6. Informal Fallacies

CONTENTS

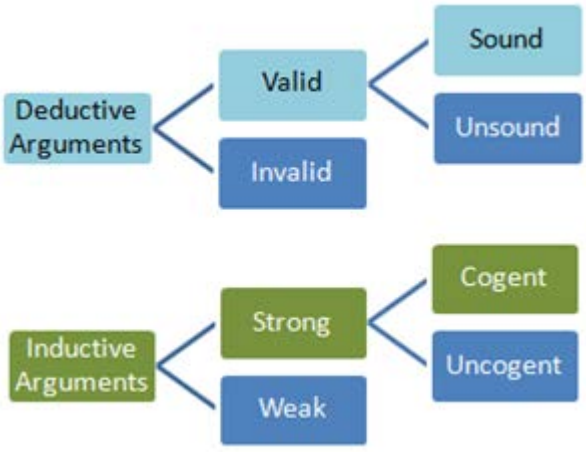
Focus

With diligent study of this guide, you will learn...	
Ideas	informal fallacies, Faulty Analogy, False Cause: *Post Hoc Ergo Propter Hoc,* Slippery Slope, Straw Man, Hasty Conclusion, False Dilemma-Either/Or, Begging the Question; Fallacies that mislead: Red Herring, *Ad Hominem,* Two Wrongs Make a Right, *Ad Populum,* Appeal to Tradition, Appeal to Pity, Equivocation
Skills	recognizing common reasoning errors, handling common informal fallacies effectively

6.1 Fallacies Generally

Key Ideas/Terms	Definition
fallacy	A defect in an argument due to either: ▪ reasoning error (*non sequitur*—it does not follow) ▪ illusion that makes a bad argument appear good
formal fallacy	An argument defect caused by an error in the form or structure of the argument. This kind of fallacy only afflicts deductive arguments. For example, see 4.3.1 Affirming the Consequent and 4.3.2 Denying the Antecedent.
informal fallacy	An argument defect that can be detected only by examining the argument's content and language.

A valid deductive argument (no formal reasoning error), is rendered ***unsound*** if it exhibits an informal fallacy in the premises. Similarly, an inductive argument that passes the strength test is ***uncogent*** if it's infested by an informal fallacy.



6.2 Informal Defects in Arguments

Consider the following argument:

> A *World of Warcraft* game player is a person.
> Therefore, a bad *World of Warcraft* game player is a bad person.

To identify the error in this argument requires knowing (or being able to compute), that the meaning of the English word *bad* depends on what the word modifies. Small children and automated language processors can be easily confused by a bad argument like the one above. But you can quickly discern that being a *bad* game player (reality assumptions), is not the same as being a *bad* person (value assumptions).

Aristotle identified thirteen informal fallacies that commonly arise, but philosophers and logicians have uncovered many more since. There are many ways to classify the numerous informal fallacies that have been identified. Here, we will simply divide them into two groups:

Fallacies of Faulty Support	Fallacies of Distraction
▶ Premises that are inadequate for conclusions • Faulty Analogy • False Cause (*Post Hoc Ergo Propter Hoc)* • Slippery Slope • Straw Man • Hasty Generalization • False Dilemma (False Dichotomy) • Begging the Question	▶ Premises that mislead or confuse • Red Herring • Against the Person (*Ad Hominem*) • Two Wrongs Make a Right • Against the People (*Ad Populum*) • Appeal to Unqualified Authority • Appeal to Pity • Equivocation

6.3 Fallacies of Faulty Support

In general, the fallacies in this group are argument defects related to inadequate reasoning. Although these kinds of fallacies often sound convincing and even logical, close inspection reveals that they all fail to support a probably true conclusion.

6.3.1 Faulty Analogy

The basic structure of an argument from analogy is:

> **A** has attributes (properties) a, b, c, and x.
> **B** has attributes a, b, c.
> Therefore, **B** probably has attribute x also.

