Informal Fallacies

Reference: Much of this material is taken from the book *Introduction to Logic* by Irving M. Copi.

A fallacy is a type of argument that seems to be correct, but proves, upon examination, not to be so. Fallacies are very often psychologically persuasive.

Formal fallacies involve some misuse of formal logic, as discussed in Chapter II Section 3 of the text.

A common example of a formal fallacy is to confuse “not all” with “all that are not.” For example consider the two sentences:

All aspirin are not flavored.

Not all aspirin are flavored.

These two sentences have different meanings. The first statement asserts that every aspirin pill sold in the stores is unflavored. The second statement merely asserts that some kinds of aspirin are unflavored, allowing for the possibility that flavored kinds also exist.

Another example of a formal fallacy is mistaking a sentence with its converse. As the Mad Hatter explains to Alice

I eat what I see

is not the same thing as saying

I see what I eat.

(Of course, they are the same with some people.)
An **informal fallacy** is an error in reasoning that we may fall into either through carelessness and inattention to our subject matter or else through being misled by some ambiguity in language used to formulate our argument.

We divide informal fallacies into two major categories: (I) fallacies of relevance and (II) fallacies of ambiguity.

Our list of informal fallacies is not, by any means, complete. We give some of the more common kinds of fallacies which you will see in every day advertisements, arguments, and discussion. As you study the various types of informal fallacies, it is helpful to first read the definition, look at the examples, and then reread the definition.

**Fallacies of Relevance**

Psychological relevance is confused with logical relevance to stimulate our emotions, such as fear, hostility, pity, enthusiasm, or awe.

1. **Appeal to Force.**

*Definition.* This is the fallacy committed when one uses force or the threat of force to gain acceptance to his or her conclusion.

*Examples:*

A lobbyist (such as the NRA or the tobacco industry) uses the lure of votes or potential campaign funds to sway a member of Congress to adopt a certain policy or to vote in a certain way. Such considerations have nothing to do with the merits of legislation the lobbyist is attempting to influence.

Stalin at the Yalta Conference said to Churchill in regard to a suggestion of the Pope: “And how many divisions did you say the Pope had available for combat duty?”
Parents say to their child: “Because I say so!”

A country agrees to terrorist demands to sanction Israel.

2. Abusive.

Definition. Instead of trying to disprove the truth of what is asserted, one attacks the person who made the assertion.

Examples:

“Trickle-down” economics will fail because it was endorsed by Ronald Reagan, who was in the early states of Alzeheimer’s Disease.

We may not like Commies, Nazis, John Birchers, KKK members, Hell’s Angels, wife beaters, followers of bin Laden. This does not mean that all statements made by such people are incorrect. An argument is always removed from the person making the argument. Just because we disapprove of a particular person does not allow us to reject what that person says. The personal character of a person is logically irrelevant to the truth or falsity of what she says or the correctness of her arguments.

Adolf Hitler believed strongly in vegetarianism, anti-smoking, and animal rights. Just because Hitler supported these things does not make them undesirable lifestyle choices.

The following editorial was published in the Chicago Times in November, 1863:

The cheek of every American must tingle with shame, as he reads the silly, flat, dish-watery utterances of the man who has to be pointed out to intelligent foreigners as the President of the United States.
The president was Abraham Lincoln and the speech was the Gettysburg Address. Over the years these “dish-watery utterances” have become thought of as the finest speech ever given in America.

*Exception:* In law, an abusive argument is allowed to impeach a witness.

### 3. Circumstantial.

*Definition.* An attempt to prove an opponent ought to accept an argument because of the special beliefs and circumstances of your opponent.

*Examples:*

- Telling a clergyman that to deny your argument would be contrary to Scriptures.
- Telling a Republican that your position on abortion is the accepted position of the Republican Party.
- Telling a woman that she should support a feminist viewpoint because she is a woman.

The reply of a hunter when accused of barbarism in sacrificing unoffending animals for his own amusement: “Why, then, do you feed on the flesh of harmless cattle?” Here the hunter does not try to prove it is right to sacrifice animals for pleasure, but rather that it cannot be consistently objected to by a carnivore.

