Writing or Discussion Questions

1. Do you tend to agree with this argument or not?
2. What is good about it?
3. If you are familiar with these fallacies, do any of the following apply?
   - hasty generalization
   - false dilemma
   - loaded question
   - questionable cause

The Hasty Generalization

Hasty generalization is the fallacy of drawing a conclusion from insufficient or unrepresentative evidence.

A fallacy found most often in inductive reasoning, the hasty generalization is a premature conclusion drawn before enough evidence has been gathered and interpreted. It is a conclusion inferred about all members of a group from a sample that is too small or atypical.

1. All used car salesmen are crooks. One of them sold me a lemon.
2. All old people are cheap. They never give me a fair tip when I park their cars.
3. No car mechanic can be trusted. They are only out to make a buck.
4. I waited half an hour for him to get dressed. Men are really vainer than women.
5. My brother-in-law is tall and skinny like all Chinese.

In all five cases, the samplings are too small to justify the conclusions drawn from them. Hasty generalizations are very familiar; we tend to make them when we feel lazy, angry, or impatient. They spare us having to wrestle with complexities. They also lead us into stereotypes.

Hasty generalizations occur in two major overlapping variations; both break the rules of inductive or statistical reasoning studied in the last chapter:

1. **Drawing a premature conclusion from too few samples.**
   - All symphony concerts are boring. I will never go to another one again.

- My new Zippo car developed a transmission problem after six months. Never buy a Zippo.
- That lady didn't thank me when I opened the door for her. She is just a snob.
- My brother missed the freeway turnoff. He's an airhead.
- Only two of my neighbors greeted me when I moved into this apartment. This is an unfriendly building.
- Has anyone else noticed that when you drive through this town there are police hiding at every corner trying to trap distracted drivers? Yesterday I drove through two different speed traps.

Yet even small samples need not always be inadequate. If your two cats keel over directly after eating from the same bowl of cat chow, you would not want to try it out on any more of your pets.

2. **Generalizing from unrepresentative or atypical samples.**

All of the above examples are not only based on too few examples, but these could also be atypical. The Zippo car could have been a rare lemon, the lady and the neighbors could have been preoccupied that day, your brother could be in love, and two police traps don't equate to one on every corner. Representative samples are those that accurately reflect the members of the whole population you want to sample. Thus if you wanted to find out if the whole state of California might vote democratic in the next election, you would not limit your sampling to Berkeley and San Francisco, two of the most liberal cities in the United States.

Most often we make hasty generalizations on the basis of assumptions, missing information, and careless interpretations. Jose learned recently that the tuition cost for U.S. medical students was, on average, $30,000 a year at a public institution. Although his family was not rich, *he concluded that with scholarships and loans, his medical tuition could be easily manageable.*

What Jose does not know is that the median loan for a public medical school comes to $100,000. This amount, without the cost of interest, adds on a heavy educational expense even without counting other school expenses, much less further specialty education. Thus the investment is a gamble, although physicians may have a better chance of eventually gaining sufficient income to pay off their debts.

After doing more research, Jose might rephrase his generalization as follows: *It appears that my medical school tuition may be barely—but not easily—manageable while I am an undergraduate. This is provided I have the help of scholarships and loans and, most important, provided I can eventually pay off my loans.*

When we generalize, we need to be careful in our use of the words *all, every, everyone,* and *no*. A single exception will disqualify any generalization preceded by one of these words, which are called *quantifiers*. We need to test to see if what we actually mean calls for *qualifiers* such as *in this case, in some cases,* or *it appears* or *seems* or *suggests that,* or *provided that.* A careful use of quantifiers and qualifiers can often make the difference between an accurate statement and a fallacious one.

Class Discussion

Which of the following statements contain hasty generalizations? Underline these generalizations and explain why its use of quantifiers or qualifiers seems careless or based on insufficient sampling.

1. China is preparing its children to rule the world. In 2011 *The Economist* reported that 300 million Chinese were learning or had learned English. How many American school children are learning Chinese, or for that matter, any other language?
2. Every postal employee in this town is Filipino. Filipinos must have some secret inside connections.
3. Because Asian students are now becoming the majority ethnic group accepted for math and science studies into West Coast graduate schools, this suggests that Asians may be either genetically gifted in abstract thinking and/or culturally encouraged in it.
4. Northern California had unseasonable weather with cold winds and chilly temperatures from March through August over the last two years. The weather has permanently changed for the worse.
5. The lower economic people are not holding up their end of the deal. These people are not parenting. They are buying things for kids—$800 sneakers—for what? And won't spend $200 for *Hooked on Phonics.* (Bill Cosby on *Jim Lehrer News Hour,* July 15, 2004)
6. Majoring in education is not a good idea. You enter a profession with no respect either from the government or the public. Parents think you are their babysitter and resent your time off. Politicians win votes by telling you how to do your job.

