

UNIT II: Arguments

Section 1: Recognizing Arguments and Finding their Conclusions

We have now done just about everything that can be done with propositions taken by themselves. Now we must put propositions together to make arguments. However, certain types of propositions are sometimes mistaken for arguments. This is because the utterance has the structure of an argument, i.e. a connection of some sort is being made; but the utterance is being used only to assert the connection. The utterance does not actually *use* the connection to justify drawing an inference.

Recognizing Genuine Arguments

The best way to tell the difference between an argument and a proposition is this: in an argument *something is in doubt*, and the argument is attempting to lay that doubt to rest. In a proposition we are simply-told that something is true. Nothing is held to be in doubt. To decide whether a passage is an argument, find the putative conclusion. If the putative conclusion seems to be something that might reasonably be considered doubtful in the given context, then the passage is probably an argument. If the putative conclusion is something that could not be reasonably considered doubtful in the given context, then the passage is probably a proposition of some kind or other.

When a proposition does not have the structure of an argument, but merely states a simple fact, it may be called a description.

A **description** is a statement or group of statements that are all intended to be taken as statements of fact. No one of them is held to be in doubt.

Example:

‘It was a dark and gloomy night. The moon hung in the sky like a cold, gloppy pepperoni pizza that had been thrown against a wall’.

On the other hand, here are some types of propositions that can sometimes be mistaken for arguments:

A **hypothetical** statement asserts the existence of a connection between two propositions, but does not use the connection to draw an inference. The two propositions are neither held to be true nor held to be in doubt.

Example:

‘If the moon were made of pepperoni pizza, then it would be edible’.

An **explanation**, like a hypothetical statement, asserts the existence of a connection between two propositions, but does not use the connection to draw an inference. Unlike a hypothetical statement, one of the two propositions is assumed to be true, and the other is offered as the reason *why* the first is true.

Example:

‘The tides rise and fall because of the gravitational force of the moon’.

An **example** is a statement in which a concrete instance is offered for the purpose of clarifying what some other relatively abstract statement means. Neither statement is held to be in doubt. The concrete statement is not offered as evidence that the abstract statement is true; it is offered only as an illustration, to show how the abstract statement is meant to be applied. [Note: There are some arguments in which instances are used as evidence. Here, as elsewhere, you must distinguish between mere examples and genuine arguments by considering whether anything is held ‘to be in doubt. In an example, nothing is in doubt.]

Example:

‘According to Aristotle, every species is contained in a higher genus. For example, Aristotle would say that the species ‘human’ is contained in the genus ‘animal’.

An **image**, like an example, is a statement offered for the purpose of clarifying the meaning of another statement, where neither statement is held to be in doubt. An image is a statement that offers an analogy for the purpose of clarifying meaning. [Note: Again, there are some genuine arguments that employ analogy as a form of evidence. Mere images may be distinguished from such arguments by considering whether anything is held to be in doubt.]

Example:

‘The truth will always emerge, no matter how it is suppressed. Like a beach ball pushed under the water, the truth will always find a way to spring to the surface’.

Exercises:

For each of the following, tell whether it is a term, a proposition, or an argument. If it is a proposition, tell whether it is a description, a hypothetical statement, an explanation, an example, or an image.

1. Thinking is nothing more than calculating, and computers can calculate. Hence computers can think.
2. Computers are highly sophisticated machines that are capable, given the appropriate programming, of mimicking human reasoning. They even seem to be able to think.

3. Computers are not actually able to think in the same sense that human beings think, since computers are incapable of feeling human emotions.
4. Machines that are capable, given the appropriate programming, of mimicking human reasoning, but that are not actually able to think.
5. Computers are sometimes able to give the appearance of thinking because they are highly sophisticated calculating devices.
6. Computers are unable to do anything except obey commands. If you type a 'goto' statement into a program the computer will execute that command every time it comes across it.
7. If computers were capable of actually feeling human emotions, as well as being able to perform sophisticated, high speed calculations, then computers would actually be able to think.
8. It is no more possible for a computer to think than it is possible for a goat to grow feathers.
9. An activity that human beings are capable of performing, but that computers are unable to perform because they lack human emotions.
10. Computers are capable of mimicking human reasoning to some extent, but they are devoid of creativity. A computer can never do more than its programmer tells it to.
11. Computers seem capable of mimicking human compassion and understanding. There is one program that even asks questions just like a human psychiatrist.
12. If computers were actually able to think, in exactly the same sense that human beings think, then it is impossible to avoid the conclusion that computers should be given the right to vote.
13. If computers had the right to vote, then civilization as we know it would be doomed. But computers will never have the right to vote, so there is no reason to worry.
14. Computers don't have the right to vote, since no one has so far been able to prove that computers are actually capable of thinking.
15. Computer intelligence is to human intelligence as Nutra-Sweet is to sugar: it just isn't the real thing.