A ***faulty or weak analogy*** occurs when the conclusion of an argument depends on an analogy (or similarity) that is not strong enough to support the conclusion. If there are significant differences between the analogues, it is a faulty analogy. For example, consider this analogy between a water pipe and an electrical wire:

> water : pipe :: electricity : electrical wire

Note that this analogy can be true or false, depending on the property being compared:

Property	water : pipe	electricity : electrical wire
Diameter of conduit	The greater the diameter, the greater the flow (volume). TRUE	The greater the diameter of the wire, the greater the flow (amps). TRUE
Orientation of conduit	Flow downhill through a sloping pipe produces greater pressure at the bottom than at top. TRUE	Flow downhill through a sloping wire produces greater pressure (volts) at the bottom than at top. FALSE

Faulty analogies are frequently used when social issues are discussed and often involve a limited understanding of significant changes that make the world of the 21st century different from the world of previous generations. A common problem with people who offer advice is their assumption that what worked for them will work for you.

In general, check for significant differences between compared items in any analogical argument. Be wary of trying to compare apples to oranges!

6.3.2 False Cause (*Post Hoc*)

The ***false cause*** fallacy is sometimes referred to by its Latin designation: ***Post Hoc Ergo Propter Hoc*** ("After this, therefore because of this.") This fallacy assumes that if an event comes after another, it must have been caused by the previous event. It is a confusion of correlation with causation. This fallacy depends on some imagined causal connection for which there is no evidence. Here is an example:

> The quality of education in our colleges has been declining for years. Clearly, college faculty just aren't working hard enough these days.
>
> I failed the quiz because I walked under a ladder on the way to class.

Note that the false cause fallacy is at the heart of ***superstitious thinking***. For example:

> I failed the quiz because I walked under a ladder on the way to class.

One variation on this fallacy is the ***gambler's fallacy***. For example:

> A fair coin was flipped seven times in a row, and each time it came up tails. Therefore, it is almost certain that it will come up heads on the next flip.

Yet another variant of this fallacy is the ***blame game*** that attempts to shift responsibility for an unfortunate event. For example:

> The reason the Panthers lost was simply because we weren't playing at home.

Also note that children often resort to ***magical thinking*** to explain why they are not responsible for some of their actions. For example:

> I can't find my new shoes because the Cookie Monster came in the middle of the night and ate them.

6.3.3 The Slippery Slope

This informal fallacy that occurs when the conclusion of an argument rests on an alleged chain reaction, but there is no sufficient reason to think that the chain reaction will actually take place. This is another variety of the ***false cause*** fallacy that looks to the future and makes a prediction based on mere speculation. This is thinking of some kind of ***domino effect*** where most of the dominos haven't materialized yet. For example:

> Professor Nobody has asked the Philosophy Department to purchase a fancy coffeemaker for her office. But we shouldn't approve that because the next thing you know, she'll want a toaster oven, and then a refrigerator, and then a dishwasher, and before you know it, a complete set of dinnerware for her office parties with students. All this would completely exhaust our department's budget.

Note that all predictions (expectations of future events), are always speculative in nature.

6.3.4 The Straw Man

This fallacy occurs when the arguer misinterprets or misrepresents an opponent's position for the purpose of more easily attacking it. First, the bad arguer sets up a "straw man" argument that misinterprets the original argument. Next, the phony (often overly simplified) argument is demolished. Then, the arguer proceeds to conclude that the original argument has been demolished. The opponent's argument is distorted or exaggerated to some extreme case, and then easily attacked.

For example, a debater might claim that:

> AK47s should be outlawed for possession by private citizens. No citizen needs that level of fire power for sport or self-defense.

A reasonable response would be to discuss the question of whether or not AK47s have a legitimate use by civilians. But a bad arguer might be drawn into setting up a *straw man* by misrepresenting the discussion as an argument about *any* firearms:

> As you can see, my opponent is against the use of firearms for self-protection. So, she would allow criminals to possess firearms, but deny them to law-abiding citizens. Yikes!

To counter a straw man argument, first identify the distortion of the original argument, and then ask the bad arguer to respond to the real issue or argument that was first presented.

6.3.5 Hasty Generalization

This fallacy involves a general conclusion that is drawn from atypical specific cases or from limited evidence. The bad arguer is generalizing with little information to support the inductive inference. This fallacy is exposed when there is a reasonable likelihood that a sample is not representative of a group. The sample might be too small and/or not randomly selected. For example:

> I've met three Latvians during my life, and they were all unsavory characters with bad table manners. I tell ya, those Latvians are a bunch of low-lifes.