The False Dilemma

The **false dilemma** is an either-or argument that makes a dilemma of two choices when there are other alternatives.

A false dilemma pretends or assumes that there are only two ways of looking at a situation—or that only one of two choices can be made—when other alternatives do exist. In the past such either-or questions appeared on personality assessment tests:

1. When you see a friend coming toward you on the sidewalk, do you rush forward to greet the person or do you cross to the other side of the street?
2. Do you act impulsively rather than deliberately?
3. Do you have only a few friends or a large circle of friends?

Now how do you answer these questions if sometimes you rush toward people and sometimes you withdraw? Or what if you are sometimes consistent and sometimes impulsive? Or if sometimes, in some places, you have a lot of friends and sometimes you don't? What you want to say is "Not either/or but both/and."

Frequently false dilemmas appear in poll questions: "Are you for or against the war on drugs?" Such questions are convenient for tabulation purposes but do not allow for weighed discriminations that reflect actual opinion. You may be in favor of aggressive federal programs to prevent the use of heroin and cocaine, but not marijuana. Or maybe you would prefer that more funding be given to prevention and rehabilitation programs.

False dilemmas are usually constructed to steer a person toward a certain answer. They may contain an appeal to fear or bandwagon:

- Live free or die.
- America. Love it or leave it.
- When you have a headache, all you can do is reach for aspirin.
- Either you are with me or against me.
- The Cougar convertible: you'll either own one or want one.

In such cases, these arguments not only over-simplify but pressure for the "right" answer. Let's consider "America. Love it or leave it." Does this statement mean one can never disagree with something while also loving it? And is it American never to question?

Sometimes false dilemmas are also hasty generalizations such as the following: "Mothers of young children can either have careers or stay at home. But they can't expect both to have careers and to raise happy children." These two either/or generalizations contain a few assumptions.

1. A father supports the family.
2. A mother (or father) has to leave home to pursue a career.

3. Parents pay attention to their children when at home.
4. Another family member or child-care worker cannot give a young child what it needs.

A false dilemma suggests that there is only one right choice. However, a critical thinker reserves the right to use imagination and consider all variables and options.

Class Discussion

Which of these examples are false dilemmas and which seem to you to be true dilemmas?

1. Your physician says that you can choose to have cataract surgery or not, but your vision will only continue to get worse.
2. Your son tells you that if you don't buy him an iPad, he will not speak to you anymore.
3. The President said that if any bill to raise taxes comes to his desk, he will veto it.
4. We can either bomb this country with a pre-emptive strike, or we can wait until they develop a nuclear bomb to use on us.
5. You are in Tibet on a bus that is halted by a landslide that covers the mountain road. Your tourist guide tells you that you can either stay in the bus or join everyone else in hiking to the next town.

The Questionable Statistic

The **questionable statistic** is the fallacy of offering evidence through statistics that are faulty, misleading, or unknowable.

Inductive reasoning requires some knowledge of statistics and how statistics can be used or misused as evidence. As you learned earlier, to evaluate whether statistics are used fairly, you need to look for such things as the size of the sample, whether it was representative and random, whether a margin for error was considered, and what the margin was. These are only some of the basics involved in assessing the reliability of statistics. The fallacy of the questionable statistic shows confusion or deception in the use of statistics, even to the point of citing figures that would be impossible to obtain.

Recall this use of statistics, quoted earlier:

> I would guess that the average office female makes 509 visits to the lavatory to a male's 320, and spends 10.7 minutes there to a male's 2.5. What management is going to put up with this "primp time" featherbedding at equal pay?

This example uses statistics in a slightly mocking manner, suggesting that each estimate can be this precise because everyone knows that these claims are true. From there it jumps to a conclusion (in the form of a question) that lacks any evidence to back up the claim about either featherbedding or equal pay.

When statistical claims are false or deliberately misleading, they are not always easy to detect unless we have knowledge of the rules of statistics. A sure warning sign is *unattributed figures,* or figures given without a citation of source, purpose, and methods of calculation.

