LANGARA COLLEGE

Philosophy 1101 – Introduction to Philosophy

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Logic, Rationality and Truth

1. Beliefs and Arguments

In this week's reading from the textbook, we read W. K. Clifford's view that beliefs must be supported by evidence.

> But if the belief has been accepted on insufficient evidence, the pleasure is a stolen one. Not only does it deceive us by giving us a sense of power which we do not really possess, but it is sinful, because it is stolen in defiance of our duty to mankind. The duty is to guard ourselves from such beliefs as from a pestilence …

In the language used by logicians, we say that *conclusions must be supported by premises*. ('Premises' are beliefs that we hold already, and so are taken for granted in the argument.) Philosophers (in the analytic tradition), like W. K. Clifford, place a very high value on logical arguments as a means to discover truth.

An argument that whose premises absolutely guarantee the conclusion is said to be deductively *valid*. If an argument is valid, then any rational person who believes all the premises will believe the conclusion as well. Is the argument below valid?

Premises:

1. If God were perfectly good he would want to eliminate all evil.
2. If God were all-powerful he would do whatever he wanted.
3. Evil things happen.

Conclusion. God isn't both perfectly good and all-powerful.

Yes, I think it is. I don't see how anyone could, logically, accept the premises yet reject the conclusion. Note that you can still disagree with the conclusion, without any logical mistake. In that case, however, you'll have to reject at least one of the premises. This is because a valid argument with premises that are all true has a true conclusion as well.

Plenty of valid arguments have false premises. Can you think of one?

Note that an argument may be either *for* or *against* a given claim or thesis. An 'argument' isn't the same thing as an objection or criticism.

What about this argument? Is it valid?

Premises.
    1. Almost all philosophy professors are men.
    2. The vast majority of men drink beer

    Conclusion. Most philosophy professors drink beer.

Does that seem valid to you? If it does, then consider this similar argument: *All penguins are birds. The vast majority of birds can fly. Hence most penguins can fly*. A penguin is an unusual kind of bird, in that it doesn't fly. Similarly, a male philosopher (for all we know, given only those two premises) might be an unusual kind of man.

Here's another invalid argument that looks valid to some.

Premises
1. Alex tested positive for HIV
2. The chance of a healthy person testing positive for HIV is only 0.001

Conclusion. Alex very probably has HIV.

(If Alex is in a low risk group for HIV, the initial probability of infection, before he gets the test results, might be (say) 1 in 100,000. In that case, the positive result is almost certainly a false positive – the argument above is an example of the "base rate fallacy". Note that "the chance of healthy person testing positive for HIV" is very different from "the chance of a person testing positive for HIV being healthy". Probability is tricky.)

This question about Alex's HIV status is obviously important. Another (rather simplified) case of an important argument is below.

Premises.
1. The Baathist regime in Iraq has used chemical weapons in the past.
2. The regime has consistently blocked all UN attempts to inspect its present weapons.
3. The country is suffering from severe and crippling economic sanctions as a result of its refusal to allow UN inspectors access to its weapons.

Reasoning: If the regime didn't have any illegal weapons, then it would be in their interest to prove it to the world. That way the international sanctions that are destroying their economy would be lifted. Only if they had the weapons would they be acting as they are.

Conclusion. The Baathist regime clearly possesses weapons of mass destruction, such as chemical and biological weapons.

After the invasion of Iraq in 2003, it became clear that Iraq had no such illegal weapons at the time. Thus the conclusion was false. This doesn't show, of course, that the reasoning was completely flawed, since it might at least have shown a belief in the existence of WMDs to be reasonable at the time, on the available evidence. Even this view is in considerable doubt, however, for a number of reasons. One is that people don't always do what is in their best interests – sometimes they're just stubborn. Second, Saddam might have thought that fear of Iraqi WMDs would discourage western countries from invading, so he blocked inspections to create the illusion that he had WMDs. Third, to capitulate to UN (infidel) demands for inspections would have been a source of *shame* for Iraq among its Arab neighbours, etc.

In general, beware of reasoning that says "the *only* possible explanation for E is H". This reasoning is basically never valid, in the real world. (In science, however, many good arguments have the form "H is the best explanation of E we can think of".)