In this example, the bad arguer is, as we say, 'jumping to a conclusion." Rushing to judgment is a pernicious defect in inductive reasoning. One especially troubling version of this fallacy is the ***self-fulfilling prophecy***—an unproven expectation that is acted upon as if it were an established fact. For example:

I'm really bad at math because I had trouble in my last algebra class.

Then, to make this a self-fulfilling prophecy, this hapless arguer will act as if this conclusion is a fact and maybe stop doing math homework or attending class regularly. We can see the self-fulfilling prophecy played out on a social level by distinct ethnic and political groups. On a personal level, this kind of fallacy leads us to put limitations on ourselves and distorts our perceptions of our real abilities.

6.3.6 The False Dilemma (False Dichotomy)

This informal fallacy is committed when a bad arguer presents two non-jointly exhaustive alternatives as if they were jointly exhaustive and then eliminates one, leaving the other as the conclusion. This distortion in reasoning presents only two extreme alternatives; there are no possibilities in between. This fallacy creeps out of the logic woodwork as a simplistic characterization of a problem or solution. For example:

Either the wonders of nature came about by chance or they are the product of intelligent design. They could not have come about by chance. Therefore, they are the product of intelligent design.

The argument above fails to note that the theory of natural selection can also explain the emergence of the complex wonders of nature. It is important to note that we can be inclined to accept this error in reasoning because of a preference or desire for simple, clear-cut solutions—much easier than using slow-mode thinking to sort out complex problems. It is also noteworthy that ordinary language often inclines us to view the world in binary terms like these polarities:

- beautiful v ugly
- strong v weak
- extroverted v introverted
- rich v poor
- brave v cowardly
- happy v sad

6.3.7 Begging the Question

This common fallacy occurs when a bad arguer creates the illusion that inadequate premises provide adequate support for the conclusion-by leaving out a key premise, by restating the conclusion as a premise, or by reasoning in a circle. The bad arguer assumes what needs to be proven and places the burden of proof on the interlocutor.

An argument "begs the question" if the conclusion is smuggled in among the premises—thereby asserting as a premise the very thing the argument seeks to prove. For example:

Murder is morally wrong. So, it follows that abortion is morally wrong.

Circular reasoning is a version of this fallacy:

Anyone who preaches revolution has a vision for the future for the simple reason that if a person has no vision of the future, she could not possibly preach revolution.

Note that arguments that beg the question are usually valid since any argument that includes the conclusion as one of the premises is a valid argument. For example:

Lake Oswego is in Latvia or Lake Oswego is in Latvia. Therefore, Lake Oswego is in Latvia.

Although this argument is valid, it is clearly unsound because it presumes the truth of the premise. Begging the question is sometimes referred to as the *fallacy of presumption*.

Sharpen Your Critical Thinking

- Find examples of one or more examples of fallacies of faulty support in online posts, tabloid articles, or political speeches.
- Identify examples of one or more examples of fallacies of faulty support in your research for the issue discussed in your ICT Letter.
- Document your examples by recording the sources (URL, author and publication names, dates, etc.)

6.4 Fallacies of Distraction

6.4.1 Red Herring

A fallacy that occurs when the arguer diverts the attention of the reader or listener by addressing extraneous issues and finishes by presuming that some conclusion has been established. This fallacy gets its name from an old hunting practice of dragging a herring (a pungent smoked fish), down a trail to distract hunting dogs following the scent of their quarry.

This fallacy leads the listener away from the reasons that support the issue under consideration. For example, if someone can distract you and put you on the defensive about a different issue, then they have succeeded to throw you off the course of the original issue or argument. You will frequently encounter this fallacy in press conferences and political speeches and interviews. For example, consider this exchange between a reporter and a politian:

> **Reporter**: Mr. Secretary, why won't the President admit that he wrote those notes with his signature on them?
>
> **Politian**: Why are you reporters always attacking our President and defending his low-life opponents?

Here's another example:

> Environmentalists are always complaining about the dangers of nuclear power. Unfortunately, electricity is dangerous regardless of its source. Every year, hundreds of people are electrocuted by accident. Now, most of those accidents are caused by carelessness, and people could avoid them if they just used better critical thinking.

We typically employ this fallacy to move dialogue away from an issue that is uncomfortable or simply to deflect a difficult question to attention on another question (yes, but what about...?) Sometimes we refer to this fallacy as ***missing the point*** or ignorance of the question at hand. To counter the *red herring* ploy, remind the bad arguer of the original issue/question and ask them to respond to that. You could also offer to discuss their question or issue after you have had a response to yours.

