Chapter 3

Philosophy and Arguments

3.1 Homework

Read the chapter, do the exercises within the chapter and answer the following questions:

1. What is a valid argument?
2. Can a valid argument have a false conclusion?
3. Provide an example of a valid argument which is not sound
4. Can a sound argument have a false conclusion?
5. What is the contraposition of the following conditional: 'If you are sick, then you are alive'
6. What are the two ways in which one can misuse a conditional? Provide examples.
7. Provide an example of a slippery slope argument
8. What is a straw man argument? Provide an example.

3.2 Great Sources

- The irreplaceable Jim Pryor website: `http://www.jimpryor.net/teaching/vocab/index.html`
- A website for learning and practicing: Dr. Joe Lau `http://philosophy.hku.hk/think/arg/`
- For logical fallacies, to Shefen's guide to logical fallacies at `http://onegoodmove.org/fallacy/toc.htm`
- Some books might useful too, as, for example:

Weston, Anthony, *A Rulebook for Arguments*, 3rd edn. (Indianapolis: Hackett, 2000).

The following notes rely heavily on the above sources.

3.3 What is an argument?

3.3.1 What philosophical arguments are not

Arguments in philosophy are:

- NOT a means to fight:

  "The goal of an argument is not to attack your opponent, or to impress your audience. The goal of an argument is to offer good **reasons** in support of your **conclusion**, reasons that all parties to your dispute can accept." (Jim Pryor)

- NOT a pure denial of your opponent view:

  "Even if what your opponent says is wrong and you know it to be wrong, to resolve your dispute you have to produce arguments. And you haven't yet produced an argument against your opponent until you offer some reasons that show him to be wrong."(Idem)

- NOT about your feelings:

  Why? Simply because feelings are not good warranty of truth. They get it wrong, quite often actually.

- NOT about your personal opinions and beliefs:

  Again, unless you produce an argument, the mere fact that you believe something is not compelling.

3.3.2 What philosophical arguments are

Definition 3 – *Argument*

An argument is a sequence of sentences where one (the conclusion) is meant to follow from or be supported by the others (the premises).

So, an argument is made of:

1. Several premises
2. A conclusion

Whenever you are producing an argument, you derive a conclusion from some premises. Giving an argument most of the time consists in having someone accept your premises, so that they have to accept what logically follows from these premises.

Here is a classic example:

- Premise 1: all men are mortal
- Premise 2: Socrates is a man
- Conclusion: Socrates is mortal

Now, there are TWO MAIN QUESTIONS you want to ask yourself to evaluate an argument:

1. Does the conclusion logically follow from the premises?
2. Are the premises true?

These two questions are independent:

- There are arguments with true premises, but in which the conclusion does not follow from the premises

  Example:

  P1: Paris is in France

  P2: France is in Europe

  CC: Paris has been completely destroyed during WWII

- There are arguments in which the conclusion follows from the premises, but these premises are false:

  P1: All German people are muslim

  P2: Paris is in Germany

  CC: All parisians are muslim

$\longrightarrow$ *The above distinction corresponds to the crucial distinction between the notions of a* valid argument *and a* sound argument*.*

3.4 Valid vs. Invalid Arguments

The following is quoted from Jim Pryor's website

Definition 4 *Valid argument*

We call an argument ***deductively valid*** *(or, for short, just "valid") when the conclusion is entailed by, or logically follows from, the premises.*

- **Validity is a property of the argument's form**. It doesn't matter what the premises and the conclusion actually say. It just matters whether the argument has the right form. So, in particular, a valid argument need not have true premises, nor need it have a true conclusion. The following is a valid argument:

1. **All cats are reptiles.**

2. **Bugs Bunny is a cat.**

3. So Bugs Bunny is a reptile.

Neither of the premises of this argument is true. Nor is the conclusion. But the premises are of such a form that if they were both true, then the conclusion would also have to be true. Hence the argument is valid.