*A variation of the circumstantial fallacy:* Objecting that a person is making an argument because of their special circumstances, such as:

- Naturally George Bush would favor lowering capital gains taxes; after all, his family is rich.
- Naturally the professor favors more government support for higher education.
4. Argument from Ignorance.

*Definition.* The assertion that a statement is true because it has not been proven false.

*Examples:*

There must be ghosts because no one has been able to prove there aren’t any.

Scientists affirm the falsehood of ESP on the grounds that the truth of mental telepathy has never been established.

Math Example: A perfect number is a positive integer which exactly equals the sum of its divisors (not including itself). The first three perfect numbers are

\[
\begin{align*}
6 &= 1 + 2 + 3 \\
28 &= 1 + 2 + 4 + 7 + 14 \\
496 &= 248 + 124 + 62 + 31 + 16 + 8 + 4 + 2 + 1
\end{align*}
\]

Notice that all three of these numbers are even. In the past two thousand years mathematicians have searched extensively for just one example of an odd perfect number, to no avail. Still, just because one has never been found does not mean that an odd perfect number does not exist. It may be that we just haven’t searched far enough.

*Exception:* In American law, a person is innocent until proven guilty.

Another special qualification is when the event would produce discoverable evidence. If a serious CIA or FBI investigator fails to uncover evidence that a person is a Terrorist, it seems fair to conclude he isn’t one.
5. Appeal to Pity.

*Definition.* When pity is appealed to for the sake of getting a conclusion accepted.

*Examples:*

- Asking the boss for a raise because your kid needs braces, your wife lost her job, your mother-in-law is moving in.
- A defense attorney pleads with the jury that the defendant is poor, helpless, downtrodden, with an invalid mother to support.
- Absurd example: On trial for killing their parents, the Menendez brothers plead for leniency on the grounds that they are both (recent) orphans.

6. Appeal to the People.

*Definition.* An attempt to win popular assent by arousing the feelings and enthusiasm of the multitudes.

*Examples:*

- Using propaganda, waving the flag, stirring emotions.
- This fallacy is a favorite of the propagandist, the politician, and the advertiser.
- Picture Hitler standing before hundreds of thousands of marching German troops during the Nuremberg Nazi Party Rallies or in Leni Riefenstahl’s propaganda film *Triumph of the Will*.

- A politician who opposes change will caution his listeners against “rushing in” and encourage them to “stay with the wisdom of the existing policies.” A politician who advocates change will be “for progress” and against
“antiquated prejudice.” Appeals such as these are often made instead of the more difficult chore of collecting and presenting evidence to support a particular plan.

Advertisers want popular appeal in their commercials.

Ads always show people using the product as wearing the kind of clothes or living in the kinds of houses that are calculated to arouse the approval and admiration of the viewers.

Picture the Marlboro Man on his white horse, smoking his cigarettes.

The “cool guy” in the bar doesn’t want to admit he owns the tan minivan with the lights left on. He needs to spend 20 grand on a sexy new sports car, shown surrounded by beautiful women.

Buy a Ford because it is “America’s best selling truck.”

Buy a Chevy because it’s “Like a Rock.”

When is the last time you even saw a commercial give arguments why you should buy their product? “Image is everything.”

Appeal to the people is often a best seller, both in politics and in the advertising world. However, to quote Copi,

- “Popular acceptance of a policy does not prove it to be wise.”
- “Widespread use of certain products does not prove them to be satisfactory.”
- “General assent to a claim does not prove it to be true.”

In 1942 the vote in the U.S. Senate which led to the Internment of Japanese Americans passed by a vote of 99 to 1. The lone dissenting vote was from
Senator Robert Taft, a rather courageous act for a conservative from Ohio. The popularity of that vote, which reflected the sentiments of a country united against a common enemy, did not make it right.

7. False Authority.

Definition. The use of the feeling of respect or admiration people have for a popular person to win assent to a conclusion, especially for matters outside the province of their special fields of authority.

Einstein, for example, may be an authority on physics, but not religion.