6.4.2 Against the Person (*Ad Hominem*)

This fallacy always involves two arguers. One puts forward an argument (explicitly or implicitly), and the other directs attention not to the first person's argument, but to the first person himself or herself. This fallacy comes in two basic and unpleasant flavors: ***ad hominem abusive*** and **ad hominem**

circumstantial. In its abusive form, this all-too-common defect in reasoning attempts to discredit an opinion by discrediting the person who holds it. An example of the abusive flavor is:

> Charles Darwin was a rabid atheist.
> Therefore, his godless theory should be ignored.

In the example above, the bad arguer doesn't engage Darwin's argument for the theory of natural selection, but instead attacks Darwin's character (with the implication that being an atheist is evidence of a character flaw. Also note the use of "rabid" and "godless" as *slanters*—words that convey negative connotations.

Instead of attacking a person's character directly, the *ad hominem circumstantial* fallacy attempts to discredit an opponent's argument by referring to certain circumstances that involve or affect the opponent. For example:

> The Dalai Lama argues that China should leave Tibet and the world should insist on the end of their occupation. But the Dalai Lama just wants the Chinese to leave so he can return as the powerful new leader of Tibet. So, of course he argues for the departure of the Chinese—he's got everything to gain!

Of course, depending on the issue, the character, personality, or behavior of a person might be relevant. If it is relevant, it can be used as evidence. But be clear: it is the strength of an argument—not the character of the person who proposes it—that matters.

6.4.3 Two Wrongs Make a Right (*Tu quoque*)

A variety of the *ad hominem* fallacy occurs when an arguer attempts to shift the burden of responsibility or guilt onto a second arguer for the purpose of discrediting his or her argument. It's often flagged by "you too" (*tu quoque*) challenges like: "Yes, but what about you and your...?" or "Yes, but what about (group) and their...?" This fallacy is often used to excuse bad behavior on the grounds of other bad behavior. So, it is also a bit like the *red herring* distraction. For example:

> Why blame me for going out with someone else when you're so grumpy all the time?
>
> Of course I cheated on the test. Everyone else was cheating too.
>
> Look who's talking about energy conservation! Didn't you used to drive an F350 truck all over town?

Clearly, making excuses for our own wrongful actions by pointing out the failings of others does not justify them. To confront this fallacy, simply acknowledge the equally bad or worse behavior and remind the bad arguer that it does not justify his or her own behavior. It's simple: two wrongs don't make something okay; they just indicate the reality of common human failings.

6.4.4 Appeal to the People (*Ad Populum*)

This informal fallacy occurs when an arguer plays on certain psychological needs for the purpose of getting the reader or listener to accept a conclusion. For example:

> Join the millions of satisfied and successful people who drive Ford trucks, and find out how much fun you've been missing.

> Thousands of people come to my rallies all the time. And you know why? Because they have a good time. Don't miss out any longer. Come and join our parties and you see what you've been missing.

Bandwagon is a variety of the appeal-to-the-people fallacy that occurs when the arguer plays on the reader's or listener's need to feel part of a group. ***Appeal to vanity*** is another variety of this fallacy that occurs when an arguer plays on the vanity of the reader or listener. Similarly, an ***appeal to snobbery*** occurs when the arguer plays on the reader's or listener's need to feel superior. In all these silly variations, this fallacy preys on our needs to feel like we belong, are attractive in some respect, or are somehow better than others.

6.4.5 Appeal to Unqualified Authority

An informal fallacy that occurs when an arguer cites the testimony of an unqualified authority in support of a conclusion. We can always ask what lies behind an authority's pronouncements—why does the authority say what it says? If the authority is reliable, then there must be good reasons for what it says. Some sources are cited as authorities when they are not. Service or product endorsements by celebrities and politicians are common in our commercialized world. For example:

> Jay-Z is a world-famous American rapper, songwriter, producer, and entrepreneur. He has frequently endorsed Zoloft for treating persistent depression. So, if you suffer from clinical depression, Zoloft should be your drug of choice.
>
> David Duke, former Grand Wizard of the Ku Klux Klan, has said that "Jews are not good Americans. They have no understanding of what America is." Because Duke is a Grand Wizard, we should accept that the Jews in this country are un-American.