- **To tell whether an argument is valid**, figure out what the form of the argument is, and then try to think of some other argument of that same form and having true premises but a false conclusion. If you succeed, then every argument of that form must be invalid. A valid form of argument can never lead you from true premises to a false conclusion.

  For instance, consider the argument:

  1. **If Socrates was a philosopher, then he wasn't a historian.**

  2. **Socrates wasn't a historian.**

  3. So Socrates was a philosopher.

  This argument is of the form "If P then Q. Q. So P." (If you like, you could say the form is: "If P then not-Q. not-Q. So P." For present purposes, it doesn't matter.) The conclusion of the argument is true. But is it a valid form of argument?

  It is not. How can you tell? Because the following argument is of the same form, and it has true premises but a false conclusion:

  1. **If Socrates was a horse** (this corresponds to P), **then Socrates was warm-blooded** (this corresponds to Q).

  2. **Socrates was warm-blooded** (Q).

  3. **So Socrates was a horse** (P).

  Since this second argument has true premises and a false conclusion, it must be invalid. And since the first argument has the same form as the second argument (both are of the form "If P then Q. Q. So P."), both arguments must be invalid.

- Here are some more examples of INVALID ARGUMENTS:

The Argument	Its Form
If there is a hedgehog in my gas tank, then my car will not start. My car will not start. Hence, there must be a hedgehog in my gas tank.	If P then Q. Q.So P.
If I publicly insult my mother-in-law, then my wife will be angry at me. I will not insult my mother-in-law. Hence, my wife will never be angry at me.	If P then Q. not-P. So not-Q.
Either Athens is in Greece or it is in Turkey. Athens is in Greece. Therefore, Athens is in Turkey.	Either P or Q. P. So Q.
If I move my knight, Christian will take my knight. If I move my queen, Christian will take my knight. Therefore, if I move my knight, then I move my queen.	If P then Q. If R then Q. So if P then R.

- **Invalid arguments give us no reason to believe their conclusions. But be careful! The fact that an argument is invalid doesn't mean that the argument's conclusion is false.** The conclusion might be true. It's just that the invalid argument doesn't give us any good reason to believe that the conclusion is true.

  If you take a class in Formal Logic, you'll study which forms of argument are valid and which are invalid. We won't devote much time to that study in this class. I only want you to learn what the terms "valid" and "invalid" mean, and to be able to recognize a few clear cases of valid and invalid arguments when you see them.

- **Exercise** For each of the following arguments, determine whether it is valid or invalid.

  If it's invalid, explain why.

  - Your high idle is caused either by a problem with the transmission, or by too little oil, or both. You have too little oil in your car. Therefore, your transmission is fine.

  - If the moon is made of green cheese, then cows jump over it. The moon is made of green cheese. Therefore, cows jump over the moon.

  - Either Colonel Mustard or Miss Scarlet is the culprit. Miss Scarlet is not the culprit. Hence, Colonel Mustard is the culprit.

  - All engineers enjoy ballet. Therefore, some males enjoy ballet.

End of Jim Pryor quote

3.5 Sound vs. Unsound Arguments

The following is quoted from Jim Pryor

Definition 5 – *Sound argument*

*An argument is **sound** just in case it's valid and all its premises are true.*

The argument:

1. **If the moon is made of green cheese, then cows jump over it.**

2. **The moon is made of green cheese.**

3. Therefore, cows jump over the moon.

is an example of a **valid argument which is not sound.**

- **Sound argument have true conclusions**

  We said above that a valid argument can never take you from true premises to a false conclusion. So, if you have a sound argument for a given conclusion, then, since the argument has true premises, and since the argument is valid, and valid arguments can never take you from true premises to a false conclusion, the argument's conclusion must be true. Sound arguments always have true conclusions.

- **Exercise** Here are some sample arguments. Can you tell which ones are valid and which of the valid arguments are also sound? (There are 5 valid arguments and 2 sound arguments.)

