

## Appendix 2

### The Top Ten Fallacies of All Time

First, we should say that we are not exactly reporting on a scientific study of reasoning errors. Far from it. We're simply listing for you what we think, based on our experience, are the top ten fallacies that crop up in spoken and written discourse. While we're disclaiming, we should point out that some of the items on our list are not really *errors* of reasoning, but *failures to reason at all*. We've included a remark or two for each, but we remind you that all of them are discussed at greater length in the text.

#### Ad Hominem/Genetic Fallacy

If it operated no place but in politics, ad hominem would still be among the most ubiquitous examples of flawed thinking. While the fact that a claim came from a prominent Democrat or Republican might be reason to suspect that it is political spin, we constantly see people refuse even to consider—and sometimes even to hear—claims from a political perspective not their own.

But what goes in politics also goes in other arenas. Adversaries in practically every field of endeavor put less, or no, stock in their opponents' claims. We've seen this happen in disputes between physical scientists and behavioral scientists, between factions of a single academic department and between members of the same family. If they're the enemy, they cannot be right.

#### Wishful Thinking

It may surprise some that this category makes the list, but in observing people's behavior, we've come to think that they frequently put a lot more trust in what they *want* to be true than in what they have sufficient evidence for. Advertising, our beliefs about famous people, and many other aspects of life play upon this tendency. How frequently do we see people buy products that claim they'll make them younger-looking or more attractive only to see no results? And then those same people will buy the next product that comes along, possibly with the same ingredients but with a bigger advertising budget or better-looking models. We can't explain this in any other way except the triumph of wishful thinking.

Neither of your authors is sure about capital punishment. But we'd seriously consider an exception for people who invent scams based on wishful thinking and milk elderly people out of money they've spent their lives saving up.

### “Argument” from Popularity

Operating in conjunction with wishful thinking, appeal to the authority of one's peers and predecessors accounts for a great proportion of the belief in the supernatural aspects of the world's religions down through history. This alone is sufficient to place it prominently on the list.

If a person thought that none of her peers believed in miracles, and she had never witnessed anything firsthand herself that she considered miraculous, what are the chances that she would believe in miracles in general? We believe it is very slight. But most people (well over half of Americans) do believe in miracles, and we're pretty sure such a belief rests at least in substantial part on the fact that most of one's peers share the belief.

### Hasty Generalizing

The human mind is quick to notice connections between and among things, events, people, and such. Often, its ability to latch on to similarities is a matter of survival. (“A snake like that bit Oog the other day, and he died. I'm leaving this one alone.”) But connections that we make “naturally” need to be sifted through our reasoning faculty. (“When I dreamed that it would rain on Easter, it did. Last night I dreamed the stock market would go up . . . I think I'll add to the portfolio.”) We must learn to distinguish psychological connections from logical ones and real causes from coincidence.

Some related fallacies fall under this headline: One is the mistake of making generalizations from evidence that is merely anecdotal. We are very quick to conclude that our own experience or that of our friends is sufficient to arrive at a conclusion about the entire world. But the fact that your friend had no trouble quitting smoking is no reason to think that others won't.

A second variation is drawing conclusions (or generalizing) based on a bad analogy. The fact that two (or more) things are alike in *some* way is not all by itself a reason to think they're alike in some other way. Analogous items have to be very carefully scrutinized for relevant similarities and dissimilarities before we can draw conclusions about one from the other.

A final variety of the fallacy of hasty generalizing, and a sad one, is the way the public (following the media) jump to conclusions about a person's guilt when in fact the person has merely been mentioned as a possible suspect. Examples range from the famous Sam Shepard case (on which the TV series and movie titled *The Fugitive* were based) to the case of Richard Jewell, who was actually a hero in the bomb incident at the 1996 Atlanta Olympics—he spotted the fateful knapsack and warned people away from what turned out to be a pipe bomb, but later his name was leaked as a suspect. Although he was soon cleared by the authorities, the stigma of suspicion stuck to him and he was hounded for months at ball games and other events. His hopes for a career in law enforcement went down the drain. This, and similar stories, are the result of a public that makes up its mind on the basis of mere slivers of information.

### **“Argument” from Outrage**

This category makes the list because of the increase in polarizing political discourse. The mere mention of Bill Clinton (on one hand) or George Bush (on the other) has the power to raise the blood pressure of large numbers of citizens. Animosity and bile have taken over from the presentation and evaluation of evidence, with the result that national political discussion has been on a downward trend for over a generation. We attribute at least part of the decline to the electronic media. Radio and television, although they had the potential to raise the level of public discourse, have had the opposite effect. (“Television is a medium,” said Ernie Kovacs, “because it is neither rare nor well done.”) Many television shows where politics are “discussed” have turned into shouting matches in which several morons compete for the loudest volume and sharpest insults. They may look vaguely like debates, but they are nothing of the sort. “Talk radio” is even worse, with meaningless statistics, false allegations, the spread of rumor, and general name-calling taking the place of argument and evidence. Most of these shows are designed solely to raise the heart rate of people who already believe the nonsense the host is talking about (no matter which side of the political spectrum he or she claims to represent).

