UNIT 1

PHILOSOPHY AND ITS METHODS

Please, report any errors including typos to me by e-mail: Katarzyna.Paprzycka@swps.edu.pl

1. Philosophy and Its Methods

Philosophy is sometimes said to be the mother of all sciences. This is certainly true in the sense that during the time when Western philosophy began (in Ancient Greece), there was no science. Thales of Miletus (624BC-547BC) is sometimes given as an example of a thinker who broke with the old style of thinking. Thales answered the old question that the Greeks started worrying about "What is the primary constituent of all things?" by claiming that it was water. And he argued for this. He pointed out that everything that lives needs water. Plants wilt away without it, humans and animals die of thirst without it. It is abundant everywhere in inanimate nature – ice (solid things) turn to water, vapor (gas) turns to water. – This style of answer conflicted with the old way of explaining nature. Before Thales Greeks were talking about Oceanos and Thetys who were supposed to be the parents of us all. There was a striking difference between the old and the new style of thinking – before Thales Greeks talked about water deities, Thales talked about water.

We now have trouble understanding exactly what Thales and his followers meant by claiming that everything is made out of water, or out of air (Anaximenes), or out of fire (Heraclitus), or out of earth (Xenophanes), or out apeiron, which is neither of these four elements (Anaximander), or out of all four (Empedocles). It is clear, however that those thinkers began a systematic study of nature that was later to become the subject-matter of science. In this sense, too, philosophy is the mother of all sciences. Only relatively late, after the Industrial Revolutions, the special sciences really began breaking away from philosophy. Isaac Newton has published his opus, which became the foundation of modern physics, but entitled it *Philosophiae Naturalis Principia Mathematica* (The Mathematical Principles of Natural Philosophy).

There are three main areas of philosophy:

- ontology (metaphysics) – the study of being (What exists? What is existence)
- epistemology (theory of knowledge) – the study of knowledge (What do we know? What is knowledge?)
- ethics – the study of values (What is right? What is morality?)

Perhaps the distinguishing characteristic of philosophical thinking is that it is not empirical. Philosophical knowledge comes from reason, from thinking. This is why we sometimes talk about "armchair" philosophers – philosophers don't do experiments, they think. But such thinking may be harder than you, well, think. Let me give you my favorite example of a short philosophical system that shows just how surprisingly much you can learn by thinking.

2. Two Styles of Philosophizing

According to Władysław Tatarkiewicz, there are two styles of doing philosophy: constructive and critical. They derive from two basic attitudes that we exhibit toward the world: awe and distrust, respectively. We will look at two concrete pieces of philosophical work that exemplify the two approaches: Zeno's paradoxes of motion, which instantiate the critical style of philosophizing and Parmenides' theory of being, which is an example of the constructive approach in philosophy.

2.1. Zeno's Paradoxes of Motion

2000 years ago Zeno reasoned thus:

> We all think that motion is possible. We can observe it in the case of a runner who runs from start (point A) to finish (point B).
>
> However, to run from point A to point B, the runner has to first run from point A to point C, where C is the half-point between A and B.
>
> In order to run from point A to point C, the runner has to first run from point A to point C_1 where C_1 is the half-point between A and C.
>
> In order to run from point A to point C_1, the runner has to first run from point A to point C_2 where C_2 is the half-point between A and C_1.
>
> In order to run from point A to point C_2, the runner has to first run from point A to point C_3 where C_3 is the half-point between A and C_2.
>
> And so on, *ad infinitum*.
>
> In other words, to complete the A-B run, the runner must complete an infinite number of runs.
>
> But nobody can complete an infinite number of runs in a finite amount of time.
>
> Hence, the runner cannot complete the A-B run.
>
> Hence, motion is impossible.

It took over two thousands to solve Zeno's paradox. Today we know that motion is possible because we can show that Zeno's reasoning was fallacious. But we should not easily forget about asking the question what was going on in people's minds before the paradox acquired a solution. How did people who did not know how to solve the paradox approach it? The answer is simple: they did what comes most naturally to us all in such situations – they ignored the paradox, they laughed at it, in other words they displayed intellectual cowardice. History of philosophy is, in many ways, the history of the ways of facing up to dangerous thoughts, i.e. thoughts that touch us so deeply that we are afraid of even thinking them and when we do try to think them they appear absurd, obvious, incredible, idiotic or boring. Philosophy teaches not only how to handle such thoughts but should also teach us something about ourselves and about our first reaction to such thoughts.