> Why isn't alcohol illegal? It has the same rate of addiction (10 percent) as cocaine.

In this case, a critical thinker would want to know how *addiction* is being defined, how this 10 percent figure was derived, and who conducted the study.

Here is another example, also uncited, that seems suspicious:

> Illegal aliens cost American citizens $5 billion a year.

First, the word *cost* is undefined; what expenses does this term cover? Second, "illegal aliens" is a biased term. Nevertheless, if they are illegal, how were they located and counted in order to estimate their cost to American citizens? Moreover, what costs were included in this estimate? Without all this information, the reader begins to suspect that the $5 billion is an *unknowable statistic.*

Here is a clearer example of unknowable statistics:

> If we legalize drugs, drugs would become much cheaper, at least one-fifth the cost. Then five times as many people would buy them. Then we would have five times as many addicts, and instead of 100,000 addicted babies born to addicted mothers each year, we would have a million.

This argument offers no proof for the claim that if drugs were legal, they would be cheaper. From there, the figure of "at least one-fifth the cost" seems to be drawn out of a hat. Next are repetitions of *five,* concluding with the dreadful statistic of 1 million addicted babies. The argument commits the fallacy of the unknowable statistic, not once but four times, seeking to establish as factual guesswork calculations for a hypothetical situation with too many variables and unknowns.

Sometimes it is obvious that the statistics quoted could never have been gathered. Consider these examples:

- Two-thirds of all thefts are never detected.
- Two-thirds of all people have thoughts they would never admit to.
- Loss in federal taxes from those who barter instead of paying cash for goods is 40 billion annually.

Class Discussion

What questions would you ask about the statistics used in the following statements?

1. Only 106 of an estimated 895 cases of rape that occurred in New England last year were reported.
2. After abortion was legalized in the 1970's, the number of abortions increased dramatically. To cut down on abortions, they must be made illegal.
3. It is a known fact that people use only 10 percent of their actual potential.
4. *Quote:* "Since January 2008 the private sector has lost nearly 8 million jobs while local, state and federal governments added 590,000." (Tim Pawlenty, 13 December 2010, *Wall Street Journal*)

   Summary of comment on quote by PolitiFact.com: The private sector did lose approximately 7.3 million jobs, but the 590,000 figure reflects only the federal hiring of temporary census takers from January 2009 to May 2009. (*Truth-O-Meter,* "Tim Pawlenty repeats questionable statistic on growth of federal workforce". Politifact.com)
5. The average person will live to be 129 by the year 2100.
6. According to *The Economist* magazine, the world's 4 biggest employers in 2010 were 1) U.S. Department of Defense, 3.2 million; 2) Chinese People's Liberation Army, 2.3 million; 3) Walmart, 2.1 million; 4) MacDonald's, 1.7 million. ("Defending Jobs" 12 December, 2011, *The Economist online*)
7. Statistics shows teen age pregnancy drops off at age 25.

Contradictions

Contradictions is the fallacy of offering logically incompatible claims or evidence.

In the Sipress cartoon, the daughter surprises her mother by pointing out her use of two contradictory claims or premises. The daughter implies that one of the claims must thus be false. The mother seems confused. And the reader may wonder if this is a paradox, i.e., that both claims, though contradictory, are still true.

Here are some clearer examples of reasoning from contradictory claims:

- All men are equal; it is just that some are more equal than others.
- Children are good except when they are bad.
- I am not addicted to tobacco; I have stopped lots of times.

We often hear contradictions in political discourse. If someone wants to please as many different people as possible, inconsistencies result. In one year and in one state a candidate might say he or she is prochoice while in another place and time, prolife. Then there are contradictions within statements:

> Of course I cannot approve of hecklers disrupting my opponent's speeches. However, I would also say that in a democracy, they also have the right to be heard as much as the speaker.

In this case, the politician needed to defend himself from suspicion of creating or benefiting from such a tactic. Thus he declares his disapproval

while also taking the high road of defending the hecklers' right to free speech. He forgets to consider the rights of the audience to hear the speaker or how a democracy might function without rules of order.

Sometimes contradictions provide humor, especially when they stem from gaps of attention:

- "The reforms we seek would bring greater competition, choice, savings, and inefficiencies to our health care system." (Barack Obama, Health Care Roundtable, 20 July, 2009)
- "On this Memorial Day, as our nation honors its unbroken line of fallen heroes—and I see many of them in the audience here today—our sense of patriotism is particularly strong." (Barack Obama. *About .com.* Political humor)

Class Discussion

Explain the contradictions you find in the following examples.

