developing Strategies for Value Realization

Directions

- 1. Identify value goals. Start with two or three. You can add or subtract from these as the semester progresses.
- 2. Give a brief description of each using terms that reflect your group's shared understandings. You may use the descriptions in this module or those in the ADEM Statement of Values but feel free to modify these to fit your group's context. You could also add characteristics and sample rules and aspirations.
- 3. For each value goal, identify and spell out a procedure for realizing it. See the examples just below for questions that can help you develop value procedures for values like justice and responsibility.

Examples

• Design a plan for realizing key moral values of team work. Your plan should address the following value-based tasks

- How does your group plan on realizing justice? For example, how will you assign tasks within the group that represent a fair distribution of the work load and, at the same time, recognize differences in individual strengths and weaknesses? How does your group plan on dealing with members who fail to do their fair share?
- How does your group plan on realizing responsibility? For example, what are the responsibilities that members will take on in the context of collective work? Who will be the leader? Who will play devil's advocate to avoid groupthink? Who will be the spokesperson for the group? How does your group plan to make clear to each individual his or her task or role responsibilities?
- How does your group plan on implementing the value of reasonableness? How will you guarantee that each individual participates fully in group decisions and activities? How will you deal with the differences, non-agreements, and disagreements that arise within the group? What process will your group use to reach agreement? How will your group insure that every individual has input, that each opinion will be heard and considered, and that each individual will be respected?
- How does your group plan on implementing the value of (academic) honesty? For example, how will you avoid cheating or plagiarism? How will you detect plagiarism from group members, and how will you respond to it?
- Note: Use your imagination here and be specific on how you plan to realize each value. Think preventively (how you plan on avoiding injustice, irresponsibility, injustice, and dishonesty) and proactively (how you can enhance these values). Don't be afraid to outline specific commitments. Expect some of your commitments to need reformulation. At the end of the semester, this will help you write the final report. Describe what worked, what did not work, and what you did to fix the latter.

1.2.6 Obstacles to Group Work (Developed by Chuck Huff for Good Computing: A Virtue Approach to Computer Ethics)

- 1. The **Abilene Paradox**. "The story involves a family who would all rather have been at home that ends up having a bad dinner in a lousy restaurant in Abilene, Texas. Each believes the others want to go to Abilene and never questions this by giving their own view that doing so is a bad idea. In the Abilene paradox, the group winds up doing something that no individual wants to do because of a breakdown of intra-group communication." (From Huff, Good Computing, an unpublished manuscript for a textbook in computer ethics. See materials from Janis; complete reference below.)
- 2. **Groupthink**. The tendency for very cohesive groups with strong leaders to disregard and defend against information that goes against their plans and beliefs. The group collectively and the members individually remain loyal to the party line while happily marching off the cliff, all the while blaming "them" (i.e., outsiders) for the height and situation of the cliff. (Also from Huff, **Good Computing**, an unpublished manuscript for a textbook in computer ethics.)
- 3. Group Polarization. Here, individuals within the group choose to frame their differences as disagreements. Framing a difference as non-agreement leaves open the possibility of working toward agreement by integrating the differences or by developing a more comprehensive standpoint that dialectally synthesizes the differences. Framing a difference as disagreement makes it a zero sum game; one's particular side is good, all the others bad, and the only resolution is for the good (one's own position) to win out over the bad (everything else). (Weston provides a nice account of group polarization in Practical Companion to Ethics. This is not to be confused with Cass Sunstein's different account of group polarization in Infotopia.)
- 4. Note: All of these are instances of a social psychological phenomenon called conformity. But there are other processes at work too, like group identification, self-serving biases, self-esteem enhancement, self-fulfilling prophecies, etc.

More Obstacles to Group Work

• Free Riders: Free riders are individuals who attempt to "ride for free" on the work of the other

members of the group. Some free riders cynically pursue their selfish agenda while others fall into this pitfall because they are unable to meet all their obligations. (See conflict of effort.)