Zeno's paradoxes involve the concept of infinity, which was understood better only in the 17th century. What Zeno's paradoxes *did* show, however, is that there is something wrong with the concepts that we employ to think and talk about motion. This is the primary task of the critical approach to philosophy.

2.2. Parmenides' Theory of Being

Parmenides, who lived in the 5th century B.C. in the town of Elea in the southern part of Italy, wanted to know what *being* is. It might just be that you hear the term 'being' for the first time, so let me tell you a little bit about it first. The Greeks thought that all things that exist share a common feature, viz. being. If you mentally assembled all things that exist (like tables, chairs, thoughts, God (theists would add), etc.), those things would differ greatly, but they would have one thing in common: they all have being (for they all exist). By contrast, if you mentally assembled all things that do not exist (like Pegasus, Mickey Mouse, Santa Claus, God (atheists would say), etc.), those things, again, would differ greatly but they would have one thing in common: they all have nonbeing (for they all do not exist).

Parmenides knew all this, but he wanted to know more about being. One day he had an incredible idea. He thought to himself: "Well, whatever else is true of being, being surely is. By the same token, nonbeing is not." These two thoughts might not seem like much, but if you think about them a little, you can become convinced that in fact they *must* be true. This is why Parmenides treated them like axioms of his philosophical system. They were claims established just by reason, by reflecting on the concept of being and the concept of nonbeing. Let's list and number them:

(A_1) Being (i.e. what is) is
(A_2) Nonbeing (i.e. what is not) is not

To treat a statement like an axiom means that you can actually use it to find out (again by reason) more information. And this was indeed the case in Parmenides' theory. He soon discovered (by reason) that:

(1) Being is ungenerable (does not have a beginning)
(2) Being is imperishable (does not have an end)
(3) Being is continuous (does not have holes)
(4) Being is unchangeable

You might be thinking to yourself "Well, that's interesting. I'm sure there is some smart person who knows how he discovered this. I have no clue." Well, the nice thing about discovering something by reason is that it is accessible to any being that has a reason, i.e. to any rational being, i.e. to all of us. And you will soon see that you will have no problems in seeing how Parmenides discovered those consequences.

He did so by the method of "indirect proof," which means that you try to assume the contrary of what you want to prove and show that this assumption leads to a contradiction, to absurdity. In such a case, logic tells us, we have to reject the assumption, we know that it is false.

Parmenides wanted to establish that being does not have a beginning. So he argued thus:

> Suppose the contrary of what I want to prove: suppose that being has a beginning. If so, then there would be some time when the being begins, let's call this time t_0. We should ask: What *was* prior to time t_0? The only available answer is: there had to be nonbeing. But we know from axiom (A_2) that nonbeing cannot be. This means that the supposition that being has a beginning leads to a contradiction, for it leads us to conclude that nonbeing would be (prior to t_0) while we know that nonbeing can not be (according to the truth of reason (A_2)). We must reject the supposition that caused the problem, viz. that being has a beginning, and conclude that being does not have a beginning, that being is ungenerable.

☯ Can you argue that being does not have an end? Try it.

☯ Can you argue that being is continuous, i.e. does not have holes? Try it.

Let's look at the last argument together: Being is unchangeable.

> Suppose the contrary of what I want to prove: suppose that being is changeable. If so, then it would have to be possible for being to change into something. What could it change to? Only nonbeing. If being changed into nonbeing, then nonbeing would be. But we know from axiom (A_2) that nonbeing cannot be. This means that the supposition

that being is changeable leads to a contradiction. We must reject the supposition and conclude that being is unchangeable.

You should really pause and wonder here how incredible this is. We started out with what appeared to be relatively insignificant discoveries (that being is and nonbeing is not) and ended up with rather remarkable assembly of properties of being. And we did all from the armchair!

Now we need to talk a little bit more about the philosophical method. We need to talk about arguments. You will encounter a lot of arguments in this course and will be also required to write engaging in argumentation.

3. Reasons (Justification) vs. Causes (Explanation)

Reasons tell us why we *ought to* believe (do) something. Causes tell us why we *in fact* do believe (do something).

Reasons are normative, causes are factual.

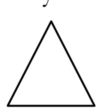
Reasons justify, causes explain.

(Caution: the terms here are imprecise, and we use terms such as 'explanation' or 'reason' in different ways than just outlined.)