1. I love mankind; it's just that I can't stand people.
2. I'd like to order one Big Mac, large fries, twenty chicken nuggets, two apple pies, one chocolate sundae, and a diet Coke, please.
3. Capital punishment is our society's recognition of the sanctity of human life. (Sen. Orrin Hatch, R-Utah)
4. The more killing and homicides you have, the more havoc it prevents. (Richard M. Daley, mayor of Chicago)
5. Today the mayor found a solution for the problem of the homeless camped on our city streets. He told them to go home.
6. The meeting planned by the City Council for this evening to discuss threats was canceled because of threats.

The Loaded Question

The **loaded question** is the fallacy of using a biased question that contains tricky hidden assumptions.

We are all familiar with the loaded questions, "Have you stopped beating your wife?" and "Are you still a heavy drinker?" In such cases, guilt is assumed but not yet proven. An answer of either "Yes" or "No" would provide proof of guilt. Thus the person questioned needs to be alert enough

to recognize the trap of assumed guilt before falling into it. Here are some other examples of loaded questions:

1. Did you enjoy spoiling our party?
2. Are you happy with the mess you made?
3. Are you still taking tranquillizers?
4. Did you write this piece of trash?

Discussion Break Question

How would you respond to any or several of these questions? What would you say in order not to fall into their traps?

In arguments, loaded questions can be used to control opponents and put them on the defensive.

> "Do you believe we should allow TV ads aimed at toddlers to condition them to crave junk food?"

Here an answer of "Yes" puts one in an untenable position. And an answer of "No" would make it difficult to defend your opposing argument. You might have planned to claim, for instance, that The First Amendment protects TV ads. Yet the question is unfair in that it assumes what it must prove, i.e., that toddlers can be conditioned by TV ads to crave junk food.

Loaded questions, as we have seen before, also appear in biased polling questions:

- Do you feel a school voucher program should be permitted to dismantle U.S. public schools?
- Do you subscribe to the radical idea that we should reduce the government to a size small enough to drown in a bathtub?

Class Discussion

Which of the following are loaded questions and which are not?

1. Do you feel that, in order to receive welfare, women should have to abandon their children and work at minimum wage jobs?
2. Where did you hide the murder weapon?
3. When are you going to stop asking me so many silly questions?
4. Are you going to be good and do what I say?
5. What would you like for dinner tonight?
6. What do you think about the new brain research that says that emotional stability is more important than IQ in determining success in life?

7. Forty-three percent of U.S. grade school children are reading below grade level. Why? Is this because they are not learning phonics?
8. What will you do on the day you discover our number one brand of arthritis medication? (Ad with picture of a woman running along a beach.)
9. Why do Democrats hate America?
10. Clerk to customer who can't decide what shirt to buy: "Shall this be cash or credit?"

The Weak Analogy

The **weak analogy** is the fallacy of basing an argument on a comparison of two things with some similarities but also major differences that are overlooked or ignored. (The Greek word *analogos* means "according to ratio.")

As you learned earlier, an analogy is a form of reasoning in which two things are compared, or a ratio is explained. A good analogy can help us better understand an abstract principle. If one uses the analogy of a pump to explain the heart, the heart does not have to physically look like a metal pump with a handle, but it should at least function on the same principles. If we want to understand subatomic particles, it helps us to consider them as empty space that is distorted, pinched up, concentrated into point-like ripples of energy. This analogy permits a visualization of the invisible.

In a weak analogy there are not enough essential parallels to make a good ratio or good argument. In addition, significant differences can be overlooked or disregarded.

> Well, it's too bad that so many Indians had to die when the white men settled America. But you can't make an omelet without breaking a few eggs.

How do we decide whether an analogy is strong or weak? One way is to first write out the equation that the analogy offers. Then compare the chief characteristics of each under two columns labeled Similarities and Differences:

> **Claim:** There is no convincing evidence to show that cigarette smoking is harmful. Too much of anything is harmful. Too much applesauce is harmful. (cigarette manufacturer)
>
> **Equation:** Too much cigarette smoking = too much applesauce.

When we see the equation, we sense that something is not right here. Now let's compare the similarities and differences. If the differences far outweigh the similarities, you have a false analogy.