Premises and Conclusions

Just as every proposition has a subject and a predicate, every argument is composed of two parts: the conclusion and the premisses. The single most important part of any argument is

the conclusion. As we shall see, everything about the structure of arguments is defined relative to the conclusion. Hence, the first step in analyzing the structure of any argument is to find the conclusion.

In a proposition, the subject and predicate always come in a definite order: subject first, predicate second. Concerning arguments there is some good news and some bad news. The bad news is that arguments do not conform to any such simple and convenient rule. The conclusion of an argument can occur anywhere. It may be at the beginning, at the end, or even smack in the middle of the passage. The good news is that there are usually fairly obvious signals to indicate which proposition is the conclusion. Words that signal the location of the conclusion are called **flag words**. Get in the habit of looking for flag words and other signals. Later in the book we will tend to put arguments into a standard form in which the conclusion goes at the end. One of the most common, and most serious, mistakes that students make is to forget that real life arguments do not always (or even usually) follow standard form. In real arguments there are signals that indicate where to find the conclusion, but *location is not one of those signals*.

Premiss Flags and Conclusion Flags

Certain words are useful for locating the premisses and conclusion of an argument. Words that tend to come just before a premiss may be called **premiss flags**. Words that come just before a conclusion may be called **conclusion flags**.

WORDS THAT FREQUENTLY
ACT AS PREMISS FLAGS

since
because
for
(as)

WORDS THAT FREQUENTLY
ACT AS CONCLUSION FLAGS

therefore consequently
hence it follows that
so we may infer that
thus we may conclude that

These lists are not necessarily complete. Words and phrases other than these may be used to flag premisses and conclusions. Moreover, these words are not always used as flag words. You may use these words as guides for finding premisses and conclusions, but they cannot be regarded as infallible indications. The word ‘as’ is in parentheses to indicate that it is somewhat archaic. Modern writers tend not to use it, but it does crop up from time to time in older writings.

Examples:

<p style="text-align: right;">conclusion</p> <p>[Knowing how to reason is important.] since good reasoning makes one a better writer.</p> <p style="text-align: right;">premiss flag</p>
<p style="text-align: right;">conclusion flag</p> <p>The Democrats have promised to raise taxes. Consequently you would be a fool to vote Democratic.]</p> <p style="text-align: right;">conclusion</p>
<p style="text-align: right;">conclusion flag</p> <p>So far as we know, there is no life on Mars. So it is unlikely that there is life anywhere other than earth.]</p> <p style="text-align: right;">conclusion</p>

In the final example, notice that the word 'so' and the word 'as' occur in the first sentence. But they do not occur as flag words. Do you see the difference?

As a general rule, whatever comes after a premiss flag is a premiss, and whatever comes after a conclusion flag is a conclusion. However, there is at least one important exception to this general rule. Sometimes a premiss (with its flag word) will come between the conclusion flag and the conclusion.

Example:

We shouldn't worry about things we can do nothing about. Hence, since we can do nothing about inflation, there is no point worrying about it.

Handwritten annotations:
- "Hence" is circled and labeled "conclusion flag".
- "since" is circled and labeled "premiss flag".
- "there is no point worrying about it." is bracketed and labeled "conclusion".

Exercises:

In each of the following arguments, circle and label premiss flags and conclusion flags. Identify and label the conclusion.

1. A strong military posture is vital to our national security, since military preparedness is essential to our ability to respond to outside threats.
2. The only people who believe in a strong military are rednecks with an I.Q. under 80. It follows that we should not listen to the arguments of anyone who believes in a strong military.
3. Even in an age of decreasing tensions between the superpowers, it is important that we remain prepared to defend democracy from those who would take it away from us. Consequently, we must be careful not to cut back too drastically on military spending.
4. The logic now in use serves rather to fix and give stability to the errors which have their foundation in commonly received notions, than to help the search after truth. So it does more harm than good.
—Francis Bacon, *Novum Organum*
5. The sort of appeal that Emersonian optimism, on the one hand, and Buddhistic pessimism, on the other hand, make to the individual and the sort of response which he makes to them in his life are in fact indistinguishable from, and in many respects identical with, the best Christian appeal and response. We must, therefore, from the experiential point of view, call these godless or quasi-godless creeds 'religions'.