One variation of this fallacy is the ***appeal to tradition*** which occurs when we are asked to accept a belief or action simply because it conforms with traditional ideas or practices. For example:

> For most of human history, marriage has always been between a man and a woman. Therefore, any committed relationship of love should always be between a man and woman.
>
> All the women in our family have always be stay-at-home moms. So you will be too.

6.4.6 Appeal to Pity

An informal fallacy that occurs when an arguer attempts to evoke pity from a reader or listener for the purpose of getting him or her to accept a conclusion. Related to ***appeal to force*** , this fallacy attempts to divert an argument by merely evoking compassion or aversion (threat of force), as support for the conclusion. For example:

> You really should date me because it you don't, I'll be miserable and depressed and really bummed.
>
> I know you've started your vegan diet. But your mother slaved all day in roasting this turkey, and you should make an exception to avoid hurt feelings.

Note that this fallacy hinges on the assumption that no other reason is necessary to support the conclusion. Pity (or fear) is the only reason given and the only one necessary—a sufficient condition for the truth of the conclusion. For example:

> Your Honor, I admit that I declared 17 children as dependents on my tax returns...instead of only two. But if you lock me up for tax evasion, my reputation will be ruined, I'll lose my job. My poor wife won't be able to get the surgery she needs for walking. My innocent children will go hungry and maybe end up in a street gang or homeless camp. Surely, you can't find me guilty.

In the previous example, it is obvious that the taxpayer's pathetic circumstances do not support the conclusion that he is not guilty. Of course, appeals to our compassion are often relevant in an argument that offers other reasons that directly support the conclusion. Certainly, feelings of compassion should inform and shape our reasoning, but they cannot compose the only "reason" for reaching a reasonable conclusion.

6.4.7 Equivocation

This pernicious fallacy involves using a word (explicitly or implicitly), in more than one meaning in the same argument. In this fallacy, the same word is given two different jobs to do—two different possible interpretations. For example:

> Marriage is a great institution, but I'm not ready for an institution.
>
> Nothing is better than eternal happiness. But a ham sandwich is better than nothing. Therefore, a ham sandwich is better than eternal happiness.
>
> Change is inevitable—except from vending machines.
>
> Some triangles are obtuse. Whatever is obtuse is ignorant. So, it figures that some triangles are ignorant.

Sometimes there is ambiguity about a word with meaning only relative to a context. Words like small, good, bad, light, heavy, hard, soft, difficult, easy, tall, short, etc have meaning only relative to a context. For example:

> A mouse is an animal. Therefore, a large mouse is a large animal.

What's the difference between a guy wearing a tuxedo and riding a unicycle, and a guy wearing a Banana Republic hoodie and riding a bicycle?

It's a question of attire.

6.5 Assessing My Critical Thinking

Exercise 6	
If a friend or fellow student is not available to help you with this exercise, simply imagine someone asking you to explain these ideas and answer these questions. ▶ If you are confident in the clarity, accuracy, and completeness of your explanations, continue forward on the path. Otherwise, go back and study the areas where you have stumbled, and then return to this exercise.	▪ **What is a fallacy?** ▪ **What is a *formal* fallacy?** ▪ **What is an *informal* fallacy?** ▪ **Name several common informal fallacies.** ▪ **What is a good strategy to confront the Straw Man fallacy?** ▪ **What are some informal fallacies you have used / continue to use?** ▪ **What are some informal fallacies you encounter in your family, workplace, political environment?**

Quiet Reflection 6	
Self-reflection requires mental focus and personal honesty. At steps 2 and 3 especially, silence is very important. You must be able to hear your inner voice. Find a place that is quiet and comfortable. Turn off your phone and eliminate other distractions if possible.	
1. Observe/Study	▪ Find examples of one or more *fallacies of faulty support* in your research for the issue discussed in your ICT Letter. ▪ Find examples of one or more examples of *fallacies of distraction* in your research for the issue discussed in your ICT Letter.
2. Judge/Evaluate	▪ Evaluate these fallacies and identify their types by name.
3. Act/Decide	▪ Cite or construct one or more responses to the fallacies you have uncovered. ▪ Include your rebuttals of these fallacies in your notes for your ICT Letter. ▪ Continue to reflect on how your commitment to always seek the truth affects your family, neighborhood, community, and the whole planet.

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