

Exercise 1

Identify the argument pattern in the following arguments and determine if the argument is valid or invalid.

1. If the mayor will hire six hundred new police officers, then he must believe that crime is a major problem in New York; and this he does believe. So he will hire six hundred new police officers.

This is a propositional deductive argument.

1. If the mayor will hire 600 new police officers, then he must believe that crime is a major problem in NY
2. The mayor does believe that crime is a major problem in NY. Therefore
3. The mayor will hire 600 new police officers.

If M then C

C

Therefore

M

Invalid: Affirming the Consequent

2. The Bureau of Engraving and Printing is gearing up to print new bills with polyester filament that cannot be duplicated by copiers, so you know that counterfeiting has become a major problem for the government.

This is a propositional deductive argument with a missing premise

Conclusion: you know that counterfeiting has become a major problem for the government.

1. If the BEP is gearing up to print new bills with polyester filament, then you know that counterfeiting has become a major problem for the government.
2. The BEP is gearing up to print new bills with polyester filament. Therefore
3. You know that counterfeiting has become a major problem for the government

Valid: Modus Ponens

3. If the allies honor their commitments to pay for the Gulf War, then the war won't cost the U.S. anything. But they won't, so the U.S. will have to pony up.

Notice that you have an “If...then...” This is a propositional argument. I need to identify its underlying pattern, so let me standardize it.

1. If the allies honor their commitments to pay for the Gulf War, then the war **won't cost** the U.S. anything.
2. The allies **will not** honor their commitments to pay for the Gulf War. Therefore
3. The war **will cost** the US (they will have to pony up)

What is the underlying pattern? Using letters to abbreviate each proposition:

1. If A then C
2. Not A, therefore
3. Not C

This is denying the antecedent and it is invalid and so the argument fails the R and G condition.

4. Some of the tribes that aren't in revolt are not opponents of the Mengistu regime. Therefore, as likely as it seems, some of the tribes that oppose Mengistu are not revolutionaries.

Notice that we have statements beginning with “some.” That indicates that this is a categorical deductive argument. I need to standardize the passage:

1. Some of the tribes that aren't in revolt are not opponents of the Mengistu regime.
Therefore
2. Some of the tribes that oppose Mengistu are not revolutionaries

Let's identify the underlying pattern, using letters to abbreviate the categories:

1. Some T are not O. therefore
2. Some O are not T

T = tribes not in revolt

O = opponents of Mengistu

My underlying pattern: Invalid Conversion 2. This is invalid and fails the R and G condition.

5. America's largest consumer electronics manufacturers all sell computers, and none of America's premier distribution systems for technological products are among the country's largest consumer electronics manufacturers. So, no American computer is a premier distribution system for technological products.

This is another categorical argument—it is about the categories of manufacturers, etc. Let's standardize the argument:

1. American's largest consumer electronics manufacturers all sell computers.
2. None of America's premier distribution systems for technological products are among the country's largest consumer electronics manufacturers. Therefore
3. No American computer is a premier distribution system for technological products

As it is, this argument doesn't correspond to any of our patterns. So I have to ask if I can easily make it fit one of our categorical patterns. Let's rewrite the argument slightly:

1. All of America's largest CEM are manufacturers that sell computers (MSC).
2. No American premier distribution system (PDS) are CEM. Therefore
3. No MSC are PDS.

Let's simplify it even more:

1. All CEM are MSC
2. No PDS are CEM. Therefore
3. No MSC are PDS

What pattern is this? It's identical to invalid syllogism 2 where

X = CEM

Y = MSC

Z = PDS

So it's invalid and the argument fails the R and G condition.

6. Overheard: “If drunk-driving checkpoints continue, then next there will be checkpoints for driver’s licenses, infant car seats, you name it. And if we have checkpoints for all those things, we’re going to wish we hadn’t allowed drunk-driving checkpoints in the first place.”

Standardize the argument:

If drunk-driving checkpoints continue, then next there will be checkpoints for driver’s licenses, infant car seats, you name it.

if we have checkpoints for all those things, we’re going to wish we hadn’t allowed drunk-driving checkpoints in the first place.