—William James, *The Varieties of Religious Experience*

Premiss Connectives

Certain words, which may be called premiss connectives, tend to appear between two premisses. They indicate that two propositions are working together as joint premisses leading to a single conclusion. Some premiss connectives merely imply a connection with, or continuation of, the thought in the previous premiss. However, others imply a contrast. They suggest that there is something surprising about the fact that the two premisses are true concurrently. The

suggestion of either continuity or contrast may be extremely important for rhetorical purposes. That is, it may be important to the smoothness and clarity of the passage. But neither suggestion is important to the logical structure of the argument. For our purposes, premiss connectives do nothing more than indicate the presence of premisses.

PREMISS CONNECTIVES
THAT IMPLY CONTINUITY

and
moreover
furthermore
besides
in addition
indeed

PREMISS CONNECTIVES
THAT IMPLY CONTRAST

but
yet
however
nevertheless
even so
on the other hand

Again, these lists are not necessarily complete, nor are the words on these lists always used as premiss connectives. Use your own judgment!

Examples:

<p>Good reasoning skills will improve your ability to write well. <u>Moreover</u> good writing is important in many jobs. <u>Hence</u> it is important to acquire good reasoning skills.</p> <p><i>premiss connective</i> (above Moreover) <i>conclusion</i> (under the first sentence) <i>conclusion flag</i> (under Hence)</p>
<p><u>You should not vote Republican this year.</u> The Republicans have promised not to raise taxes, <u>but</u> we desperately need a tax increase to balance the budget and pay for necessary government services.</p> <p><i>conclusion</i> (above the first sentence) <i>premiss connective</i> (under but)</p>

Exercises:

In each of the following arguments, circle and label premiss flags, conclusion flags and premiss connectives. Identify and label the conclusion.

1. A few people who understand philosophical concepts are driven insane by the effort. However, many people are unable to understand philosophical concepts at all. So few people are driven insane by the effort.
2. There is no reason to have special programs for the gifted and talented. They already have the advantage of being smarter than everyone else, and there is no reason to give them an even bigger advantage.
3. It is wrong to inflict unnecessary suffering on human beings. Yet animals are just like human beings in every morally relevant respect. Hence it is wrong to inflict unnecessary suffering on animals.

4. Animals lack the capacity for rational judgment. Moreover, God put animals on earth for man’s use. Therefore there is nothing morally wrong with using animals in scientific experiments.

5. The necessity of justice to the support of society is the sole foundation of that virtue; and since no moral excellence is more highly esteemed, we may conclude that this circumstance of usefulness has, in general, the strongest energy and most entire command over our sentiments. —David Hume, *An Inquiry Concerning the Principles of Morals*

Throwaway Words

Certain words and phrases add emphasis to a claim, but play no role in the actual argument. Such words and phrases may not even be helpful in identifying premisses and conclusions. Such words may be called **throwaway words**. Throwaway words generally assert that the proposition in which they appear is warranted. To justify this, they typically appeal to the reader’s own opinions or instincts, or the opinions and instincts of the general public. Other phrases that may be thrown away for our purposes are more explicit forms of citation language, for example, intertextual citations such as ‘(Smith 67)’ or phrases used to refer to conclusions drawn earlier in a discussion, such as ‘as we have seen’ and ‘as stated in the previous chapter’.

Throwaway words and phrases seem to fall into two broad categories, which I call the “assertive” list and the “passive-aggressive” list. Assertive throwaway words express a bold confidence in the truth of the proposition in which they occur; passive-aggressive words express a modest *lack* of confidence, but still insist that the proposition in which they occur be accepted.

ASSERTIVE THROW-AWAY WORDS

obviously	of course	as everyone is aware
naturally	after all	it is obvious that
clearly	as you know	it is clear that
	etc.	

PASSIVE-AGGRESSIVE THROW-AWAY WORDS

presumably	hopefully	as far as we can tell
by hypothesis	we may assume that	as far as we know
	etc.	

