Common Logical Fallacies

First let's define the word fallacy. Fallacy is at heart just a fancy name for a bad argument. In other words, it is an argument in which the evidence is not sufficient to prove the conclusion. The one significant difference between a fallacy and any other flaw is that a fallacy is a bad argument that follows a recognizable pattern of bad reasoning. So, fallacy is a bad argument that looks like a lot of other bad arguments.

Next, flaws on the LSAT do not simply concern the use of evidence that is contrary to reality. Flaws on the LSAT deal with problems in arguments that would exist even if all of the pieces of evidence were true. When looking at a flaw the proper approach is "OK, even if I accept this evidence as true, why does the conclusion still not follow logically?" So with that in mind let's discuss a few common logical fallacies.

Insufficient Evidence/Expanded Scope

This omnibus category of flaws includes several different particular types of fallacies, but they all have one common feature. The conclusion makes a larger claim than the evidence justifies. The following are some of the most commonly repeated ways of going beyond what the argument proves.

Possible/Probable vs. Actual/Certain

In this fallacy the evidence in the passage states that a particular thing is possible, or likely, and then concludes that that thing is in fact the case. The problem with this is that even something that is highly probable is still not certain. For example, it is extremely likely that getting struck by lightning will kill you, but that doesn't mean that getting struck by lightning will definitely kill you.

Example:
The vast majority of all lightning strikes involving people kill the victim instantly. Mac told me that he has been struck by lightning twice. Therefore, Mac must either be mistaken of else he is lying.

Test 19-2 q.23, Test 19-4 q.1, Test 20-1 q.14, Test 28-1 q.19*,

Not Proven vs. Disproved

In this fallacy the arguer assumes that a lack of evidence FOR a given position is the same as evidence AGAINST that position. A lack of definitive proof of a higher power, does not prove that there is no higher power. This fallacy has been used against many scientists who postulated things for which there was not yet definite proof (like germs, or Jovian satellites). One LSAT trick is to use a conclusion that many people believe, to see if you can recognize that an argument can be flawed even if the conclusion is widely accepted. For example, the fact that there is no definitive proof that any human being has telekinetic powers, does not prove that no human has telekinetic powers.

Example:
In spite of years of scientific research, and decades of space probes, there is still no proof of intelligent life on any planet other than earth. Therefore, it is safe to say that Earth is the only planet with intelligent life.

Superprep p.201 q.13, Test 20-4 q.18, Test 26-2 q.21, Test 26-3 q.10,

Partial vs. Complete Proof

This flaw is sometimes related to the flaws of composition/division. Proving that something is true of a part of an entity or group does not prove that it is true of the entire entity or group. For example, proving that the overhead light in the car doesn't work, does not prove that the whole car isn't working.

Example:
Mark's Uncle Rico had planned to take a group of students to see a football game in the big city. Unfortunately, three of the students' parents didn't approve of their children going on the trip, and refused to sign the permission slip for the outing. Without a signed permission slip no student is allowed to go to the big city. Therefore, Rico will have to cancel the trip.

Superprep p. 60 q. 2, Superprep p. 66 q. 21, Superprep p. 301 q. 5
Test 19-4 q. 3, Test 23-2 q.21*, Test 24-2 q.1, Test 24-3 q.12, Test 26-3 q.5, Test 26-3 q.8, Test 28-3 q.2

One Option vs. the ONLY option

Just because a given option or solution is a viable one, does not prove that it is the only viable option or solution. Because this type of flaw inherently assumes that there are no other options, this flaw is also very common on assumption questions as well as flaw questions.

Example:
In recent years, the threat of terrorist attack at major sporting events has been steadily increasing. With fairly available technology, tens of thousands of people could be killed in a single event. Therefore, the only way to avoid the senseless death of thousands is to employ bomb-sniffing dogs at all sporting event venues.

Superprep p.202 q.2, Test 24-2 q.6, Test 25-2 q.18

False Dilemma/False Dichotomy

These flaws are very closely related to the one above. In this case the argument provides evidence about two opposing cases, and then assumes that these are the only possible cases. The main issue however is that there is at least one other possibility. You

can think of this as the forgotten baby bear fallacy. In the Goldilocks story, the Papa Bear's porridge is too hot and the Mama Bear's porridge is too cold. These aren't the only bowls on the table, and the Baby Bear's porridge is just right, and therefore offers a third option.