  I. If Socrates is a man, then Socrates is mortal. Socrates is a man. So, Socrates is mortal.

  II. If Socrates is a horse, then Socrates is mortal. Socrates is a horse. So, Socrates is mortal.

  III. If Socrates is a horse, then Socrates has four legs. Socrates is a horse. So, Socrates has four legs.

  IV. If Socrates is a horse, then Socrates has four legs. Socrates doesn't have four legs. So, Socrates is not a horse.

  V. If Socrates is a man, then he's a mammal. Socrates is not a mammal. So Socrates is not a man.

  VI. If Socrates is a horse, then he's warm-blooded. Socrates is warm-blooded. So Socrates is a horse.

  VII. If Socrates was a philosopher then he wasn't a historian. Socrates wasn't a historian. So, Socrates was a philosopher.

- **Conclusion on valid vs sound arguments**:

  If you read Philosopher X's argument and you disagree with his conclusion, then you're committed to the claim that his argument is unsound. Either X's conclusion does not actually follow from his premises–there is a problem with his reasoning or logic–or at least one of X's premises is false.

  When you're doing philosophy, it is never enough simply to say that you disagree with someone's conclusion, or that his conclusion is wrong. If your opponent's conclusion is wrong, then there must be something wrong with his argument, and you need to say what it is.

3.6 Conditionals

Definition 6 *Conditional*

A conditional is a proposition of the form "If P then Q". P is called antecedent of the conditional. Q is called the consequent of the conditional.

- **Be careful:** from the fact that "If P then Q" is true, *it does not follow* that "If Q then P".

  For example, from:

  "If you are pregnant, then you put on weight."

  it does *not* follow that:

  "If you put on weight, then you are pregnant"

- **Conditionals and necessary vs sufficient conditions**

  Consider the following conditional:

  If you are drinking legally in the United States, then you are at least 21 years old

  We say that:

  – 'Drinking alcohol legally in the US' is **the sufficient condition**

    You can also say:

    * It is sufficient for me to know that you are drinking to deduce that you are over 21.
    * If you are drinking, then it is a necessary consequence that you are over 21.
    * It necessarily follows that you are over 21 from the fact that you are drinking.

  – 'To be at least 21 year old' is **the necessary condition**

    You can also say:

    * It is necessary to be over 21 to drink
    * You must be over 21 to drink
    * It is not sufficient to be over 21 to be drinking
    * From the fact that you are over 21, I cannot deduce that you are drinking, or you do not necessarily drink if you are over 21

- **Equivalence**

  It can happen that not only P entails Q but also Q entails P. In this case, P and Q are both *necessary and sufficient* condition for Q.

  Other ways to say it :

  – P if and only if Q

  – P just in case Q

  An example: It is necessary and sufficient to be the closest descendant of the king to become the king.

- **Contrapositions**

  The proposition:

  If you are drinking legally in the United States, then you are at least 21 years old

  is *logically equivalent to* to the proposition:

  If you are NOT at least 21 years old, then you are NOT drinking legally in the United States.

  So that you can say:

  – If you are *not* over 21, then you do *not* drink

  – It is sufficient for me to know that you are *not* over 21 in order to deduce that you are *not* drinking, it is a necessary consequence / it follows necessarily that you are not drinking

  – From the fact that you are not over

- **Exercise**

  1. Which of these conditions are necessary, sufficient or necessary and sufficient?
     – to be over 16 / to be legally driving
     – to be human / to be an animal
     – to be alive / to be sick
     – to be alive / not to be dead
     – to be rectangular / to be square

   - to be possible / to be real
   - to do your homework / to get a good grade

2. Let us say that the following proposition is true: 'to be pregnant is a sufficient condition to not drink alcohol'

   Which of the following can you say if you follow the laws of logic?

