

EE439: Seminar in Monetary Economics

Logical Fallacies

Source: An Encyclopedia of Errors of Reasoning

**Making logical conclusions from your
research**

Beware of Logical Fallacies

- The ability to identify logical fallacies in the arguments of others, and to avoid them in one's own arguments, is both valuable and increasingly rare.
- Fallacious reasoning keeps us from knowing the truth, and the inability to think critically makes us vulnerable to manipulation by those skilled in the art of rhetoric.

Components of Arguments:

premises, inferences, and conclusions

- Arguments containing bad inferences, where the premises don't give adequate support for the conclusion drawn, can certainly be called fallacious.
- What is less clear is whether arguments containing false premises but which are otherwise (inferences and conclusions are fine) should be called fallacious.

Taxonomy of Fallacies: Common fallacies

(a) Ambiguity

Arguments that manipulate language in misleading ways (straw man argument).

(b) Wrong presumption

(c) Irrelevance

Straw Man Arguments: Fallacy of ambiguity

- A straw man argument is one that misrepresents a position in order to make it appear weaker than it actually is, refutes this (straw man) misrepresentation of the position, and then concludes that the real position has been refuted.
- This, of course, is a fallacy, because the position that has been claimed to be refuted is different to that which has actually been refuted; the real target of the argument is untouched by it.

The Gambler's Fallacy

- The gambler's fallacy is the fallacy of assuming that short-term deviations from probability will be corrected in the short-term.
- Faced with a series of events that are statistically unlikely, say, a series of 9 coin tosses that have landed heads-up, it is very tempting to expect the next coin toss to land tails-up.
- The past series of results, though, has no effect on the probability of the various possible outcomes of the next coin toss.
- **“All banks are too big to fail, (premise)**
- **Bank B is a big bank in Thailand (inference)**
- **Conclusion: It is safe to deposit our money in bank B, because the government won't let them fail”**

B. Fallacies of Presumption

- Fallacies of presumption are not errors of reasoning in the sense of logical errors, but are nevertheless commonly classed as fallacies.
- Fallacies of presumption begin with a **false** (or at least unwarranted) assumption, and so fail to establish their conclusion.

Unwarranted assumptions

- Fallacies of presumption involve [false dilemmas](#), [complex questions](#), or [circularity](#) all commit fallacies of presumption:
- **false dilemmas** assume that there are no other options to consider;
- **complex questions** assume that a state of affairs holds when it may not;
- **circular arguments** assume precisely the thing that they seek to prove.
- In each case, the assumption is problematic, and prevents the argument from establishing its conclusion.

Complex questions: fallacies of presumption

- The complex question fallacy is committed when a question is asked (a) that rests on a questionable assumption, and (b) to which all answers appear to endorse that assumption.
- "Have you stopped cheating in the exam?"
- This is a complex question because it presupposes that you used to cheat the exam, a presupposition that either answer to the question appears to endorse.
- "Are you going to admit that you're wrong?"
- Answering yes to this question is an admission of guilt. Answering no to the question implies that the accused accepts that he is in the wrong, but will not admit it. No room is left to protest one's innocence. This is therefore a complex question, and a subtle [false dilemma](#).

Circular Reasoning/ Begging the Question

- An argument is circular if its conclusion is among its premises, if it assumes (either explicitly or not) what it is trying to prove.
- Such arguments are said to beg the question.
- A circular argument fails as a proof because it will only be judged to be sound by those who already accept its conclusion.

Begging the Question / Circular Reasoning

- Anyone who rejects the argument's conclusion should also reject at least one of its premises (the one that is the same as its conclusion), and so should reject the argument as a whole.
- Anyone who accepts all of the argument's premises already accepts the argument's conclusion, so can't be said to have been persuaded by the argument. In neither case, then, will the argument be successful.

Begging the question

Assuming what it is trying to prove

- Typical examples of circular arguments include rights-claims: e.g.,
- “Thammasat has freedom in every square inch, I have a right to wear what I want, therefore you shouldn’t try to tell me how to dress properly”;
- “Women have a right to choose whether to have an abortion or not, therefore abortion should be allowed”;
- “The unborn has a right to life, therefore abortion is immoral”.
- Having a right to X is the same as other people having an obligation to allow you to have X, so each of these arguments begs the question, assuming exactly what it is trying to prove.