Example:
If a person is poor then they will wish they had more and be jealous. If a person is rich, then they will be greedy and snobbish. Since both jealousy and greed are vices, everyone will have at least one vice.

Test 22-4 q.9, (Test 24-3 q.25)

Word Strength Problems

Most of the fallacies that deal with word strength deal with moving to a comparative or superlative in the conclusion. For example, saying that Bob is a great piano player, does not prove that Bob is the greatEST piano player.

Example:
Mary is clearly an outstanding manager. Her employees often express their appreciation for her outstanding skill. She has also had extremely high performance ratings from the day that she started at the company. Therefore, she ought to receive the award for the Best Manager this year.

Test 22-2 q.10, 22-2 q.20, Test 25-3 q.8, Test 26-3 q.17,

Expanded Scope/ Change of Scope

In this flaw, evidence that proves something about a particular item or group, is then assumed to apply to a larger item or group. In many cases this is a situation will involve a statement about one subgroup of a category of things, which is then assumed to extend to all other subgroups of that category. For example, just because I am good at LSAT tests, which are a sub-group of standardized tests, does not necessarily mean that I would do well on DAT tests which are another sub-group of standardized tests. This flaw could also be expressed as assuming that because two things have at least one characteristic in common, they must have other characteristics in common as well.

Example:
Maquanna loves orange juice. Since oranges are a type of citrus fruit, and grapefruits are a type of citrus fruit, Maquanna must also love grapefruit juice.

You could also lump into this category many of the flaws that plague survey-based conclusions. Having a non-representative sample, or insufficient sample would easily be expanded or changed scope.

Superprep page 63 q. 10, Superprep p. 295 q. 12, Test 23-2 q.4, Test 27-2 q.2

Correlation vs. Causation

One of the more common fallacies on the LSAT is the assumption that because two things are correlated with one another, those two things have a particular causal relationship. Even having established that there is some sort of correlation between two things (statistical or otherwise), it is not clear whether there is any causal link between the two things. There really are two potential problems with assuming a particular causal relationship. First, it is possible that the argument mistakes the cause for the effect.

Example:
It has been shown by research that nearly 95% of homeowners with homes valued at over $500,000 have high paying jobs. So, if you wish to get a high paying job, you should buy a home with a value over $500,000, since this clearly leads to a high paying job.

In this example it is fairly clear that the argument might have reversed the actual causal relationship. It seems plausible that the high paying job is what leads to the high value home, not the other way around.

The second possible problem in this type of reasoning is that there might be no direct causal link between the two things at all. There could be a third factor, that causes both phenomena, or the correlation might be pure coincidence.

Example:
A recent survey of MENSA society members revealed that the overwhelming majority of them enjoyed doing crossword puzzles. Therefore, either enjoying crossword puzzles helps one become a member of MENSA, or being a member of MENSA helps one enjoy crossword puzzles.

In this example, the problem is a bit more subtle. The problem is that it is consistent with the facts stated, that there is some third thing that is causing both of the two things in the correlation. In this case high IQ levels might account for both the membership in MENSA, and the enjoyment of crosswords. It is also conceivable that the correlation is based entirely on coincidence.

Test 20-1 q. 10, 20-4 q. 14, 22-2 q.7,

Bad If-Then Statements

There are two forms of illegal use of the if-then statements. Both fallacies create would-be contra positives, but don't do it properly. To lay the groundwork for understanding these, the antecedent is the part of the if-then statement that is before the arrow, or inside the circle. Which makes sense antecedent = thing that is before. The

consequent is the thing that goes after the arrow, or outside the circle. It is the result of the "if" part of the statement.

Affirming the Consequent

This flaw assumes that the statement "If A then B", also means "If B then A". It says yes to (affirms) the "then" portion of the statement (consequent), and fallaciously assumes that the "if" portion (antecedent) will follow. A good way to see the flaw in action is to look at the statement "If something is a dog, then it is a mammal." This statement is true, but if we affirm the consequent, the flaw will be obvious. The statement, "If something is a mammal, then it must be a dog" clearly does not correspond to reality. If the claimant happens to be a mammal it however, it leads to a rather humorous conclusion. To say it in another way, while being a dog is GUARANTEES that something is a mammal, being a dog is not NECESSARY for being a mammal.

Example:
Anyone who graduates as valedictorian of their high school class will be accepted to State College. Tico got his letter of acceptance to State College this week. Therefore, Tico must have been the valedictorian of his high school class.