Philosophers aren't too interested in each other's opinions as such, but only in the *arguments* that are given in support of those views. Philosophers are passionate about arguments, and try very hard to determine whether or not a given argument is valid. For this reason, most of the work you do in this course will be focused on *arguments* in one way or another. In your quizzes and essays you will be presenting other people's arguments (as clearly and accurately as possible), critiquing those arguments (giving arguments against the arguments) and constructing arguments of your own.

2. Probability

Support of a person's beliefs by the evidence is a matter of degree. For example, the belief that the earth is a sphere was supported long ago by the evidence that ships sink below the horizon as they sail into the distance. But the belief is more strongly supported by the additional evidence available today, from looking out of the window of a spaceship. The degree to which a belief is supported by evidence is measured by its (evidential or epistemic) *probability*. To say that a certain theory is probable is to say that we have good reason to believe it.

Definitions   A *strong* argument is one that renders its conclusion probable. The premises are themselves probable, and the conclusion is probable given the premises.

                      A *weak* argument is one that fails to make the conclusion probable. Either the premises are improbable, or the premises have little relevance to the conclusion (or both).

3. Truth and Objectivity

Philosophers, like scientists and crime detectives, are attempting to find the truth. But what is the truth? It's a tricky question, so let's start with some platitudes:

1. Not every belief is true – some beliefs are false.

2. It's good to have true beliefs. Beliefs are supposed to be true. That's the whole point of them.

3. Beliefs that contradict each other cannot both be true.

4. The truth doesn't change, unless the world itself changes. (We don't say, for example, that in the Middle Ages the earth was stationary, and at the centre of the universe. People merely *believed* that. In fact the earth was orbiting the sun all along.)

5. The truth doesn't depend on what people think. Even if everyone agrees on something, it could still be false. (See previous example.)

6. Truths are discovered, not invented. We adjust our thinking to make it fit the truth, and cannot adjust the truth to fit our thoughts.

7. The logical consequences of a true claim are themselves true, so that good reasoning adds to one's true beliefs.

8. Some beliefs are quite reasonably held, i.e. probable, yet are false. Can you think of one?

9. Some beliefs are unreasonable, or improbable, held without adequate evidence, and yet are true (just by luck). (Can you think of a belief like that?)

10. Beliefs that are reasonable or probable are more likely to be true than unreasonable beliefs are.

11. The probability of a belief, relative to a given body of evidence, is (to some extent) a matter of objective fact. There are correct and incorrect degrees of belief.

These are generally accepted by analytic philosophers. They express the idea of *objectivity* in truth and knowledge. The truth is thought to exist "out there", in some sense, as something like the divine viewpoint or "God's eye view" (though most philosophers today don't believe in God). Moreover, certain methods used to find the truth, such as observation and reasoning, are held to be objectively correct, yielding justified beliefs.

Not all philosophers take this objectivist view of truth and knowledge, however. Some, such as Richard Rorty (in "Solidarity or Objectivity" *Nanzen Review of American Studies*, 1984) reject the notion of a rationality that is:

> "not merely social but natural, springing from human nature itself, and made possible by a link between that part of nature and the rest of nature"

For such writers, the methods of inquiry used by scientists, philosophers and others are products of culture, and hence vary with time and place. They then argue that the notion of truth being "out there", existing independently of us, is out of place. If there is a plurality of methods, all equally valid, leading us in different directions, then the notion of there being a single, objective, true account of nature makes no sense.