   - You don't drink? Oh, then you must be pregnant!
   - You're pregnant? Oh, poor girl, you're stuck with carrot juice then!
   - No pregnant women drink alcohol
   - You are drinking tonight? I see, you are not pregnant yet.
   - Wait, you are not pregnant, right? So, you are drinking tonight!
   - If Justin is pregnant then he does not drink

3.7 Common Forms of Good and Bad Arguments

3.7.1 Common Forms of Good arguments

Modus Ponens

- Modus ponens - **If P then Q. P. Therefore Q.**
- If a kid is a girl, then the kid has pink dresses. Julie's kid is a girl. Therefore, Julie's kid has pink dresses

Be careful not to confuse this with the fallacy "affirming the consequence"

Modus Tollens

- Modus tollens - **If P then Q. non Q. Therefore non P.**
- If a kid is a girl, then the kid has pink dresses. Julie's kid has no pink dresses. Therefore, Julie's kid is not a girl.

Be careful not to confuse this with the fallacy "denying the antecedent"

Hypothetical Syllogism

- Hypothetical Syllogism: **If P then Q, If Q then R. Therefore, if P then R.**

- If God created the universe then the universe will be perfect. If the universe is perfect then there will be no evil. So if God created the universe there will be no evil. (J.Lau)

Disjunctive syllogism

- Disjunctive syllogism: **P or Q. Not-P. Therefore, Q ; P or Q, Not-Q. Therefore, P.**
- Either the government brings about more sensible educational reforms, or the only good schools left will be private ones for rich kids. The government is not going to carry out sensible educational reforms. So the only good schools left will be private ones for rich kids. (J. Lau)

Dilemma

- Dilemma: **P or Q. If P then R. If Q then S. Therefore, R or S.**
- If R and S are the same, then R is proven
- Either we increase the tax rate or we don't. If we do, the people will be unhappy. If we don't, the people will also be unhappy. (Because the government will not have enough money to provide for public services.) So the people are going to be unhappy anyway.(J. Lau)
- BE CAREFUL: it is common to find some FALSE DILEMMA! For example:

  Should we allow the government to take total control of the software industry, or must we allow companies like Microsoft to be completely free of government regulation? (Jim Pryor)

  Can you say why?

Reductio ad Absurdum

- In order to prove that S is false:

  1. First assume that S is true.

  2. From the assumption that it is true, prove that it would lead to a contradiction or some other claim that is false or absurd.

  3. Conclude that S must be false.

- Note that this is an application of the Modus Tollens
- One example:

You maintain that nothing is true. I tell why this is not true: if you maintain that nothing is true, then you maintain that this proposition "nothing is true" is true. But it should not be true, according to you, since, according to you nothing is true.

- Another example from Jim Pryor:

  A computer scientist announces that he's constructed a computer program that can play the perfect game of chess: he claims that this program is guaranteed to win every game it plays, whether it plays black or white, with never a loss or a draw, and against any opponent whatsoever. The computer scientist claims to have a mathematical proof that his program will always win, but the proof runs to 500 pages of dense mathematical symbols, and no one has yet been able to verify it. Still, the program has just played 20 games against Gary Kasparov and it won every game, 10 as white and 10 as black. Should you believe the computer scientist's claim that the program is so designed that it will always win against every opponent?

  No. Here's why: Suppose for the sake of argument that a perfect chess program that always wins were possible. Then we could program two computers with that program and have them play each other. By hypothesis, the program is supposed to win every game it plays, no matter who the opponent is, and no matter whether it plays white or black. So when the program plays itself, both sides would have to win. But that's impossible! In no chess game can both white and black be winners. So the supposition that a perfect chess program is possible leads to an absurd result. So that supposition must be false. A perfect chess program with the abilities the computer scientist claims must not be possible.

3.7.2 Common Forms of Bad Arguments

Affirming the consequent

- Affirming the consequent is using a conditional the wrong way: If P then Q. Q. Therefore P.
- Example: If Joe plays computer games with his friends all week end, his wife Sarah is upset. Sarah is upset. Hence, Joe has played computer games with his friends all week end.

Denying the antecedent

- Denying the antecedent is also using a conditional the wrong way: If P then Q. non P. Therefore non Q.
- Example: If you have a job, then you have money. Prince Charles does not work. Therefore, he has no money.