Example. Suppose I say: "I believe that there are no triangles." You say "Why do you believe that?" You can be either asking for the *cause* of my belief or (more likely in this case) for my *reasons* for believing it.

Suppose that you are interested in the *explanation* of why (as a matter of fact) I hold the belief. I may tell you (truthfully) that I hold this belief because my father told me so (perhaps kept saying so), so I kind of have come to hold the belief by default, as it were. In doing so I make no pretense to argue that this is a *reason* – I may in fact believe that my father holds many false beliefs. I am only claiming that as a matter of fact this is how I came to believe that there are no triangles. I've told you what the cause is, not what my reasons are.

Suppose that you are interested in the *justification* of my belief. You want to know why a(ny) *rational* person *should* think that there are no triangles. Prima facie, you might add, there are reasons to believe quite the contrary. Look around you – there are triangles everywhere. And, you might cinch your argument by drawing one like that: There is at least one triangle. This one (you point).



And you can draw others . . . So, triangles exist! (Here is what I will say to you and what I will say to you will provide a *reason* for my believing that there are no triangles. The problem is that no matter how perfect your triangle might appear, it never will conform to the standards of geometrical definition of a triangle. The sides of this triangle are not fragments of a straight line (if you look closely, the segments will turn out not to be "straight" at all but rugged. No matter how precise your instruments will be, when you get further and further down to the atomic level, you will have swarming electrons not straight lines! And if you sum the angles, they are not going to be *exactly* 180°. So there are no triangles, not ones that satisfy the geometrical definitions. (There might be triangle-like figures, but they are not triangles.) – I have thus provided you with a reason why I believe that there are no triangles. After you read what I said, you should see that this is a consideration that tells us not so much why I do in fact believe that there are no triangles but rather why I ought to believe that there are no triangles. Moreover, to the extent that the reason is a good one, it will tell us why any rational person ought to believe that there are no triangles.

Note that justification and explanation do not exclude one another. It may very well be that I in fact acquired the belief that there no triangles from my father – by accepting his word for it and not really investigating any alternatives. And it may also be that, upon reflection, I did find a justification for it – I did find reasons for the belief, one of which I outlined above.

There need not be anything wrong about that. Sometimes we may hold beliefs that are not justified and seek out to justify them later. Other times, we may come to believe things because we are convinced that they are justified, that there are good reasons for them.

4. Arguments

Arguments are ways of demonstrating reasons. An Argument is an "atom" of reasoning. ***An argument has at least one premise and exactly one conclusion.*** The premises constitute reasons for believing the conclusion. Consider the paradigm example of an argument:

> All humans are mortal.
>
> Socrates is a human.
>
> Therefore, Socrates is mortal.

The premises tell us why we should believe that Socrates is mortal. Why? Because all humans are mortal and Socrates is a human. It is worth your while to pause for a moment to look at the words that usually indicate that what follows them are premises (premise indicators) and those that indicate that what follows them are conclusions (conclusion indicators).

Premise indicators:	because, since, for, inasmuch as, for the reason that, due to the fact that, as, after all.
Conclusion indicators:	so, therefore, thus, hence, it follows that, we may conclude that, accordingly, for that reason

4.1. Terminology

This a terminological point, but you should take it to heart:
Arguments are good or bad (formally: valid or invalid, sound or unsound). Arguments can never said to be true or false.

By contrast, premises and conclusions are statements, and they can be said to be true or false, but they cannot be said to be valid or invalid, sound or unsound.

4.2. Inductive and Deductive Arguments

There are two kinds of arguments: deductive and inductive. In deductive arguments, the conclusion follows with absolute certainty. The conclusion lays out what is already contained in the premises in one form or another. Inductive conclusions are only made more probable by the premises. The conclusion in inductive arguments states something over and above what is contained in the premises.

All the arguments we have considered so far were deductive, but here is yet another example for contrast:

All humans are mammals
All mammals are animals
So, all humans are animals.

And an example of an inductive argument:

Julius Cesar lived less than 300 years.
Medea lived less than 300 years.
Napoleon lived less than 300 years.
…
All people we know about lived less than 300 years.*
So, all people live less than 300 years.

(*With the possible exception of biblical figures. To take them into account you would need to consider a different number.)

In the following Units, we will be mostly concerned with deductive arguments.

4.3. Some Virtues of Deductive Arguments: Validity and Soundness

> An argument is *valid* when its conclusion follows from its premises.
>
> An argument is *sound* when its premises are true.