In thinking about truth, a useful example is the Ptolemaic world maps of the late Middle Ages, drawn in the 15th and 16th centuries. See the following map, for example.
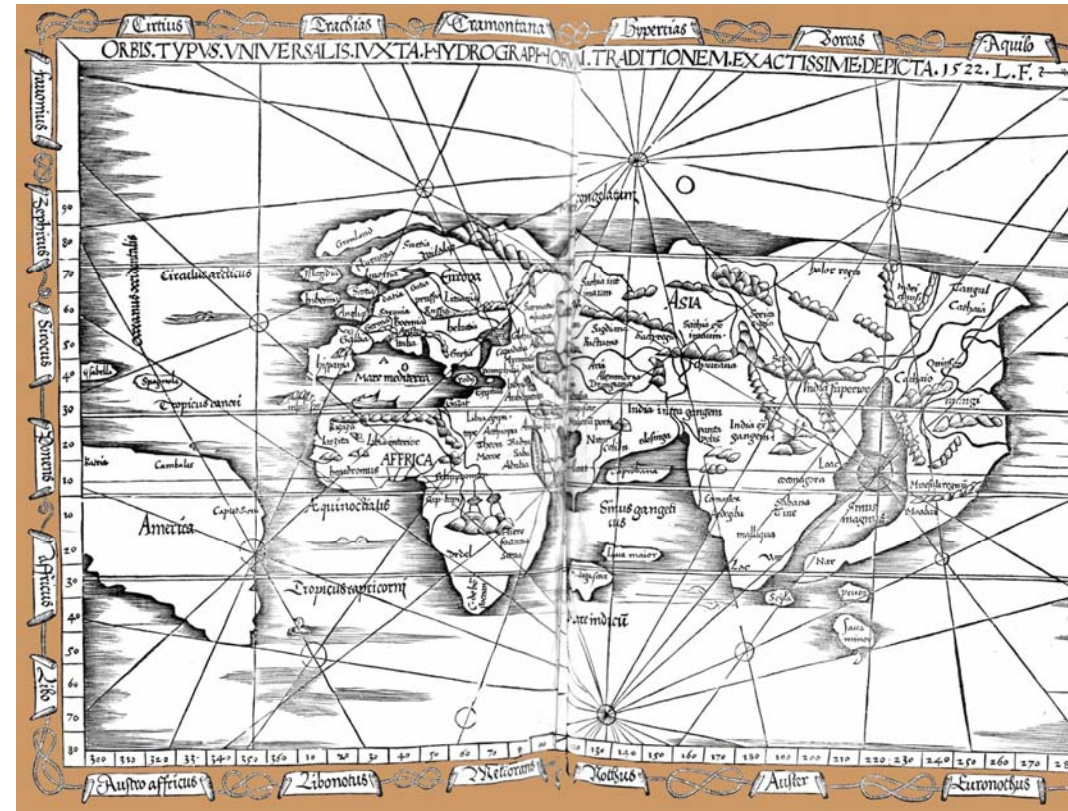
It shows the earth, or most of it, in a way that *no one had actually seen at the time*, since space flight was then impossible. You will no doubt recognise many familiar features, while finding other parts quite strange. Notice, for example, that England and Scotland are separate islands here! Is this map objectively true? Or is it false? (Or something in between?)

In such maps one can see biases of individual cartographers. An Italian cartographer, for example, might represent Italy very accurately, while drawing the British Isles as shapeless blobs. The map might be centred on the maker's own country, and depict that country as larger than its true relative size. The human element is all too obvious. To claim that the cartographer is purely objective,

that the maps are the product of careful observations and mathematical calculations *only*, would be ridiculous.

On the other hand, it is surely not the case that "anything goes" when it comes to mapmaking. Some maps were more solidly grounded in observational evidence than others. The maker of this map, for example, had obviously never travelled between England and Scotland by land. (Most other maps of the period show England and Scotland as a single island.) Thus, while human bias is certainly always present, it is not always influential to the same degree. Some maps were more probable than others, even from the evidence available at the time.

Secondly, in the case of map making there does exist a single true map – the view from outer space. Moreover, while this truth was not directly available in 1580, or even in 1930, the best maps were similar to the truth, so that the truth was nevertheless accessible *in some indirect sense*. The truth was not directly knowable with precision and certainty, but it was knowable indirectly, approximately and fallibly.

According to scientific realists, our present scientific knowledge is rather like a late medieval map. Most of it is at least roughly right, some bits are wrong, and there are big gaps. The human element is always a factor, but in many cases only a small one. (In "scientific" drug trials, or social "science", on the other hand, it can be a big factor.)

The big difference between maps and the rest of our knowledge is that for the latter there is will never be anything like a photograph from space to settle the issue once and for all. For example, we will never have video footage of our own biological evolution – unless God or some extra-terrestrial civilization was kind enough to film it for us! Neither will we ever just see the structure of an atom, to verify the model provided by quantum theory. Even if some fantastic machine provided images of atoms on its screen, such a machine would be so complex that the resulting image

would be an artefact of the machine to a great extent. We will therefore always depend on indirect methods, i.e. we will need careful rational argument based on evidence.