Circular Arguments, or Begging the question

- A circular argument presupposes its conclusion as one of its premises.
- Examples:

  - The police did not beat the suspect because beating suspects in not something that police ever do.

  - Darwin's account of evolution is just a theory. A theory is an unproven hypothesis. So, there is no compelling reason to believe Darwin's theory

  - We know that God exists, because it says so in the Bible. And we can trust the Bible on this matter because it's the Word of God, and so must be correct.(Jim Pryor)

Consequential fallacy

- In a consequential fallacy, one confuses the consequences of holding a belief with evidence for that belief.
- Examples: Darwin's theory is false because if it were true, there would be no morality.

Equivocation

- To make an equivocal argument is to use an ambiguous term in different ways in an argument.
- Examples:

  Mad men should not be allowed to make decisions about the lives of others. My father is mad. He should not make an important decisions about my life.

  Nature is governed by fixed and unchangeable laws. But every law is the work of some legislator. Therefore, there is some legislator responsible for the governing of Nature.(Jim Pryor)

  It's impossible for two objects to be separated by a vacuum. For if a vacuum is to separate them then nothing can be between them. But if nothing is between them, then they obviously aren't separated. (Jim Pryor)

Appeal to Consensus

- To appeal to consensus is to appeal to the fact that most people agree on P to establish that P.
- Example:

Many people believe that McDonals is the best restaurant in the world. Therefore, McDonalds is the best restaurant in the world.

Slippery Slope

- Slippery slope: incorrectly reasons that the arbitrariness of marking a distinction along some continuum shows that no distinction is possible
- Example:

  If you have only one hair, then you are considered bald

  If you have only two hairs, then you are considered bald

  ...

  If you have 100.000 hairs, then you are not considered bald

  The problem is that there is no precise number of hairs which sets the limit between being bald and not being bald.

  In this case, a slippery slope argument can go as follows:

  - There is no precise number of hair which distinguishes between a hairy and a bald person

  - Hence, there is no true difference between being bald and being hairy

Misleading vividness

- Misleading vividness: particularly vivid information is weighted more than other information in coming to a conclusion.
- Example:

  Elections France 2001

Genetic fallacy

- One commits a genetic fallacy whenever one is taking the source of a claim as evidence for or against the claim
- Example:

  Tom Cruise said that there is no such thing as a chemical imbalance of the body. Tom Cruise is crazy. Therefore, there is such thing as a chemical imbalance of the body.

Straw man

- One is attacking a straw man whenever one misrepresents someones position, argues against it, and concludes that the actual position is defeated.
- Example:

> Nigel: I believe that some kinds of sexual lifestyles are morally wrong.
>
> Basil: So, youre saying its OK for rednecks to beat up gay people?
>
> Nigel: No, Im not saying that at all. All people in our society should be protected from having unwanted violence inflicted upon them. Im just saying I think their chosen lifestyles are immoral.
>
> Basil: What makes you think its OK for you to force your morality on everyone else?
>
> Nigel: I havent said anything about forcing my morality on anybody. All I did was give my opinion about a certain moral issue. I didnt use any force or even the threat of force to coerce others to agree with me.
>
> Basil: But you are saying that you dont think gay people should have the same rights as straight people, right?
>
> Nigel: No. I think all people in a democratic society should have the same rights. That means that people should have the right to pursue lifestyles that others think are immoral. I havent said anything about depriving people of their rights or inflicting violence upon them. Im only giving my opinion about the morality of their behavior.

(Bebee (2003) "Good and Bad Arguments.)

3.7.3 Be always careful about analogies

Quoted from Jim Pryor

These sorts of arguments often raise issues about the burden of proof, because they are hostage to the discovery of unnoticed disanalogies. For example, here's a common argument against the death penalty. Suppose Lefty argues:

> Imposing the death penalty for murder is hypocritical and inconsistent. You only punish people for murder because you believe killing to be wrong. But then the death penalty itself must be wrong, because it too involves killing someone. And two wrongs don't make a right. So imposing the death penalty is just as bad as killing someone in cold blood.