- **Outliers**: These are often mistaken for free riders. Outliers want to become participants but fail to become fully integrated into the group. This could be because they are shy and need encouragement from the other group members. It could also be because the other group members know one another well and have habitual modes of interaction that exclude outsiders. One sign of outliers; they do not participate in group social activities but they still make substantial contributions working by themselves. ("No, I can't come to the meeting—just tell me what I have to do.")
- Hidden Agendas: Cass Sunstein introduces this term. A group member with a "hidden agenda" has something he or she wants to contribute but, for some reason or other, hold back. For example, this individual may have tried to contribute something in the past and was "shot down" by the group leader. The next time he or she will think, "Let them figure it out without me."
- Conflict of Effort: conflict of Effort often causes an individual to become a free rider or an outlier. These group members have made too many commitments and come unraveled when they all come due at the same time. Students are often overly optimistic when making out their semester schedules. They tightly couple work and class schedules while integrating home responsibilities. Everything goes well as long as nothing unusual happens. But if a coworker gets sick and your supervisor asks you to come in during class times to help out, or you get sick, it becomes impossible to keep the problem from "spilling out" into other areas of your schedule and bringing down the whole edifice. Developing a schedule with periods of slack and flexibility can go a long way toward avoiding conflict of effort. Groups can deal with this by being supportive and flexible. (But it is important to draw the line between being supportive and carrying a free rider.)

Best Practices for Avoiding Abilene Paradox

- At the end of the solution generating process, carry out an anonymous survey asking participants if anything was left out they were reluctant to put before group.
- Designate a Devil's Advocate charged with criticizing the group's decision.
- Ask participants to reaffirm group decision–perhaps anonymously.

Best Practices for Avoiding Groupthink (Taken from Janis, 262-271)

- "The leader of a policy-forming group should assign the role of critical evaluator to each member, encouraging the group to give high priority to airing objections and doubts."
- "The leaders in an organization's hierarchy, when assigning a policy-planning mission to a group, should be impartial instead of stating preferences and expectations at the outset."
- "Throughout the period when the feasibility and effectiveness of policy alternatives are being surveyed, the policy-making group should from time to time divide into two or more subgroups to meet separately...."
- One or more outside experts or qualified colleagues within the organization who are not core members of the policy-making group should be invited to each meeting ... and should be encouraged to challenge the views of the core members."
- "At every meeting devoted to evaluating policy alternatives, at least one member should be assigned the role of devil's advocate."

Best Practices for Avoiding Polarizatoin (Items taken from "Good Computing: A Virtue Approach to Computer Ethics" by Chuck Huff, William Frey and Jose Cruz (Unpublished Manuscript)

- Set Quotas. When brainstorming, set a quota and postpone criticism until after quota has been met.
- Negotiate Interests, not Positions. Since it is usually easier to integrate basic interests than specific positions, try to frame the problem in terms of interests.
- **Expanding the Pie.** Conficts that arise from situational constraints can be resolved by pushing back those constraints through negotiation or innovation..

- Nonspecific Compensation. One side makes a concession to the other but is compensated for that concession by some other coin.
- Logrolling. Each party lowers their aspirations on items that are of less interest to them, thus trading off a concession on a less important item for a concession from the other on a more important item.
- **Cost-Cutting.** One party makes an agreement to reduce its aspirations on a particular thing, and the other party agrees to compensate the party for the specific costs that reduction in aspirations involves.
- **Bridging.** Finding a higher order interest on which both parties agree, and then constructing a solution that serves that agreed-upon interest.

1.2.7 Exercise 2 - Avoiding the Pitfalls of Group Work

- Design a plan for avoiding the pitfalls of group work enumerated in the textbox above.
- How does your group plan on avoiding the Abilene Paradox?
- How does your group plan on avoiding Group Polarization?
- How does your group plan on avoiding Groupthink?
- Note: Use imagination and creativity here. Think of specific scenarios where these obstacles may arise, and what your group can do to prevent them or minimize their impact.