4. Propositions

When a person believes something, such as that the earth is round like an orange, then the thing that they believe is called a *proposition*. Note that a proposition can be expressed as a declarative sentence, such as "The earth is round". One should not think that a proposition *is* a declarative sentence, however, since the same proposition can be expressed by two or more distinct sentences. For example, the following sentences

> No poor Canadian people read the *Economist*
> No Canadian readers of the *Economist* are poor
> No poor people who read the *Economist* are Canadian

all express the same proposition. Also consider that this same thought can be expressed in any of the world's languages. You will also have noticed that a single sentence may express more than one proposition, depending on how it is read. Some well known examples of this are:

> Police Can't Stop Gambling
> Prostitutes Appeal to Pope

Propositions are often either true or false, though not always. Propositions of fiction, such as "King Lear had three daughters" don't have truth values. Similar cases are found with propositions that are part of some radically erroneous theory. Consider these claims:

> Mars's epicycle is the largest of all the planets.

> Phlogiston has negative weight.

Every living thing is a combination of the elements *fire* and *water*

They clearly express thoughts, at least *within certain conceptions of the world*. None of them make any sense *to us*, of course, unless we imaginatively place ourselves within the intellectual milieu of a past era. From our point of view, they do not express possible states of affairs, for they are not false as such but rather are based on false presuppositions. (We no longer believe in epicycles, or phlogiston, or the ancient theory of five elements.)

5. Objects ("substances") and Properties ("qualities", "features", etc.)

The simplest propositions simply ascribe some property to a single object. For example, the proposition that Fred is a dentist ascribes the *property* of being a dentist to the *object* Fred. Properties, it is generally thought, can be possessed by two or more distinct objects. For example, two objects can (in principle) have exactly the same colour, the same size, the same shape, etc. (It is doubtful however whether two separate objects can have *all* the same properties, for then they'd have to be in the same spatial location as well!)

Objects, which are often called "substances" in philosophy, are single individual things rather than kinds or categories. Thus *John Locke* is an object or substance, but *modern philosopher* is a property.

6. Logical Relations

The main relations between propositions, known as logical relations, are consistency and entailment (or logical consequence). These will no doubt be familiar to you, even though their

philosophical definition is a matter of dispute. In this section I'll give the definitions that I think are correct.

A proposition P is said to *entail* Q (or Q is a *logical consequence* of P) just in case it is correct to infer Q from P. That is, a rational person who believes P with certainty should also believe Q with certainty. Such an inference from P to Q is said to be *logically valid*, and Q is said to *follow from* P. One can also say that P is *conclusive evidence* for Q.

Examples

	A	B	Conclusive evidence?	Some evidence?
(i)	Fred just hit a hole-in-one	Fred is a very good golfer		
(ii)	I have between 4 and 6 eggs	I have at least 3 eggs		
(iii)	Simpson is a world-class skier	Simpson is a non-smoker		
(iv)	We're having fish for supper	We're having trout for supper		
(v)	Qin's theory is rejected by all relevant scientific authorities	Qin's theory is false		
(vi)	Ali went bowling in Vernon, B.C. in 1998.	Ali was in Canada before 2002.		

If P entails Q and Q entails P, then P and Q are *logically equivalent*. Logically equivalent propositions are sometimes regarded as being the *same* proposition. In any case, they always have the same truth value, if any (i.e. both are true, both are false, or neither is either true or false).

Proposition P is said to be *logically consistent* with Q when they do not disagree with each other. There is no logical reason to prevent both being true. Which of the above pairs of sentences are consistent?

7. Fallacies

A fallacy is an error of reasoning. There is no complete list of fallacies, as there are infinitely many ways to reason badly. Some fallacies are particularly common, however, so let's look at these ones.

Improper Appeal to Authority

In trying to persuade others, we often appeal to authority. For example, a student may argue thus: "The answer *is* 23.1 – the professor said so". Here, the student does not argue directly for the truth of the conclusion, but rather trusts the (hopefully sound) judgment of the professor. Such appeals to authority are quite acceptable in many contexts, namely when:

(i) The purported authority can be trusted on this particular matter. (Infallibility is not required.)

(ii) We have no way, or no easy way, to check the matter ourselves.

If these requirements are not met, then the appeal to authority is fallacious. *Appeals to authority are generally not acceptable in philosophy papers*.

Ad Hominem

An *ad hominem* ("to the person") fallacy is committed when a claim or argument is rejected on the basis of an irrelevant property of the person presenting the claim or argument.

Rejection of authority need not be an ad hominem fallacy – in this case the person is relevant.

> I wouldn't buy that truck you're thinking about. Brandy McElroy reviewed that model in *Truck Weekly* and said that it's aimed at posers who just want to drive in the city. It looks aggressive, but underneath they've cut a lot of corners and it won't stand up to heavy work.
>
> -- Ok, whatever. You're going to ask a woman which truck to buy? She probably just thought the vanity mirror was too small.