Similarities	Differences
1. Ingested into body	1. One ingested through lungs 2. One a food, other not a food 3. One addictive, other not 4. Each affect body and consciousness differently 5. No evidence applesauce causes cancer, but evidence that cigarette smoking does

DISCOVERY EXERCISE

Evaluating Analogies

Use the procedure just demonstrated to analyze the following analogies.

1. There are no grounds for the claim that the incidence of lung cancer is higher in this county because of the presence of our oil refineries. Cancer can be caused by all kinds of things. People don't stop eating peanut butter because it causes cancer, do they? (Biologist working for an oil refinery.)
2. Who is the endangered species? The spotted owl or the loggers of the Northwest?
3. We welcome immigrants because our country needs them the way old soil needs new seeds.
4. Nature is cruel. It is our right to be cruel as well. (Adolf Hitler)
5. Vote for the incumbent. Don't change horses in midstream!

Class Discussion

Rate the following examples as either good analogies or weak analogies and tell why.

1. If a ban on same-sex marriages violates their civil rights, then the refusal to issue a driver's license to a blind man violates his civil rights as well. After all, gay couples cannot procreate any more than a blind man can safely drive a car in traffic. (Letter to the editor, *San Francisco Chronicle,* March 16, 2005)

2. Courtship is like a football game. The only thing that matters is to win.
3. Measuring a country's health by measuring its gross domestic product is rather like measuring a person's health by how much medical care he buys. Thus, a person who just had bypass surgery and cancer radiation treatments would be considered healthy.
4. If children cannot be executed for crimes, why should we execute retarded people with the minds of children?
5. "Any activity creates wastes. Making a dinner salad, baking a pie, burning coal, cleaning bedpans in a hospital, and handling nuclear materials. Nuclear wastes are no more dangerous than many other wastes." (Spiro Agnew)

Questionable Cause

Questionable cause is the fallacy of claiming a causal connection between events without reasonable and sufficient evidence to support the claim.

Inductive reasoning is used to speculate about cause or to determine cause. The criminal justice system uses inductive reasoning to gather evidence to determine guilt or innocence. Faulty reasoning about causality can result in the arrest and conviction of an innocent person or the release of a guilty person. A trial presents evidence to the jury as support for causality in a crime.

Questionable cause is a fallacious argument that oversimplifies causality and insists on a causal connection between events with too little evidence. At times the assignment of cause is clearly false as shown in the little Sufi teaching stories about a character named Nasrudin. In one of these stories Nasrudin was seen throwing crumbs around his house. When someone asked what he was doing, Nasrudin answered, "I'm keeping the tigers away." The person then objected, "But there aren't any tigers in this part of the world!" And Nasrudin replied, "That's right. That's because it is so effective!" In another story Nasrudin boasts to a friend that he once caused an entire tribe of desert nomads to run. When asked how he did it, he said, "I just ran and they ran after me."

Blaming the wrong target is one kind of false cause. One variety is scapegoating. The term *scapegoating* refers to the ancient practice of

offering animal or human sacrifices for the appeasement of some god. Although we may now think of such rituals as primitive, the practice still continues in the form of seeking to appease public discontent by finding one person to blame and punish for a complex problem.

Another version of questionable cause is known in Latin as *post hoc ergo propter hoc,* meaning "after this, therefore because of this." The post hoc fallacy reasons, in a childlike way, that because one event happened after another event, the second was caused by the first.

- First my cat ate a mouse, and then she had kittens. The mouse gave her the kittens.
- He committed the murder, but he couldn't help himself because he was under the influence of a sugar high from Twinkies.
- Ever since I bought this house, I have had nothing but bad luck. I have got to sell this house.

False cause arguments can center on chicken-or-egg questions. The fictional character Nasrudin confuses us with his own confusion as he attributes his running away from the Bedouins as the cause of their running after him. Here are two contrasting chicken-or-egg arguments:

- The violence on the home screen follows the violence in our lives. (Del Reisman, president, Writers Guild of America)
- Violence on TV is definitely a cause of the growing violence in our lives. It presents violence as an appropriate way to solve interpersonal problems, to get what you want out of life, avenge slights and insults and make up for perceived injustices. (Leonard D. Eron, professor of psychology)

Finally, all the examples of causal reasoning discussed here contain a familiar assumption that causality is only linear, that one effect must result from one cause. Since the 1990's the growth of interest in **systems thinking** has shown us how to see causality in more holistic terms of complex interlocking and interrelated parts and cycles, relationships and dependencies. Systems thinking is ecological thinking that can lead to surprising conclusions. One example is the discovery that the wolf's predator role is actually essential to the health of the deer. When we try to protect deer by killing off all their wolf predators, this leads in turn to an overpopulation of the deer, overgrazing, and eventually mass deer starvation. Systems thinking shows us how to predict the complex far-reaching consequences of single actions on community, country, world, and environment. When we engage in systems thinking, we think more in terms of community and relationships.