Here are some examples of valid arguments:

If Calvin is sick, he stays in bed.
If Calvin's father is sick, he goes to work.
Calvin and his father fell sick yesterday.
So: Calvin stayed in bed but his father went to work

All spaniels have long ears.
Missy is a spaniel
So, Missy has long ears.

You can't go wrong on this salad: if you follow the recipe, it will be perfect.
The salad did not turn out perfect.
So: you did not follow the recipe.

All metals conduct electricity.
But no sotones conduct electricity.
So, [Are any sotones metals?].

In the last case, you surely answered that no sotones are metals, and you did that even though you don't know what sotones are. How you I know that you don't know what sotones are? Because neither do I. In fact, I invented the term. For a purpose though. Validity is a *formal* feature of reasoning. It does not depend on the content of what is argued but only on the *form* of the arguments. What is an argument form? Well, you would have to take logic to understand it properly. But let me just give you an intuitive idea. Consider the arguments given below.

Space can**not** be **both** finite **and** unbounded.
Space is unbounded.
So, space is **not** finite.

You can**not** have **both** an ice-cream **and** a cake for dessert.
You had the cake.
So, you did **not** choose the ice-cream.

Whoever reads Dostoyevski will not be able to look at the world in the same way.
Susan read Dostoyevski
And she could not look at the world in the same way.

All all-powerful beings can do everything.
God is all-powerful.
So, God can do everything.

These are all different arguments, yet the arguments within the columns are similar – logicians say that they share their *argument form*, which is the logical structure of the argument. If individual sentences are replaced by variables, the logical form of the above arguments could be represented thus:

Not both *P* **and** *Q*
Q
So, **not** *P*

All As are B.
c is A
So, c is B

4.4. Invalidity of Arguments: The Method of Counterexamples

An argument is valid when the conclusion follows from the premises. An argument is invalid when the conclusion does not follow from the premises. We know from logic (you should not pretend to understand it here, take my word for it or take logic) that:

> An argument form is invalid iff[1] it is possible to find an argument of that same form with true premises and a false conclusion.

As I say, don't pretend to understand why here. But it is an important fact because it underlies the so-called method of counterexamples. Take the following argument.

If Warsaw is the capital of Poland, then Poznań is not.
Poznań is not the capital of Poland.
So, Warsaw is the capital of Poland.

The argument is fishy, it is invalid in fact. One way to see that it is invalid is to find a counterexample – an argument that has the very same form, i.e.

If P **then** Q	**If** Warsaw is the capital of Poland, **then** Poznań is not.
Q	Poznań is not the capital of Poland.
So, P	**So**, Warsaw is the capital of Poland.

that has true premises and a false conclusion. And we can find such a counterexample. Here is one:

If Gdańsk is the capital of Poland, then Poznań is not.
Poznań is not the capital of Poland.
So, Gdańsk is the capital of Poland.

Note that this argument has the same logical form as our original argument:

If P **then** Q	**If** Gdańsk is the capital of Poland, **then** Poznań is not.
Q	Poznań is not the capital of Poland.
So, P	**So**, Gdańsk is the capital of Poland.

But unlike in our original argument, here the premises are all true, but the conclusion is false. Let's take them one by one.

If Gdańsk is the capital of Poland, then Poznań is not. -- True.

This is surely true since there can't be two capitals of Poland – if Gdańsk were the capital of Poland then Poznań could not be.

Poznań is not the capital of Poland. -- True.

Gdańsk is the capital of Poland. -- False.

[1] This is an often used abbreviation of 'if and only if'.

We have thus found a counterexample to our original argument: an argument that shares the same logical form but has true premises and a false conclusion.

The method of counterexample is in fact very intuitive. We employ something like it in everyday life when we criticize arguments by using the form of words "this is like arguing that . . ." where what follows 'that' is an outrageous argument that shares the form with the original. Can you think of examples?

4.5. Important Facts

There is a delicate relation between the goodness of reasoning (validity of argument) and the truth of a conclusion. A *conclusion is assured to be true* only if *both*

the argument is valid *and*

all the premises are true.

- So, it is possible that if the reasoning is correct but at least one premise false, the conclusion will be false too.

  Whatever is made of cheese, you can eat with crackers.
  The Moon is made of cheese.
  So, you can eat the Moon with crackers.

