

Syllogisms and Fallacies 101

This isn't a course in logic, but all educated people should know the basic vocabulary and the basic underlying logic of the syllogism.

Major premise: No reptiles have fur.

Minor premise: All snakes are reptiles.

Conclusion: No snakes have fur.

As diagrammed below, the predicate of the major premise [X/have fur] is the predicate of the conclusion, while the subject of the minor premise [B/Snakes] is the subject of the conclusion. But the minor premise has to lead logically from the major premise to the conclusion. In this type of syllogism, the subject of the minor premise = the subject of the major premise [B = A]:

A is/does X

B = A

B is/does X

Hence: "No snakes have fur."

Since Snakes = reptiles (all snakes are reptiles), what is true of all reptiles must necessarily be true of all snakes.

Fallacy I

If some cats are black (If A is X)

And some televisions are black (And B is X)

Then some televisions are cats. (Then B = A)?????

Of course not. That's common sense, but the logical reason is that the predicate is the same for both the major and minor premises. There is no progression from the major premise through the minor premise to the conclusion. For the syllogistic form to be formally correct, you'd have to say:

If all cats are black (If A = X)

and some televisions are cats, (And if B = A)

then some televisions are black. (Then some Bs are X)

This, at least, makes logical sense, even though it doesn't make sense in the empirical world of our experience.

Fallacy 2

If all students carry backpacks. (If all A does X)

And my grandfather carries a backpack. (And B does X)

Then my grandfather is a student. (Then B = A)??????

No, but it's easy to analyze why. Once again the predicate [X/carries a backpack] is the same for the major and minor premises. To make these elements have some logical sense, you would have to treat the subject of the minor premise as equal to or a part of the subject of the major premise, i.e., "My grandfather is a student."

Correct

All students carry backpacks. (If all A does X)

My grandfather is a student. (And B = A)

My grandfather carries a backpack. (Then B does X)

See how the minor premise has to be a logical link between the major premise and the conclusion?

The Enthymeme

An "enthymeme is a rhetorical or informal syllogism that assumes the major or minor premise as a commonplace. As we'll see in the examples, the premises are validated by somewhat looser criteria.

Enthymeme: Eat your peas because they are good for you.

Major premise (or proof): If peas are [always] good for you.

Minor premise: And you should [always] eat what's good for you.

Conclusion: Then you should eat your peas.

This is a different kind of syllogism than the simple one that we have been using so far. In this case the minor or the major premise could be flipped without changing the logic. It basically asserts two commonplaces, that peas are good for you and that you should eat what's good for you. If both premises are true in this case, then the conclusion follows. The only way to establish a fallacy here would be to disprove one of the premises.

Enthymeme: No snakes have fur because they are reptiles.

Assumes as a commonplace the major premise that audience knows that no reptiles have fur.

Major premise: No reptiles have fur.

Minor premise: All snakes are reptiles.

Conclusion: No snakes have fur.

What about:

All snakes are reptiles because no snakes have fur.

If no reptiles have fur.
And no snakes have fur.
Then all snakes are reptiles.

No, because the predicate is the same for the major and minor premises.

What about:

All birds are reptiles because no birds have fur.

Same problem. When you break it out into a syllogism, you see that the major and minor premises have the same predicate:

If no birds have fur.
And no reptiles have fur.
Then all birds are reptiles.

Dubious Premises?

Are you starting with a premise that your audience is likely to question? Then use examples: facts, comparisons, and stories to support your premises' legitimacy.

Heinrich uses the following to illustrate the use of all three for someone who is trying to persuade his friend to play poker rather than going to see *Don Giovanni*.

Fact: You yourself said nothing's more soothing than a good cigar and a full house. [Playing poker is relaxing.]

Comparison: Do they let you drink beer during a Mozart opera? [Drinking beer is relaxing.]

Story: I knew a guy who went to see *Don Giovanni* a few years ago. He suffers through the whole thing until right at the end, when he clutches his heart and slumps over dead. The last thing he sees before he dies is Don Giovanni getting sucked into Hell. [Operas are not relaxing]

Major Premise: If going to the opera is not relaxing, and playing poker is relaxing. [as proved by examples]

Minor Premise: And you want to relax.

Conclusion: Then you should play poker with us.

Enthymeme: You should play poker with us because you want to relax. [Assumes the major premise]

Fallacies

If you want to get into this in a big way go to this [link](#). But most fallacies boil down to two things:

1. Bad premise (or proof): Isn't the fraternity system a reflection of the entire system of higher education?[false comparison]
2. Bad conclusion: Our newsletter is a big success. After we started publishing it, alumni giving went up. [chanticleer fallacy]

Arguing the Inarguable

Chocolate is better than vanilla.

[It's not about which is better, but about having the choice.]

If we pull out now, our soldiers will have died in vain.

[If the mission fails, then hundreds more soldiers will have died in vain.]

You're attacking our senior citizens, and that's just wrong.

[I'm not attacking seniors; I want to insure a secure future for all seniors for decades to come.]