Class Discussion

False or questionable cause is a fallacy frequently found in arguments. Analyze the following statements. Decide if you agree or disagree that they are examples of the fallacy of questionable cause and state why. Your answers may depend upon your beliefs and values.

1. The cause of the real estate meltdown in 2008 was all those people who took out loans on homes without being able to afford them.
2. The Iraq War was caused by Al Qaeda.
3. Forests are disappearing all over the world from being logged, burnt, cleared, and degraded. Yet forests serve as havens for animal life while providing humans with wood, employment, shelter, and oxygen.
4. One-in-six people in the world lack safe drinking water. Water-related illnesses are the leading cause of human sickness and death. ("The Facts About the Global Drinking Water Crisis," *Blue Planet Network*, 2010)
5. We have a stagnant economy because of too many government regulations that cause our businesses to hesitate to spend money.
6. Overspending by the Democrats is the cause of our huge national debt.

The Slippery Slope

Slippery slope is the fallacy of arguing, without sufficient proof, that if one event is allowed to occur, a disastrous and uncontrollable chain reaction will result. The slippery slope appeals to fear and urges agreement on the basis of a situation that contains too many variables and unknowns.

The slippery slope is another fallacy of causation. In this case the claim is made that permitting one event to occur would set off an uncontrollable chain reaction. In politics this is also called the domino theory: if one country falls, so will all the rest like a line of dominoes. This argument was often given as a reason in the 70's of why the United States should stay in Vietnam: If Vietnam fell to the communists, China would take over the rest of Asia. In the 1980's the same argument was cited for the U.S. presence in El Salvador: If El Salvador fell to the guerrillas, so would all of Central America and Mexico, thus jeopardizing the whole Western hemisphere. Although these domino predictions were possible worst case scenarios, there was not, even in those decades, sufficient evidence that they were inevitable. They did serve as appeals to fear to rally public support.

Here are three examples of arguments built on the fallacy of the slippery slope. All are fallacious in that the arguments are supported with exaggerations of dire consequences.

- If you offer people unemployment insurance, they will become lazy and expect the government to support them for life.
- Sex education in the schools leads to promiscuity, unwanted pregnancies, and cheating in marriages.
- If you teach critical thinking in an Indian university, the young people would go home and question, then disobey their parents. Their families would quarrel and break up. Then they would question their bosses and everyone else. The next thing you know the whole country would fall apart. (Comment by University of Bombay professor)

Class Discussion

Which of the following arguments are slippery slopes? Explain why or why not.

1. If you let him have an inch, he'll take a mile.
2. "Teens and young adults brought up from childhood with a continuous connection to each other and to information through the online world will be nimble, quick-acting multitaskers who count on the internet as their external brain and who approach problems in a different way from their elders, according to a survey of experts. But the survey also produced predictions that this generation will develop a thirst for instant gratification and quick fixes, a loss of patience, and a lack of deep-thinking ability." (Millennials and Hyperconnectivity," *PewResearch.org,* 1 March 2012)*
3. We are using about two-thirds of our oil supply right now to burn in cars and airplanes and trucks. But we're producing about 40 percent of what we use in this country. And we're using 25 percent of the entire world's production of oil right now and we only have five percent of the population. So what's going to happen when a country like China, for example, comes on line and begins to rise to the level of consumerism that we have in this country? They purchased about two million cars last year; we put about 17 million on the road. And as that goes up in China we're going to see an incredible increase in world demand for oil. And when demand goes up and supply does not keep pace with it, then the prices go up. And that's what we mean by the end of cheap oil. (Bill Allen, "The End of Cheap Oil," Editorial, *National Geographic,* 2004)
4. If I say "yes" to your request to take a make-up exam, then I'll have to say "yes" to everybody in the class. Then I will have to spend all my time preparing new exams and giving exams without any time left to teach.

*"Millennials will benefit and suffer due to their hyperconnected lives", http://pewinternet.org/Reports/2012/Hyperconnected-lives.aspx