- And, even if all the premises are true, but the reasoning fallacious, it is possible that the conclusion will be false.

  If Szczecin is the capital of Poland, then Poznań is not.
  Poznań is not the capital of Poland.
  So, Szczecin is the capital of Poland.

In neither of these two cases, is it guaranteed that the conclusion will be false, it only means that the argument does not provide a rational ground for holding the conclusion to be true.

- However, it is also possible for an argument to be invalid but for the conclusion to be true.

  If Warsaw is the capital of Poland, then Poznań is not.
  Poznań is not the capital of Poland.
  So, Warsaw is the capital of Poland.

5. Validity of Arguments

We will be using a lot of arguments in this course and using our intuitive facilities to keep us informed about what follows from what. As I said, to be very systematic about arguments we would need to do logic. I want require you to know logic, but it will be helpful at this point to introduce the basics of the method of proof. We will be occasionally presenting arguments in a step-by-step proof-like form, which will break down the argument into little steps, so that we will be able to see that at each point the step follows from previous steps.

5.1. The Method of Proof

Consider the following:

> If you pass PHI151, your best friend will invite you out to dinner in either a French or an Italian restaurant. He will not invite you to a French restaurant if you study hard but also watch a lot of TV. You will pass PHI151 if you work hard. You certainly did work hard though you also watched a lot of TV. So….

Will your friend invite you to dinner? If so, in what restaurant?

I'm sure you all answered that your friend will invite you to an Italian restaurant. You could only have answered otherwise, if you are so tired that it is time to take a nap. How can I be so sure? Well, let's look at the story step by step:

1. If you pass logic, your best friend will invite you out to dinner in either a French or an Italian restaurant.	Pr.
2. He will not invite you to a French restaurant if you study hard but also watch a lot of TV.	Pr.
3. You will pass logic if you work hard.	Pr.
4. You certainly did work hard though you also watched a lot of TV.	Pr.

This is so far what we know, what we are given, what we accept as true – given the story. These statements are the premises of the argument (hence the annotation 'Pr' on the side). Later, when consider such arguments, we will be paying particularly close attention to the reasons why premises are accepted. Here we just accept them to see what follows from them. And we can do this step by step.

Look at premises (3) and (4). Since you are told that you will pass logic if you work hard (3) and also that you did work hard (4), you can infer that:

5. You will pass logic	(3), (4)

This step is numbered – this is our first subconclusion, which is an intermediate step toward the conclusion of the argument. On the side we provide the numbers of the premises that we used in arriving at this step. Those two premises (3) and (4) provide the justification of the step.

Analyze the remainder of the argument to see that it indeed proceeds to the conclusion correctly.

6. Your best friend will invite you out to dinner in either a French or an Italian restaurant (1), (5)
7. Your best friend will not invite you out to a French restaurant (2), (4)
8. Your best friend will invite you out to an Italian restaurant (7), (6)

Do you think that something like this went on in your mind when you first read the story?

Exercise "Proof"

Here is another story that is not so clear. Do carry out an analysis into steps, like we did above to answer the final question. You might be asked a question about it on the quiz!

> Tommy is not interested in going out with Jane; Quentin, on the other hand, is quite interested in going out with Jane. Jane will go out with Quentin if either Quentin makes it to the football team or Gary is not be interested in going out with Jane. Quentin will make the football team if either Susan does not go out with him or Bob does not make the team. Susan will not go out with Quentin unless Jane invites her to her party. If Tommy is not interested in going out with Jane, she will invite neither him nor Susan to her party. So …

Will Jane go out with Quentin?

5.2. *Reductio ad absurdum* Arguments

Reductio arguments are very useful and common. Literally, the term 'reductio ad absurdum' means "reduction to absurdity." We are asked to suppose that what we want to prove is actually not the case. If we can show that our supposing that the claim that we want to prove is false leads to a contradiction, an impossibility, an absurdity then that will show that the conclusion cannot be false, i.e. that it must be true.

Example 1

We've seen a number of such arguments already. Consider one of Parmenides' arguments: Suppose the contrary of what I want to prove: suppose that being has a beginning. If so, then there would be some time when the being begins, let's call this time t_0. We should ask: What *was* prior to time t_0? The only available answer is: there had to be nonbeing. But we know from axiom (A_2) that nonbeing cannot be. This means that the supposition that being has a beginning leads to a contradiction, for it leads us to conclude that nonbeing would be (prior to t_0) while we know that nonbeing can not be (according to (A_2)). We must reject the supposition that caused the problem, viz. that being has a beginning, and conclude that being does not have a beginning, that being is ungenerable.