1.2.8 Exercise 3: Socio Technical System

Your group work this semester will take place within a group of nested or overlapping environments. Taken separately and together, these will structure and channel your activity, facilitating action in certain circumstances while constraining, hindering, or blocking it in others. Prepare a socio-technical system table for your group to help structure your group self-evaluation. Include hardware/software, physical surroundings, stakeholders (other groups, teacher, other classes, etc.), procedures (realizing values, avoiding pitfalls), university regulations (attendance), and information structures (collecting, sharing, disseminating)

Some things about Socio-Technical Systems

- 1. Socio-Technical System Analysis provides a tool to uncover the different environments in which business activity takes place and to articulate how these constrain and enable different business practices.
- 2. A socio-technical system can be divided into different components such as hardware, software, physical surroundings, people/groups/roles, procedures, laws/statutes/regulations, and information systems.
- 3. But while these different components can be distinguished, they are in the final analysis inseparable. STSs are, first and foremost, systems composed of interrelated and interacting parts.
- 4. STSs also embody values such as moral values (justice, responsibility, respect, trust, integrity) and non-moral values (efficiency, satisfaction, productivity, effectiveness, and profitability). These values can be located in one or more of the system components. They come into conflict with one another causing the system to change.
- 5. STSs change and this change traces out a path or trajectory. The normative challenge of STS analysis is to find the trajectory of STS change and work to make it as value-realizing as possible.

Socio-Technical System Table for Groups

Hardware/Softw	andenysical roundings	Sur-	Stakeholders	Procedures	University Regulations	Information Structures
continued on next page						

[1	
Think about	How does the	Think about	Name but	What are	There is a
the new role	classroom and	other teachers.	don't describe	university reg-	wealth of in-
for your smart	the arrange-	classes super-	in detail the	ulations that	formation and
nhones in	ment of objects	visors jobs	value-realizing	will have an	skill locked
phones monly	within it con	and other in	varue-realizing	impost on your	in each of
group work	within it con-	and other in-	procedures .	Impact on your	in each oi
in class. Will	strain and	dividuals that	your group is	group work.	your group's
you be using	enable group	can have an	adopting.	For example,	members. How
Google Docs	activities?	impact on your		switches be-	will you un-
to exchange		ability to carry		tween MWF	leash these
documents?		out group		and TTH	and telescope
		assignments		schedules	them into
				schedules.	
					group work
					and activities?
					How, in other
					words, will you
					work to max-
					imize group
					synergies
					and mini-
					mize group
					disadvantages?
1	1	1		1	

Table 1.2

Exercises 1-3 compose the Preliminary Self-Evaluation which is due shortly after semesterlong groups are formed. Exercise 4 is the close-out group self evaluation which is due at the end of the semester.

1.2.9 Exercise 4: Prepare a Final, Group Self-Evaluation

- Due Date: One week after the last class of the semester when your group turns in all its materials.
- Length: A minimum of five pages not including Team Member Evaluation Forms
- Contents:
- 1. Restate the Ethical and Practical Goals that your group developed at the beginning of its formation.
- 2. Provide a careful, documented assessment of your group's success in meeting these goals. (Don't just assert that "Our group successfully realized justice in all its activities this semester." How did your group characterize justice in the context of its work? What specific activities did the group carry out to realize this value? What, among these activities, worked and what did not work?)
- 3. Identify obstacles, shortcomings or failures that you group experienced during the semester. How did these arise? Why did they arise? How did you respond to them? Did your response work? What did you learn from this experience?
- 4. Assess the plans you set forth in your initial report on how you intended to realize values and avoid pitfalls. How did these work? Did you stick to your plans or did you find it necessary to change or abandon them in the face of challenges?
- 5. Discuss your group's procedures and practices? How did you divide and allocate work tasks? How did you reach consensus on difficult issues? How did you ensure that all members were respected and allowed significant and meaningful participation? What worked and what did not work with respect to these procedures? Will you repeat them in the future? Would you recommend these procedures as best practices to future groups?
- 6. What did you learn from your experience working as a team this semester? What will require further reflection and thought? In other words, conclude your self-evaluation with a statement that summarizes your experience working together as a team this semester.

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