C. Fallacies of Relevance

- Fallacies of relevance are attempts to prove a conclusion by offering considerations that simply don't bear on its truth.
- In order to prove that a conclusion is true, one must offer evidence that supports it (inferences).
- Arguments that commit fallacies of relevance don't offer evidence to support its argument
- The ***considerations that they offer in support of their conclusion are irrelevant*** to determining whether that their conclusion is true.
- The considerations offered are usually **psychologically powerful**, however, even if they don't have any evidential value.

Fallacies of Relevance

- (A) Personal attacks (arguments ad hominem) attempt to discredit a point of view by discrediting the person that holds it.
- The character of the person that holds a view, though, ***entails nothing about the truth of that view.***
- Such arguments therefore commit a fallacy of relevance. (Mr. Square faced and PM with rose apple nosed)

Fallacies of Relevance

- (B) Appeals to consequences attempt to persuade someone to accept a position based either on the good consequences of their accepting it or on the bad consequences of their not accepting it.
- There is no guarantee, though, that the position that has the best consequences is true.
- Again, then, such arguments commit a fallacy of relevance.

Appeal to Consequences

- An appeal to consequences is an attempt to motivate belief with an appeal either to the good consequences of believing or the bad consequences of disbelieving.
- Such arguments are clearly fallacious.
- There is no guarantee, or even likelihood, that the world is the way that it is best for us for it to be.
- Belief that the world is the way that it is best for us for it to be, absent other evidence, is therefore just as likely to be false as true.

Appeal to Consequences

- An appeal to consequences seeks to persuade by getting the listener to consider either the attractiveness of a belief, or the unattractiveness of the alternatives.
- We should form beliefs, however, not on the basis of what we would like to be true, but on the basis of what the evidence supports.

Appeal to bad/good Consequences

- Without the intervention, the baht/usd would have been strengthened to 30 baht, weakening the economic growth in 2007.
- “Early to bed, and early rise make you healthy, wealthy, and wise”

Irrelevant Appeals

- For example, an appeal to authority seeks to persuade by citing what someone else, a perceived authority, thinks on the subject, as if that resolves the question.
- The degree of support that such an appeal lends to a claim varies depending on the particular authority in question, the relevance of their expertise to the claim, and other factors, but in all cases is limited.

Irrelevant Appeals

- An appeal to pity, which can be very effective, persuades using emotion--specifically, sympathy--rather than reason.
- “As the poor suffer miserably from inflation, the government should set price ceilings for essential consumer goods”

Appeal to pity

- An appeal to pity attempts to persuade using emotion--specifically, sympathy--rather than evidence.
- Playing on the pity that someone feels for an individual or group can certainly affect what that person thinks about the group; this is a highly effective, and so quite common, fallacy.

Appeal to Pity

- This type of argument is fallacious because our emotional responses are not always a good guide to truth; emotions can cloud, rather than clarify, issues.
- We should base our beliefs upon reason, rather than on emotion, if we want our beliefs to be true.
- ***Thailand's economic development is a disaster as the rich get richer and the poor become poorer.***
- ***When tuition fee is raised, it should be applied for new students only, otherwise parents of currently enrolled students would be adversely affected.***

Irrelevant appeal: Appeal to Authority (experts)

- An appeal to authority is an argument from the fact that a person judged to be an ***authority affirms a proposition to the claim that the proposition is true.***
- Appeals to authority are always deductively fallacious; even a legitimate authority speaking on his area of expertise may affirm a falsehood, so no testimony of any authority is guaranteed to be true.
- *“According to Minister of labor, Thailand unemployment rate dropped to 1.4 %, its lowest level in 2007”.*
- *“Kor-Mor-chor installed-government had succeed in enhancing the growth of the Thai economy after the coup in 2006.”*

Appeal to Authority

- However, the informal fallacy occurs only when the authority cited either (a) is not an authority, or (b) is not an authority on the subject on which he is being cited.
- If someone either isn't an authority at all, or isn't an authority on the subject about which they're speaking, then that undermines the value of their testimony.