Reductio arguments can be usefully represented by means of the so-called indirect proof method where the *reductio* reasoning is represented separately (marked by a proof line). You can think of the *reductio* proof as a kind of "pretend" proof, where we are pretending that what we want proven is in fact not the case. The indirect proof graphically demonstrates that:

1. Being is	(Axiom A_1)
2. Nonbeing is not	(Axiom A_2)
3.1. Suppose that being has a beginning.	Supposition (*reductio*)
3.2. There is some time t_0 when being began.	(3.1)
3.3. Prior to t_0 there must have been nonbeing	(3.2)
3.4. But there could not have been nonbeing prior to t_0	(2)
3.5. Contradiction!	(3.3), (3.4)
4. Being does not have a beginning	(3.1)-(3.5)

Example 2

Here is a more ordinary argument that parents might use. It does not quite reach a contradiction, but an absurdity of another sort. The parents might reason thus:

We want our children to grow up strong and independent, so we cannot buy them each a car. If we did, our kids would think that the world has fallen on its knees before them. This would spoil them rotten and precisely fail to make them strong and independent.

This reasoning can also be represented by means of indirect proof thus:

1. We want our children to grow up strong and independent.	(Parents' Premise)
2.1. Suppose we bought them each a car.	Supposition (*reductio*)
2.2. They would think that the world is on its knees before them.	(2.1)
2.3. It would spoil them rotten, and exactly fail to make them strong and independent.	(2.2)
2.4. Absurdity! Buying our children cars would frustrate our desire for them to be strong and independent.	(2.3), (1)
3. So, we cannot buy them each a car.	(2.1)-(2.4)

Example 3

Here is yet another proof. Let the following equalities be given:

$b = a + d$
$a + a = e$
$c = e + d$

We can prove by means of *reductio ad absurdum* that $a + b = c$

1. $b = a + d$	Premise
2. $a + a = e$	Premise
3. $c = e + d$	Premise
4.1. Suppose that $a + b \neq c$	Supposition (*reductio*)
4.2. $a + b \neq e + d$	(4.1), (3)
4.3. $a + b \neq (a + a) + d$	(4.2), (2)
4.4. $a + b \neq a + (a + d)$	(4.3), commutativity
4.5. $a + b \neq a + b$	(4.4), (1)
5. $a + b = c$	(4.1)-(4.5)

Exercise "Reductio - 1"

Reconstruct Parmenides' proof that being does not have an end as a *reductio* proof.

1. Being is (Axiom A_1)

2. Nonbeing is not (Axiom A_2)

| 3.1. ____________________ Supposition (*reductio*)

4. Being does not have an end

Exercise "Reductio - 2"

Here is a fragment of Aquinas's proof that nothing can cause itself. Your task is to reconstruct the proof in the *reductio* form. (The conclusion of this proof is used by Aquinas' in his second way of proving the existence of God.)

Aquinas argues that nothing can cause itself on the ground that were something to cause itself, it would have to be prior to itself, but since nothing can be prior to itself, so also nothing can cause itself.

1. Causes are prior to effects. (Premise)

2. Nothing can be prior to itself. (Premise)

| 2.1. * ____________________ Supposition (*reductio*)

3. Nothing can cause itself

* Hint: The *reductio* supposition must include the negation of the conclusion you want to prove by means of the *reductio*. The conclusion in this case has the form "Nothing/Nobody is P" (where P is a property of some sort, logicians say that it is a "predicate"). The negation of such a sentence has the following structure: "Something/Somebody is P." Consider this on two examples. Imagine Jane and Tom.

Jane: Nobody came to my party!
Tom: You are wrong, Jane! . . . . .

How would you fill in the ellipses for Tom? He would probably say something like: "You are wrong, Jane. Somebody did come to your party – I did!" or "You are wrong, Jane. There were some people who did come and it is indecent of you not to acknowledge that fact." Or consider the following conversation:

Jane: You do nothing to help me!
Tom: You are wrong, Jane! . . . . .

What will Tom say now? Well, something like "I do too do something – I stack up the dishwasher every night!" etc. You now have to think about the following scenario:

Jane: Nothing can cause itself!
Tom: You are wrong, Jane! . . . . .

Place what Tom would say as the *reductio* supposition.

