# Philosophy 201: Critical Thinking
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Unit 1: Argument Patterns

Implicit Premises

There are times when not all of the premises in an argument are expressly stated. The premises are often left out for reasons of brevity and style.

It is okay to have implicit (also called unstated or suppressed) premises as long as:

1) those who are given the argument can easily supply these unstated premises for themselves;

2) the unstated premises are themselves uncontroversial.

Examples

First, write out the argument in standard form (that is, list the premises, draw a line and then write the conclusion).

You shouldn't buy pornography because it leads to violence against women.

Pornography leads to violence against women.

_____.

You shouldn't buy pornography.

This argument is not valid as it stands. The conclusion will only follow if we think that violence against women is a bad thing (and thus we shouldn't do it).

Pornography leads to violence against women.
<u>You shouldn't do things that lead to violence against women.</u>
You shouldn't buy pornography.

This premise was left out because "You shouldn't do things that lead to violence against women" is a wide held true belief.

A nation without a conscience is a nation without a soul. A nation without a soul is a nation that cannot live.
-Winston Churchill

A nation without a conscience is nation without a soul.
<u>A nation without a soul is a nation that cannot live.</u>

Churchill has left out the conclusion in this argument. He left it out because he thinks we can easily draw the conclusion for ourselves and because he doesn't want his speech to sound repetitive.

A nation without a conscience is nation without a soul.
<u>A nation without a soul is a nation that cannot live.</u>
A nation without a conscience is a nation that cannot live.

Eighteen year olds are old enough to vote and go to war.

<u>_____.</u>
Eighteen year olds should be old enough to drink.

We are missing a connection between what is stated in the premise and what is stated in the conclusion. Often this bridge can be made with an if … then statement.

Eighteen year olds are old enough to vote and go to war.
If a person is responsible enough at eighteen to vote and go to war then they are responsible enough to drink.
Eighteen year olds should be old enough to drink alcohol.

… the law does not expressly permit suicide, and what it does not expressly permit it forbids. - Aristotle, *Nichomachean* Ethics

Sometimes premises are implicit because they are controversial. These premises should always be stated.

Keeping families healthy should be our highest priority so same-sex marriage should be illegal.

The RCMP doesn't have a very serious focus on stopping terrorism. A major terrorist attack will happen in this country.

The conflict in Indonesia is a genuine war. So it can't possibly be morally justified.

Argument Forms

In this section we will be learning to recognize six common argument patterns. You will need to recognize the pattern and call it by name.

Disjunctive Syllogism (DS)

A disjunctive sentence is made by joining two sentences with an 'or'. A syllogism is a kind of three lined argument.

Here is the pattern of a disjunctive syllogism. The letters 'P' and 'Q' represent any two sentences.

P or Q
Not P
Q Valid

Notice the pattern here. In the first premise we are given two options to choose from. In the second premise, one of these options is taken away so we conclude that the other option must have occurred. If the premises are true then the conclusion would have to be true as well (thus, the pattern is valid).

Is the following argument a disjunctive syllogism?

P or Q
P___
Not Q

No, it is not. Be careful here. In the first premise two options are given. But in the second premise we claim that one of these option does occur. Does that mean that the other option will not? Not necessarily. For example, when someone asks me if I will get any exercise this week, I could respond 'I will go for a swim or I will go for a hike tomorrow'. If it turns out that I went for a swim does that mean that I won't go for a hike? No, I could do both. I was just saying that I'll do at least one of them.

In order for an argument to be a DS, two options need to be given and then one of the options has to be taken off the table by showing that it won't happen. Then, just one option remains.

Either we'll go to the park or we won't watch tv.
We won't be going to the park.
So, we won't watch tv.

P or not T
Not P___
Not T

Hypothetical Syllogism (HS)

A hypothetical is a statement of the form if … then. The hypothetical syllogism consists of three if … then statements.

If _____ then _____
Antecedent Consequent

If P then Q
If Q then R
If P then R Valid

Notice that there is one term repeated in the premises (Q). The repeated term is in the antecedent in one of the premises and in the consequent of the other. These terms effectively cancel each other out. Whatever term is leftover in the antecedent (P) ends up in the antecedent of the conclusion. Whatever term is leftover in the consequent on the premise ends up as the consequent of the conclusion.

Are these hypothetical syllogisms?