Superprep B-1 q. 5, Superprep B-4 q.8, Test 22-2 q. 25, Test 22-4 q.21, Test 24-2 q.23, Test 27-2 q.23, Test 27-4 q.10

Denying the Antecedent

This is the other bad contra positive. It fallaciously assumes that "If A then B" also means "If not A then not B." To illustrate this flaw we will use the same base sentence that we used before. "If something is a dog, then it is a mammal." This however does not in any way imply that "If something is not a dog it is not a mammal." Each person who reads this statement is evidence that the latter statement is false. Another way of saying this is that just because ALL dogs are mammals, doesn't mean that ONLY dogs are mammals. Being a dog is SUFFICIENT to tell us that it is a mammal, but it is not REQUIRED for being a mammal.

Example:
Once a company starts to lose money, their stock falls and the board of directors inevitably fires the CEO. Megacorp has increased profits each of the last five quarters. Therefore, Tahnee Fahlu, the CEO of Megacorp, can be certain that the board will not fire her.

Superprep B-10 q.10, Test 23-2 q.19, Test 23-3 q.17, Test 25-3 q.23, Test 27-4 q.7, Test 27-4 q. 25

On top of recognizing these flaws when they occur, you also need to be able to recognize the descriptions of these flaws in the answer choices. Usually, the answer choices will say something to the effect that "the argument confuses a sufficient condition for a necessary condition." As a general rule if the answer choice says "blah blah blah blah necessary blah blah blah blah sufficient blah blah blah," then it is saying "bad contrapositive." Therefore, if the passage uses if-then statements improperly, this is probably the correct answer. If there are no if-then statements in the passage, don't even bother thinking through what the answer choice is actually saying. Cross it out and move on.

Percentages versus Actual Numbers

This flaw is based on the common misconception that an increase/decrease in percentage is identical to an increase/decrease in actual number. For example over the last 5 years the percentage of male applicants to law school has dropped from 51% of the applicant pool to 48% of the applicant pool. The flawed response to this information is to then assume that there are fewer male applicants to law school than there were 5 years ago. The actual number of male applicants has increased by several thousand. Over the same time period, however, the number of female applicants has risen by more than ten thousand. Thus the percentage of males has decreased, even though the actual number of male applicants has increased.

Example:
Over the past six months the number of people with caller ID in the city has increased by 4000. Therefore, the percentage of people with caller ID is greater today than it was six months ago.

You should always be on your guard against this type of flaw anytime you get a question that uses numeric or statistical data. This flaw can actually be used in both directions. It is equally flawed to assume that an increase in actual numbers will necessarily mean a increase in percentage as well.

Test 19-2 q.7, 21-3 q.19, Test 23-3 q.7, Test 26-3 q.19,

Composition and Division

Both of these flaws ultimately deal with the discrepancy between what is true of individual members of a group, and what is true of the group as a whole. Just because a given individual has a particular characteristic, and belongs to a group, does not mean that the group as a whole also exhibits that characteristic. This flaw is easy to see when we look at sports teams. The fact that a particular player hit more home runs than any other player in the league, does not prove that that players team hit more home runs than any other team in the league.

Example:
Mildred recently won the scoring average title for the Pinsburg Bowling League. Since she bowls for the Ivory Tower Bookstore team, they must have won the League Champoinship as well.

On the flip side of things, the fact that a certain team hit more home runs than any other team in the league, does not prove that the individual who leads the league in home runs belongs to that team.

Example:
The University of Esoteria has a science department that is renowned for its stellar astrophysics department. Since, Professor Spotted-Elk was named the Esoteria Teacher of the Year by the science committee, he must be a member of the astrophysics department.

Test 20-4 q.2, Test 23-3 q.16,

Faulty Comparisons

Comparisons and analogies are automatically suspect from a logical standpoint. If the two things that are being compared or analogized are not identical, then the strength of the analogy or comparison is limited to the extent that the two elements are similar. Thus, the only really good analogies from a logical standpoint would involve elements that are virtually identical in which case there is no need for an analogy. There are however certain types of comparisons that are more problematic than others.

In this type of flaw the argument reasons that because one thing has a characteristic, then another thing also has the same characteristic. The flaw is that the two things are not sufficiently similar to warrant the conclusion. In common speech, we call this "comparing apples to oranges." In many ways it is similar to the flaw that we mentioned as expanded/changing scope. The evidence includes one thing and the conclusion jumps to another thing.

Test 21-2 q. 5, Test 23-2 q.21*, Test 24-2 q.2,

Common Answer Choices

There are some answer choices that occur on a very regular basis, that are worth talking about even though they are not frequently correct.