Is this an *ad hominem* fallacy?

Genetic Fallacy

As stated above, in discussing a philosopher's work we are interested in two things:

(i) What was their view?
(ii) What arguments did they give to support this view?

As philosophers we are not interested in the philosopher's psychological motivations. We leave that question to historians. In particular, it is a fallacy to argue that a philosopher's view is incorrect, or that their arguments are flimsy, based on an assessment of their motivations. This is called the *genetic fallacy*. E.g.

> Descartes claimed that the mind was a completely separate entity from the brain. We need not consider his arguments for this, which were most likely just an attempt to rationalise the religious nonsense he learned in school.

Straw Person

In discussion, one person may misrepresent (accidentally or otherwise) their opponent's position. They may construct a position that is similar to the opponent's and attribute it to the opponent. This doctored version of the opponent's position is known as a "straw person". The idea is that it's not the real person, but merely a dummy or effigy (made of straw).

In a straw person (or "straw man") fallacy, one attacks the "straw man" rather than the opponent's real view. In most cases, the straw man is rather less plausible than the real view, and so easier to criticise. The exercise has little point, however, as the opponent's real view is left untouched.

E.g.

Fred: We should clean out this closet.
Betty: But we did it just last April. Do we have to do it every day?
Fred: Well we can't let our junk pile up forever!

Begging the Question (circular argument)

This fallacy is committed when the speaker appeals to premises that are too similar to the conclusion. In this case, if the audience has any doubt about the conclusion, then they will be equally doubtful of the premises, so that argument is worthless.

It's unlikely that such a circular argument will go unnoticed by the audience, but it's still a pointless exercise, a waste of time.

E.g.
> Spanking a toddler is immoral, because it's always wrong to hit children.

> I know God exists because it says so in the Bible. Everything in the Bible is true, because God wrote the Bible and God does not lie.

Fallacious Appeal to Ignorance

An appeal to ignorance argues that something is true, because we have no proof that it is false. (Or that it is false, since we have no proof that it is true.)

> No Canadian studies have shown that St. John's Wort is effective against mild depression. Therefore, the herb has no value in treating this disease.

> Some scientists don't believe that the earth is getting warmer, so we can't be sure that global warming is real. Therefore, global warming is a myth.

Verbal bullying

Some phrases are used to bully the listener into accepting what you are saying. Suppose, for example, you begin your claim with the words "Clearly, …", or "Obviously, …", or "It's just common sense that …". If the listener were to disagree, then they would be failing to see something that is clear, obvious, or a matter of common sense. Thus, they feel pressure to accept the claim. In a good discussion, one should feel pressure only from facts and arguments, so that such words are to be avoided. Allow the listener some space to disagree with you.

Other bullying phrases are:

No one believes that any more!

Only an idiot would think …

Exercises. What do you think of these arguments?

(i) No scientific experiment has shown that the brain is affected by a non-physical substance, so this refutes the idea of a soul controlling the body.

(ii) **Fred**: On the free will issue I'm a libertarian. Some of our actions are truly up to us, not determined by our genetics and upbringing. There are many cases where I really could have done something other than what I did in fact.

Betty: You're kidding me! Are you really some kind of relic from the 17th century? The fact is that you just won't find a neuroscientist today who takes free will seriously.

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Mike: Fred can be a libertarian if he wants to be. If he wants to believe he has magical powers that enable him to defy the laws of physics, that's his own business.

(iii) A purely material brain cannot be conscious, because a purely physical thing is just mechanical, and cannot be truly aware of what it's doing.

(iv) Paul Churchland makes the ridiculous claim that human beliefs and desires don't really exist. What is it about San Diego that makes philosophers there spout this kind of nonsense?

(v)

Alice: Materialism is logically incoherent. The idea that a human belief is just a certain configuration of particles in the brain can be shown to refute itself.

Dave: That's a bit rich, coming from you. Since when did religious people start worrying about logical coherence? Is the idea of the Trinity coherent?

(vi)

Betty: Physicist Stephen Hawking has argued, on the basis of his "no-boundary condition" hypothesis, that the universe doesn't need a creator.

Fred: Yes, but we all know that Hawking is a staunch atheist. He's just *desperate* to find some model of the universe that seems to make God redundant.

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