If P then Q
If R then Q
If P then R

If S then (R and T)
If (R and T) then not D
If S then not D

The last four patterns will all have one premise that is an if … then statement. Recall the the parts of an if … then statement are 'if (antecedent) then (consequent)'.

Modus Ponens (MP)

If P then Q
P
Q Valid

In modus ponens, the antecedent in the if … then statement is repeated in the other premise.

We can see from the following example that modus ponens will be a valid argument form.

If it is raining then it is cloudy. (This must be the case.)
It is raining.
It is cloudy.

There is no way that the premises could be true and the conclusion false.

Are the following instances of modus ponens?

If not (G or H) then J
Not (G or H)
J

If R then (Q and T)
Q and T
R

Affirming the Consequent (AC)

If P then Q
Q
P Invalid

If it is raining then it is cloudy.
It is cloudy.
It is raining. (Just because the sky is cloudy, that doesn't guarantee that you have rain.)

The name of this pattern tells you what happens in the second premise. Take the consequent of the if … then statement and affirm it (or repeat it). We can see that this pattern is invalid by the following example.

Modus Tollens (MT)

If P then Q
Not Q
Not P  Valid

In modus tollens, the second premise is the negation of the consequent in the first premise. We can see from this following example that this pattern will be vaild. That is, when the premises are true, the conclusion may be false.

If it is raining then it is cloudy.
It is not cloudy.
It is not raining.

Are the following examples cases of MT?

If I win the lottery then I'll quit my job and write fiction.
I will not both quit my job and write fiction.
Thus, I did not win the lottery.

If L then (Q and F)
Not (Q and F)
Not L

If Bono is killed in a plane crash, then Bono is dead.
Bono was not killed in a plane crash.
Thus, Bono is not dead.

This is called Denying the Antecedent (DA)

If P then D
Not P___
Not D Invalid

If it is raining then it is cloudy.
It is not raining.
It is not cloudy.

Determine the argument patterns for the following examples. Are these arguments valid or invald?

If N and C
Not C___
Not N

If F then O
Not F___
Not O

P or not S
S____
P

If not G then H
H_____
Not G

If X then not F
If W then not F
If W then X

If ((W or not D) and Q) then (D or Q)
(W or not D) and Q
Q or D

Extended Arguments

In order to analyze an extended argument, we first need to determine the argument pattern.

Sometimes conclusions in an argument are used as premises in a further argument.

E.g. Pat cannot be a father, because she is not male. Therefore, she can't be a grandfather either.

1. Pat is not male.
(Only males can be fathers.)
2. Pat cannot be a father.

2. Pat cannot be a father.
(Only fathers can be grandfathers.)
3. Pat cannot be a grandfather.

I won't win the race since Jack showed up and he is faster than I am.

1. Jack showed up to the race.
2. Jack is faster than I am.
3. I won't win the race.

Mr. Speaker, I oppose this measure, I oppose it first because it is expensive. I further oppose it because it is untimely.

1. <u>This measure is expensive.</u>
3. I oppose this measure.

2. <u>The measure is untimely.</u>
3. I oppose this measure.

(1) Joe can't be a freshman since (2) all of the freshman are at the concert and (3) Joe is still here. (4) Joe can't be a junior since (5) the juniors all have varsity jackets and (6) Joe does not have a jacket. (7) Joe can't be a senior because (8) no senior would be caught dead here. (9) Joe must be a sophomore.

(1) The conditions under which many food animals are raised are unhealthy for humans. (2) To keep these animals alive, large quantities of drugs must be administered. (3) These drugs remain in the animal's flesh and are passed on to humans who eat it.

(1) When parents become old and destitute, the obligation of caring for them should be imposed on their children. Clearly, (2) children owe a debt to their parents. (3) Their parents brought them into the world and cared for them when they were unable to care for themselves. (4) This debt could be appropriately discharged by having grown children care for their parents.

(1) It appears that animals may be able to predict earthquakes. (2) Prior to a major earthquake in China, hundreds of snakes suddenly appeared from hibernation and froze to death in the snow, (3) fish were seen leaping from the rivers and lakes, (4) cows and horses refused to enter barns. Also, (5) prior to a quake in Fremont, California, a flood of callers reported strange behaviour from their pets and domestic animals.

(1) There is a lot of pressure on untenured college teachers to dumb down their courses. (2) Administrators tend to rehire teachers who bring in more money, and (3) teachers who dumb down their classes do precisely this. Why? Because (4) easier classes attract more students, and (5) more students means more money for the school.