Circular Reasoning

This flaw is listed in a number of ways. "The argument presupposes what it sets out to conclude." "…assumes the truth of the proposition it seeks to establish." "…merely restates a piece of evidence." Almost every LSAT tests ever given has this as an answer choice at least twice.

There are very few examples of questions where this answer choice is actually correct. Part of the problem is that it is extremely difficult to make a circular argument in the limited space of a logical reasoning question without being blatantly obvious.
One example would be as follows.

> *Yolanda has stated that I am an honest person. Although some have questioned the truth of this statement, I can vouch for Yolanda. She is completely trustworthy. Therefore, her claim about me must in fact be an accurate assessment.*
>
> The conclusion that I am in fact an honest person relies on assuming that I am telling the truth about Yolanda. So in the end, if it turns out that I am honest, then we can trust Yolanda when she says that I am honest.
>
> Test 24-2 q.8,

Equivocation

This fallacy essentially hinges on the ambiguity of words in the passage. At heart it is to use the same word, but in two different senses of the word. The common phrasings of this are…"uses equivocal language," or " relies on the ambiguous use of a key term," or any other phrasing that suggest that it is taking advantage of dual meanings of a single word.

> Example:
> *I have heard it said that America is the land of the free, and yet this can be no more that lying propaganda. In my 4 years of living in New York, I never was given anything that I didn't have to pay for in some way or another.*
>
> This argument clearly is relying on the two different definitions of the word "free."
>
> Correct answer on Test 19-1 q.1, Test 22-2 q.12, Test 22-2 q.24, Test 22-4 q.18, Test 25-3 q.17, Test 26-2 q.15,

Ad Hominem Attacks

This fallacy is actually one of the most common in the political arena. Its name comes from the latin meaning "against the man/person." In this fallacy the argument avoids addressing the opponent's argument, and focuses instead on attacking the person making the argument. The common answer choices for this fallacy are…"the argument attacks the proponents of an argument rather than the argument itself," or "the argument impugns the motives of the person making the opposing argument."

This fallacy often fools people because to a large extent we have come to accept this as a valid form of argument. However, the character of the person making or

supporting a particular argument tells us nothing at all about whether or not the argument is a good one.

Example:
Fahad was recently quoted as saying that the cities crime problem was the direct result of a lack of educational opportunities for lower income young people. However, Fahad is himself a rather seedy character, who has been seen in conversation with several known criminals. Therefore, his remarks should be disregarded.

Test 19-2 q.14, Test 25-3 q.4,

Contradictory Information

A small number of arguments will give information in them that is inherently contradictory. This type of flaw is not terribly common, in large part because of the difficulty of making it hard to spot. Most of the passages are 3 sentences or less, and if two of them contradict one another, it is usually not subtle.

Test 20-1 q.22, 21-3 q.19

Fallacious Appeal to Authority/Opinion

In this flaw the argument draws a conclusion based on what someone (or more than one someone) says/believes. The problem with this is that in many cases that is not sufficient to prove the truth of the conclusion. One form of this is to simply rely on the statements of someone who is not necessarily an expert on the subject. A variant of this is the appeal to public sentiment. In matters of fact (questions that have a factual answer) what people think is irrelevant.

For hundreds of years everyone believed that the earth was flat. Therefore, the earth must be (have been) flat.

Test 21-2 q. 25, Test 26-2 q.4, Test 28-1 q.9, Test 28-1 q.19*,

Assumption of Mental State

There are very few situations where it is valid to simply assume the mental state of someone else. This applies to people's beliefs, goal, dreams, desires, intents, hopes, thoughts, etc.

Test 21-3 q. 5, 22-2 q.6,

Statistics

It has been said that there are three types of deceptions. Little white lies, big fat lies, and statistics. That is not to say all statistics are lies, but rather people frequently misuse statistical information. To be used as valid evidence, statistics must follow a few rules, and breaking those amounts to a flaw. Here are a few examples:

Biased Sample

In this flaw the statistic does in fact show that there is a link between two things, or an increased likelihood of a particular phenomenon. The flaw is that the group used to show that correlation was biased toward that correlation. For example,

> *In a recent survey conducted in The Vatican City, over 80% of the respondents replied that their religious beliefs coincided most closely with that of the Roman Catholic Church. Therefore, the Roman Catholic theology must be more popular than other theologies.*
>
> Test 22-4 q.1