Michael Jordan is certainly an authority in basketball. He is not a chemist or an engineer, and is not a credible authority when he recommends that you buy a Chevy Blazer or Ray-o-vac batteries.

8. Accident.

Definition. An attempt to discredit a general rule by taking a particular exception to that rule. What is true “in general” might not be universally true without qualification, because circumstances alter cases.

Examples:

Parents: “Why must you always do what your friends do? What if your friends jump off a cliff?”

Refuting a “No eating” sign on a city bus, by asking the bus driver “what if a diabetic was riding the bus and went into insulin shock. Would you allow him to eat a candy bar to save his life?”
Consider the argument

All men are mortal.
Socrates is a man.
Therefore Socrates is mortal.

No problem here. Now consider

Professional basketball players are tall.
Mugsy Bogues played for the NBA.
Therefore Mugsy Bogues is tall.

In the first argument, mortality applies to everyone, without exception. In the second argument, although tallness is generally true of most basketball players, it is obviously not universally true. At 5 feet 3 inches, Mugsy Bogues was among the shortest men ever to play in the NBA.

9. Hasty Generalization.

Definition. The converse of the fallacy of accident, hasty generalization is when you make a conclusion based on atypical cases.

Examples:

Since liquor is abused by alcoholics, it should be prohibited.

Since morphine helps cancer patients, it should be legalized.

Vegetarianism leads to violence, since Adolf Hitler, Heinrich Himmler (the head of the Nazi SS), and Charles Manson were all vegetarians.
10. False Cause.

*Definition.* Mistaking what is not the cause for a certain phenomenon for the real cause. Sometimes this fallacy occurs when one event precedes a second, and is therefore falsely claimed to be the cause of the second event.

*Examples:*

An Aborigine’s claim that beating drums during an eclipse causes the sun to reappear. After all, it works every time!

A magic elixir that cures a cold in two weeks.

The causal connection is perhaps the central problem of the scientific method. One method of determining causality is through statistics, as discussed in Chapter I Section 6 of the book. The medical profession is clearly interested in what drugs and treatments appear effective.

In the 1950’s mammary arterial ligation was considered a method for treating angina pain. Women in several studies reported a decrease in pain after this medical procedure. But was this reaction due to actual pain relief of was it due to the natural positive response of the patients who wanted to believe that their pain was lessened. A comparison on a random sample against a placebo group showed no significant difference in the reported reduction in pain between the two groups.

Today bone marrow treatment for terminal cancer patients is hotly debated as a potential cure. Similarly for herbal treatments and holistic medicine.

11. Begging the Question.

*Definition.* When you assume as a premise for your argument the very conclusion you want to prove.
Examples:

You cannot prove that the Bible is the true word of God by quoting from the book of John 17:17: “Thy word is truth.”

“To allow every man unbounded freedom of speech must be advantageous to the state; for it is highly conducive to the interests of the community that each individual should enjoy liberty of expressing his sentiments.”

Shakespeare is a greater writer than Tom Clancy, because people with good taste in literature prefer to read Shakespeare. And how do we tell people with good taste in literature? Answer: They prefer Shakespeare over Clancy.

Begging the question is not logically irrelevant. A proof in which you assume the conclusion as one of your hypotheses is clearly a valid proof. It’s just that no argument is really needed.

12. Complex Question.

The question “Have you stopped beating your wife?” presumes a definite answer to a prior, unasked question.

More Examples.

Teacher: Are you going to pass Math 101 this time?

Lawyer: Where did you hide the murder weapon?

Politician: How long are we going to tolerate foreign interference in our national events?

Telemarketer: Can you just verify your name and phone number in order to enroll in our video club?
Mother: Do you want to be a good girl and go to bed?

The desire by recent presidents to have a line item veto, so they can veto just those statements in a bill passed by Congress that they dislike, is their attempt to eliminate the occurrence of complex question in legislation.

13. Irrelevant Conclusion.

Definition. When an argument purporting to establish a particular conclusion is directed to prove a different conclusion.

Classic Example. The prosecutor in a criminal case proves the horrible-ness of the crime and then infers the guilt of the defendant. Just because a crime was gruesome and brutal does not mean the person accused of the crime actually committed it.