6. Implicit Premises

Some arguments contain premises that are not explicitly mentioned. Consider this argument:

Premise 1: John said that Taj Mahal is pretty.

Premise 2: ____

Conclusion: Taj Mahal is pretty.

Can you fill in what is missing?

Well, the conclusion will follow here if we also assume a premise to the effect that whatever John says is true, or perhaps whatever John says about his travels is true.

How about this one:

Some Christians have held high offices in Rome under Emperor Trajan, so they must have been Roman citizens.

What is the conclusion and the premise?

Premise 1: Some Christians have held high offices in Rome under Emperor Trajan

Premise 2: ____

Conclusion: Some Christians must have been Roman citizens during the reign of Emperor Trajan.

Can you tell what the missing premise is? Check at the end of the unit to check your answer.

7. Ways of Arguing Against Someone

Finally, let me list some ways that one might be arguing against someone.

1. The same type of reasoning leads to false conclusions in other cases — it is invalid.

Suppose someone gives the following argument:

Some women are young.

Britney Spears is a woman.

So, Britney Spears is young.

This argument is invalid, though all its premises are true and the conclusion is true as well. You can see that the argument is invalid because it has an invalid argument form. Another argument with the same form will lead from true premises to a false conclusion:

Some women are young.	[true]
Margaret Thatcher is a woman.	[true]
So: Margaret Thatcher is young.	[false]

2. One of the premises is false.

Consider the following reasoning:

Human actions are EITHER causally determined OR mere random occurrences.

IF human actions are causally determined, THEN they do not arise from our exercise of free will.

But IF human actions are mere random events, THEN once again we do not exercise free will.

So, there is no free will.

This argument is valid – the conclusion follows from the premises. One way to argue against it is to claim that one of the premises is false. Why should we believe the first premise? Is there not a third possibility, viz. that human actions are caused by us exercising our free will? If so, the conclusion certain will not be true!

2b. Show that the argument has missing premises and argue that the missing premises are false.

Consider someone making the following argument: "Capital punishment is wrong since it is a killing." What is the premise and conclusion here?

Premise: Capital punishment is a killing.

Conclusion: Capital punishment is wrong.

Thus stated, it becomes evident that the conclusion does not follow from the premise unless we uncover a hidden premise, viz. that all killing is wrong. But that premise, one might then argue, is debatable. One might argue that we do not think that killing in self-defense is wrong, for instance, or that killing in war is wrong, etc.

3. One of the premises presupposes the truth of the conclusion — the argument is question-begging.

Consider the following argument:

> Obviously there is a God. The Bible says so, and we may accept what the Bible says as true because, after all, the Bible is the word of God.

What are the premises and the conclusion? The argument has a two-tiered structure. It first reaches a subconclusion that we may accept what the Bible says as true, to then reach the final conclusion:

> Premise 1: The Bible is the word of God.
> Subconclusion: We may accept what the Bible says as true.
> Premise 2: The Bible says that God exists.
> Conclusion: God exists

As things stand, however, it is clear that there are some missing premises. For one, we would have to accept the premise that God does not lie if the Subconclusion were to follow from Premise 1.

This still does not capture why the argument is problematic. It is problematic because it attempts to establish a conclusion (that God exists) that is already presupposed by the premises. This is what makes it question-begging. To see this, ask yourself whether an atheist (someone who does not believe that God exists, and who theoretically ought to be the target of the argument) could accept Premise 1. It seems clear that he could not. Only someone who already believes that God exists will accept Premise 1.

There is a sense then in which the argument is circular.

Note, however, that this is a problem with the reasoning. It might still turn out, after all, that all of the premises (and the conclusion as well) are true.

Consider another example:

Consumer Reports is a reliable consumer magazine. It has recently published an article evaluating the reliability of consumer magazines where it was ranked very highly.

8. Why It Is Good to Write Precisely…

I saw a thief with my binoculars. So he must have stolen my binoculars

This girl's school is little.
Therefore, it's a little girl's school.
Therefore, it's a school for little girls.

These two women came to the party in the same dress. It must have been quite big and still they must have really squeezed to get into it.

Answer to Question asked in §6

Premise 1: Some Christians have held high offices in Rome under Emperor Trajan

Premise 2: Only Roman citizens could hold high offices during the reign of Emperor Trajan.

Conclusion: Some Christians must have been Roman citizens during the reign of Emperor Trajan.