Appeal to Force

- An appeal to force is an attempt to persuade using threats. Its Latin name, “argumentum ad baculum”, literally means “argument with a cudgel”.
- Disbelief, such arguments go, will be met with sanctions, perhaps physical abuse; therefore, you’d better believe.
- Appeals to force are thus a particularly cynical type of [appeal to consequences](#), where the unpleasant consequences of disbelief are deliberately inflicted by the arguer.

Weak Analogy

- Arguments by analogy rest on a comparison. Their logical structure is this:
- (1) A and B are similar.
(2) A has a certain characteristic.
Therefore:
(3) B must have that characteristic too.
- Thailand needs to have 300 modern tanks like Switzerland.

Weak Analogy: fallacy of relevance

- “Israel is successful in diverting water from its river for its agriculture”.
- “Thailand should build a tunnel to get water from Mekong river for the Northeastern region”.
- An argument by analogy is only ***as strong as the comparison*** on which it rests.
- The weak analogy fallacy (or “false analogy”, or “questionable analogy”) is committed when the comparison is not strong enough.

Red Herring

- The red herring is as much a debate tactic as it is a logical fallacy.
- It is a fallacy of distraction, and is committed when a listener attempts to divert an arguer from his argument by introducing another topic.
- This can be one of the most frustrating, and effective, fallacies to observe.
- The fallacy gets its name from fox hunting, specifically from the practice of using smoked herrings, which are red, to distract hounds from the scent of their quarry.
- Just as a hound may be prevented from catching a fox by distracting it with a red herring, so an arguer may be prevented from proving his point by distracting him with a tangential issue.

Red Herring: A diversion

- Many of the fallacies of relevance can take red herring form.
- An appeal to pity, for example, can be used to distract from the issue at hand:
- “You may think that he cheated on the test, but look at the poor student! How would he feel if you made him get an F?”

Naturalistic fallacy

- The naturalistic fallacy moves from descriptions of ***how things are*** to statements of ***how things ought to be***
- Income inequality leads to poor growth
- Thailand has great income inequality
- ***We can improve income distribution by imposing inheritance tax”***

Moralistic Fallacy

- The moralistic fallacy is the opposite of the [naturalistic fallacy](#)
- It **assumes that the world is as it should be**. This, sadly, is a fallacy; sometimes things aren't as they ought to be.

The Moralistic Fallacy

- Have you ever crossed a one-way street without looking in both directions? If you have, reasoning that people shouldn't be driving the wrong way up a one way street so there's no risk of being run over from that direction, then you've committed the moralistic fallacy.
- Sometimes things aren't as they ought to be. Sometimes people drive in directions that they shouldn't.
- The rules of the road don't necessarily describe actual driving practices.

Bandwagon Fallacy

- The bandwagon fallacy is committed by arguments that appeal to the growing popularity of an idea as a reason for accepting it as true.
- They take the mere fact that an idea suddenly attracting adherents as a reason for us to join in with the trend and become adherents of the idea ourselves.
- This is a fallacy because there are many other features of ideas than truth that can lead to a rapid increase in popularity.
- ***Peer pressure, tangible benefits, or even mass stupidity could lead to a false idea being adopted by lots of people.***
- ***A rise in the popularity of an idea, then, is no guarantee of its truth.***

Bandwagon Fallacy

- The bandwagon fallacy is closely related to the [appeal to popularity](#); the difference between the two is that the bandwagon fallacy places an emphasis on current fads and trends, on the growing support for an idea, whereas the appeal to popularity does not.
- ***“We need to apply sufficiency economy philosophy to every segment of our society”***
- ***“A currency board must be adopted after the currency crisis”***
- ***“Inflation target is a must after floating the currency”***

Post Hoc Ergo Propter Hoc

- The Latin phrase “post hoc ergo propter hoc” means, literally, “**after this therefore because of this.**”
- The post hoc fallacy is committed when it is assumed that because one thing occurred after another, it must have occurred as a result of it.
- Mere temporal succession, however, does not entail causal succession.
- Just because one thing follows another does not mean that it was caused by it.

Post Hoc, Ergo Propter Hoc
After this, therefore because of this

- This argument commits the post hoc fallacy because it infers a ***causal connection*** based solely on temporal order.
- Superstitions often arise from people committing the *post hoc fallacy*.