Lefty is trying to convince us that we have to take the same view of murder and of capital punishment, else we're being inconsistent.

Now suppose Righty comes along, and criticizes Lefty's argument as follows:

> You say capital punishment is supposed to be analogous to murder. Well, then, you should also count other activities committed by the state as analogous to those same

activities when committed by criminals. In particular, since kidnapping–confining someone against their will–is wrong when committed by criminals, so too must it be wrong for the state to confine people against their will (in jails). Hence, if your argument that capital punishment is inconsistent is successful, then by the same reasoning, it would also be inconsistent to jail kidnappers. That is clearly an unacceptable result. So there must be something wrong with your analogy. Murder and capital punishment are similar in some respects. But there are important differences between them, too. And these differences are morally important.

Of course, Righty hasn't established here that the death penalty is morally acceptable; he's only criticized Lefty's argument that the death penalty is unacceptable. There might be other arguments against the death penalty, which are better than Lefty's.

In this exchange, we've seen an example of shifting the burden of proof. Lefty pointed out an analogy between murder and capital punishment and urged that they be regarded similarly. This puts the burden of proof on Righty, who wishes to regard the cases differently: Righty has to find some disanalogy, or to argue that the cases aren't genuinely analogous.

In our exchange, Righty argues that if Lefty's analogy were good, then so too should a second analogy be good, but the second analogy leads to clearly absurd results. So Righty concludes that the original analogy must be bad too.

This shifts the burden of proof back on Lefty, who has to argue that the cases really are analogous after all.

End of quote

Exercice

Other analogies: what do you think of it? (From J. Lau)

1. Democracy does not work in a family. Parents should have the ultimate say because they are wiser and their children do not know what is best for themselves. Similarly the best form of government for a society is not a democractic one but one where the leaders are more like parents.

2. "Wives, submit yourselves to your own husbands, as unto the Lord. For the husband is the head of the wife, even as Christ is the head of the church." - St. Paul, *Ephesians* 5:22

3.7.4 Issues about the burden of proof

Quoting Jim Pryor:

If no positive argument has been given for a claim P, then the following line of reasoning is fallacious:

[BAD] P has not been shown to be false. So it must be true.

If however, P is some claim which seems intuitively to be true, or if in our dispute or investigation there is some presumption that P is true, then anyone who seeks to prove not-P bears what we call the burden of proof. If he doesn't succeed in proving not-P–if we can show that his arguments that not-P are no good–then we're entitled to go on believing P.

In such a case, we're legitimately reasoning as follows:

[OK] There is some presumption that P is true. And P has not been shown to be false. So we can reasonably continue to accept P.

Of course, this isn't a deductive argument that P. There might be some reason why P is in fact false–we just haven't thought of it yet.

Here's an example of this sort of argument:

The CIA carefully scrutinized Margaret Thatcher for years, and never found her guilty of any terrorist activities or conspiracies. Nor is she known to associate with any terrorist organizations. Hence, until we acquire evidence to the contrary, we can reasonably accept that Margaret Thatcher is not a terrorist.

There is some presumption that Margaret Thatcher is not a terrorist. So unless a convincing proof that she is a terrorist turns up, it's reasonable to believe that she's not a terrorist. The burden of proof is on the person who wants us to believe that she is a terrorist.

As you can imagine, philosophers often seek to establish that it's their opponents, and not they themselves, who bear the burden of proof.

Where the burden of proof lies will sometimes depend on the dialectical situation. For example, contrast these two situations:

1. Eric is a committed believer in God who is trying to convince Matt that God exists. Matt is not convinced by Eric's arguments, and raises many doubts, which Eric attempts to answer. Matt is not an atheist. He is agnostic. Here Eric has the burden of proof. Matt only needs to examine and criticize Eric's arguments. He is not obliged to argue that God does not exist.

2. Karl is a committed atheist, who is arguing that God does not exist. Eric is a committed believer in God and he is trying to convince Karl that God does exist. Each person is trying to refute the other. Here both philosophers have the burden of establishing their position.

End of quote