It’s worth pointing out that this “argument” almost always involves straw men (see the following entry) and very often involves scapegoating as well. The easiest way to deal with an issue is to identify an enemy, distort his real position, and blame everything on him amidst a flurry of name-calling.

### **Straw Man**

One principal weapon of the indignation-mongers just described is the distortion and exaggeration of the views of others. This tactic is widespread in the talk media and in mainstream politics as well. In fact, the latter seem to be taking their cue from the former in recent years. (In the early 1990’s, Newt Gingrich, former Republican Speaker of the U.S. House of Representatives, mailed a pamphlet to fellow Republicans, entitled *Language, a Key Mechanism of Control*. When discussing political opponents and their policies, he said, you should use such terms as “incompetent,” “self-serving,” “traitor,” “anti-family,” “ideological,” and “radical.” When discussing Republicans and their policies you should use such terms as “vision,” “courage,” “lead,” “empower,” “strength,” and “pro-family.”) Some, it seems, don’t trust the American people to make political choices based on straightforward information. And, judging from the number of Americans who make no effort to obtain such information, there may be some basis for such an attitude.

### **Post Hoc**

We usually explain post hoc reasoning in terms of simple-minded examples of cause and effect. But the real bamboozling takes place at more complicated levels. For example, while Jimmy Carter was president, interest rates went through the roof; while George Bush (the first such) was president, the economy went into a recession. Both presidents were blamed for these occurrences, but were the policies of either the cause of these effects? Probably not. At least most people did not stop to ask whether it was anything the president did or refused to do that might have caused them. It is our tendency to seize on easy,

simple answers that helps give this fallacy, and most of the others, such a high profile.

### **Red Herring/Smokescreen**

One might think of this as the “attention span” fallacy, since it seems to work best on listeners and readers who are unable to stay focused on an issue when they are tempted by distractions. These days, when politicians and other public figures dodge hard questions, they are generally allowed to get away with it. How long has it been since you’ve heard a reporter say, “But sir, you didn’t answer the question!” Probably even longer than it’s been since you heard a politician give a direct answer to a hard question. We’ve all heard it said that the media and the people they interview are interdependent—that is, they each depend on the other and have fundamentally the same interests (at the highest government and corporate levels), and that accounts for the easy treatment officials often get from interviewers. But we think it’s also true that reporters themselves are prone to fall for the fallacy in question here. They are too likely to move on to the next question on their list when the public would be better served by a pointed follow-up question on an issue that has just been ducked. We think this is a serious failure and damaging to the public good.

### **Group Think Fallacy**

This fallacy has undergone a major revival since the terrorist attacks of September 11, 2001. An understandable emotional shock followed those attacks, but even before the shock began to wear off, the motto for the country became “United We Stand.” There’s nothing unreasonable about a united stand, of course, but this motto soon began to stand for an intolerance of any position that ran counter to the official view of the United States government (as voiced by the White House). The prevailing view in many quarters, including many places in the government itself, was that all “good” Americans agreed with this official position. Considerable force was brought to bear in enforcing this group thinking, including describing critics as “giving aid and comfort” and so forth.

Of course, it isn’t just national policy that can cause this phenomenon to occur. At what may be the other end of the spectrum, notice how the referees in a basketball game call way too many fouls on your team and not nearly enough on the other team. Our loyalty to our group can affect our judgments in ways that range from the amusing to the dangerous.

### **Scare Tactics**

Reasoning that uses scare tactics is like rain in Seattle: It happens all the time. The scare tactics fallacy ranks up there with the “argument” from outrage as a staple of talk radio hosts and other demagogues, which means it is easy to find examples. What’s wrong with raising fuel-efficiency standards? Well, how would you like to drive around in an elfmobile?—Because that’s what you’re going to be driving if the car companies are forced to make cars more efficient. What’s wrong with the proposed big tax cut? Nothing—if you’d just as soon eliminate Social Security and Medicare.

The fallacy of scare tactics is an appeal to fear, and fear can often provide a perfectly reasonable motivation: Evidence that some frightening thing will

result from X is certainly a good reason for avoiding X. But mere *mention* of the frightening thing is not, nor is a vivid portrayal or depiction of the ominous event. You don't prove we should overthrow a dictator merely by describing what would happen if he set off a nuclear bomb in New York City—or by showing gruesome photos of what he did to someone else. When the danger depicted is not shown to be relevant, the thinking is fallacious.

The use of scare tactics is not uncommon in advertising, either. But getting consumers to worry about having dandruff or halitosis or odors in their carpets is no argument for purchasing some particular brand of shampoo or mouthwash or carpet cleaner. People are often motivated to buy a house or car because they fear someone else will make an offer ahead of them and they'll lose the opportunity. This is unreasonable when it results in a purchase they would not otherwise have made. We wonder how many people live in houses they decided they liked just because they were afraid they'd lose them if they didn't make their offer *right now*.