Post Hoc, Ergo Propter Hoc

- Consider, for example, a student who adopts a pre-exam ritual because one time he did something before an exam he got an A grade.
- The reasoning here is presumably that on the first occasion the activity preceded the success, so the activity must have contributed to the success, so repeating the activity is likely to lead to a recurrence of the success.
- *Change your name and your life would strike a fortune.*

Cum Hoc, Ergo Propter Hoc

- The cum hoc fallacy is committed when it is assumed that because two things **occur together**, they must be causally related. This, however, does not follow;
- **Correlation is possible without causation.**
- If the graph shows the rising value of the baht and export growth, one should not jump into the conclusion that baht appreciation lead to strong export growth.
- *i-pod popularity and the increasing crime rate in the US. (Urban Research Institute)*
- *Suicidal and unemployment rates*

Argument from Ignorance

- Arguments from ignorance infer that a proposition is true from **the fact that it is not known to be false.**
- Not all arguments of this form are fallacious; if it is known that if the proposition were not true then it would have been disproved, then a valid argument from ignorance may be constructed. In other cases, though, arguments from ignorance are fallacious.
- ***If the Finance Minister knew about baht speculation, he would be frightened and would maintain the capital controls.***
- ***“If you don’t believe, never show your contempt”***

Hasty Generalization

- A hasty generalization draws a general rule from a single, perhaps atypical, case.
- (1) BE students in my class are very polite.
- (2) All BE students have good manner.
- This argument takes an individual case and draws a general rule from it, assuming that all BE students are like my 459 students.
- The conclusion that it reaches hasn't been demonstrated, because it may well be that the neighbor is not a typical red-shirted guy, and that the conclusion drawn is false.

Sweeping Generalization

- A sweeping generalization applies a general statement too broadly.
- If one takes a general rule, and applies it to a case to which, due to the specific features of the case, the rule does not apply, then one commits the sweeping generalization fallacy.
- This fallacy is the reverse of a [hasty generalization](#), which infers a general rule from a specific case.
- (1) All developed countries have good education system.
(2) Thai government should provide free education to all.
- No matter what you think of the general principle that a country need good education, Thailand can improve education by other means; the general principle doesn't apply.

Slippery Slope

- Slippery slope arguments falsely assume that one thing must lead to another.
- They begin by suggesting that if we do one thing then that will lead to another, and before we know it we'll be doing something that we don't want to do.
- They conclude that we therefore shouldn't do the first thing.
- The problem with these arguments is that it is possible to do the first thing that they mention without going on to do the other things; restraint is possible.
- ***If you start smoking when you are young, you would end up becoming a drug addict.***

Tu Quoque: Two Wrongs Don't Make a Right

- Chula's English language program has increased the tuition fee by 15% this year.
- Other school charge more than the BE program, therefore our increased tuition are justified.”
- This commits the tu quoque fallacy because it's quite possible that all schools overcharge their students.

Tu Quoque

28 ม.ค. 2552

- นายจุมพฏ กล่าวว่่า รัฐธรรมนูญมาตรา 177 กำหนดไว้ว่ารัฐมนตรีห้ามลงมติในเรื่องที่มีส่วนได้เสียกับตัวเอง
- ขณะที่ฝ่ายรัฐบาล นายชินวรณ์ บุญยเกียรติ ยกกรณีการพิจารณา พ.ร.บ.งบประมาณ ปี 2552 สมัย นายสมัคร สุนทรเวช เป็นนายกรัฐมนตรี ก็มีรัฐมนตรีของพรรคพลังประชาชนบางรายลงมติเห็นชอบร่างพ.ร.บ.ดังกล่าวเหมือนกัน

Our follies: try to recognize and avoid them

- **Confirmation bias** (our tendency to reaffirm our beliefs rather than contradict them),
- **Narrative fallacy** (our weakness for compelling stories),
- **Silent evidence** (our failure to account for what we don't see),
- **Lucid fallacy** (our willingness to oversimplify and take models too seriously),
- **Epistemic arrogance** (our habit of overestimating our knowledge and underestimating our ignorance).