If drunk driving checkpoints continue, then we’re going to wish we had not allowed them in the first place.

If DDC then CP

IF CP then W

Therefore

IF DDC then W

Valid Chain Argument

7. There were some people who were disappointed when Ted Kennedy announced he wouldn’t run for president, but they aren’t what you’d call the old-school liberals. So, none of the old-school liberals were disappointed.

This is a categorical deductive argument. I have to standardize it so that it fits one of my patterns.

None of the people who were disappointed...were old school liberals.

None of the old school liberals were disappointed.

No D are L

No L are D

Valid Conversion 1

8. “At the station bookstall, Jim bought himself a *Rude Pravo* and boarded the Brno train. If they had wanted to arrest him, they would have done so by now.”

—John Le Carre, *Tinker, Tailor, Soldier, Spy*

Notice that in this case, I have a missing premise and conclusion. My patterns can help me figure out how to standardize the argument.

If they had wanted to arrest him, they would have done so by now
They haven't done so by now
Therefore
They don't want to arrest him

Valid: Modus Tollens

9. From an editorial: “Any instance of censorship is wrong, and the Soviet attempt to squelch the ABC miniseries *Amerika* is the worst kind of censorship—that imposed by another country. ABC executives should not cave in to the Soviet pressure.”

Missing conclusion

I have to reverse the order of the premises. The order of the premises does not matter.

All C are W
All S are C
Therefore
All S are W

Valid syllogism 1

10. There are few actors who work for humanitarian causes, so some humanitarians are actors.

Some actors are people who work for humanitarian causes. So,
Some humanitarians are actors.

Valid Conversion 2

11. If complex technology leads to occasional bizarre accidents, then complex technology sometimes has unpredictable effects. Complex technology does lead sometimes to bizarre accidents. Therefore, it sometimes has unpredictable effects.

Valid: Modus Ponens

12. No vacation is complete without a tropical beach. All tropical beaches come with some risk of sunburn. Thus no vacation is complete without some risk of sunburn.

1. All tropical beaches are places that come with some risk of sunburn.
2. No vacation is complete without a tropical beach. Therefore
3. No vacation is complete without being at a place that comes with some risk of sunburn.

All T are S
No V are T
No V are S

Invalid syllogism 2—notice that you have to use valid conversion 1 on the conclusion to make it fit the pattern.

13. Men without money are men without power. Men without power are men without self-esteem. Therefore, men without self-esteem are men without money.

All men without money are men without power.
All men without power are men without self-esteem. Therefore
All men without self-esteem are men without money.

All M are P
All P are S
All S are M

Invalid. Notice that if my conclusion were “All M are S” then the argument would be valid. But as written, it is not valid.

14. Letter to the Editor: “I would just like to say, in response to the blatantly anti-Christian letter that appeared on your editorial page on March 11, in which it was alleged that Christians aren’t racists, but are bigots, just how is that supposed to be? All racists are bigots, so if we Christians aren’t racists, then it follows that we aren’t bigots either. The writer is not only anti-Christian, he’s anti-logic.”

All R are B
No C are R Therefore
No C are B

Invalid Syllogism 2 – note that you have to perform valid conversion 1 on the conclusion

15. “Either human actions are entirely governed by causal laws or they are not. If they are, then they are necessary. That is, given our heredity and environment we could not act otherwise than we do. If they are not, then they must occur by chance. If they occur by chance, they are not necessary. But equally we have no control over them. In neither case can we help ourselves.” (A. J. Ayer, “Fatalism”)

Either human actions are entirely governed by causal laws or they are not.

If human actions are governed, then they are necessary.

If they are necessary, we can't help ourselves.

If human actions are not entirely governed by causal laws, then they must occur by chance.

If they occur by chance, they are not necessary.

If they are not necessary, we have no control over them.

If we have no control over them, we can't help ourselves. Therefore

We can't help ourselves.

Either G or Not G

IF G then N

If N then H

If Not G then C

IF C then not N

If not N then no C

If no C then H, Therefore

H

This is a combination of several patterns: disjunctive dilemma, modus ponens, and chain argument. All the patterns that make up this argument are valid and so the overall argument is valid.