Like flag words, throwaway words may add significantly to the clarity and readability of a passage. Citation language is important in academic papers, and by calling it “throwaway” I do not mean to suggest that students shouldn’t use it. Such words have an important rhetorical function, even if they have no logical function. I am only pointing out that such words do not enter formally into the structure of arguments. By all means, use them as needed in your writing! But as logicians we may safely disregard them in our analysis.

Example:

By and large, the voters that we talked to were planning to vote Republican in the next election. ~~Of course,~~ almost all of the voters that we talked to were from small, working-class towns. ~~So it is clear that~~ many voters from small, working-class towns are planning to vote Republican in the next election.

conclusion flag *conclusion*

Notice that the phrase 'by and large' is not crossed out. It is not throwaway language but a phrase intended to qualify and limit the claim. Taking it out would change the meaning of the sentence in significant ways, so it must be left in.

Sometimes entire sentences (perhaps even whole paragraphs) may serve a merely rhetorical purpose, such as introducing the argument or restating a particular proposition for the sake of emphasis or clarity. Such sentences are important to a well-written essay, but again, for the purposes of logical analysis it is best to ignore them. Such rhetorical embellishments do not enter into the inference relation, and should not be considered part of the argument, though they are clearly part of the passage in which the argument is contained.

Example:

~~I might as well give up.~~ [None of the television shows this season will be worth watching.] All of the television programs that I saw last night on ABC were new this season, ~~and~~ not one of them was worth watching.

premiss connective

Exercises:

In each of the following arguments, circle and label premiss flags, conclusion flags and premiss connectives. Cross out throw-away words. Identify and label the conclusion.

1. There is every reason to be optimistic. If there are other intelligent life-forms in the universe, then we should eventually be able to learn of their existence; because, after all, we are bound to discover the presence of any beings in the universe that have some degree of intelligence.
2. People who have not had the benefit of a college-level course in modern astronomy are unlikely to be aware of the precession of the equinoxes. But, presumably, people of the early Neolithic did not have the benefit of a college-level course in modern astronomy. It follows that the people who built Stonehenge could hardly be expected to have known about the precession of the equinoxes.
3. The New York Times gave the play a bad review, so it is clearly going to be panned by all the critics.

4. As far as I know, anything that hurts me is also likely to hurt you. Hence, I shouldn't put you in a choke hold, since I know this would hurt me.
5. We know, as a matter of scientific fact, that every molecule in the human body is replaced roughly every three years. But an individual can only be identified with its physical substance. It naturally follows that every human being becomes a whole new individual roughly every three years.
6. It is hardly a matter for controversy that animals undergo the sensations of pleasure and pain; and it is equally uncontroversial that humans are morally obligated to act in a way that minimizes pain and maximizes pleasure. So naturally, we humans will have to give up the idea that animals may be treated without concern for their feelings.
7. An animal is living organized body; and consequently the same animal, as we have observed is the same continued life communicated to different particles of matter, as they happen successively to be united to that organized living body.
—John Locke, *An Essay Concerning Human Understanding*
8. This may, indeed, seem a point too obvious to be worth making; but the question, "What do sentences express?" is closely analogous to the question, "What do sentences mean?" and, as I have tried to show elsewhere, the question "What do sentences mean?" has been a source of confusion to philosophers because they have mistakenly thought it to be factual.

—A. J. Ayer, *Language, Truth, and Logic*

Imperative Statements and Rhetorical Questions

Remember that propositions are sometimes expressed by sentences that are not declarative. Imperative statements and rhetorical questions can also express propositions that may be used in arguments.

Examples:

<p style="text-align: right;">⇒ [You should vote for me.] - conclusion</p> <p>Vote for me, (since) I'm not afraid to state some unpopular opinions if I think they are right. ↙ premiss flag</p>
<p style="text-align: right;">⇒ [You can't expect me to pay the rent.] - conclusion</p> <p>How can you expect me to pay the rent, (when) as everyone knows, the economy is going to hell in a hand basket? ↙ premiss flag?</p>

Exercises:

In each of the following arguments, circle and label premiss flags, conclusion flags, and premiss connectives. Cross out throw-away words. Restate any propositions that appear as imperatives or as rhetorical questions. Identify and label the conclusion.

1. It is well known that reading produces intelligent and well educated children. Shouldn't we, therefore, take steps to limit the amount of time that children spend watching television?
2. Don't you have any sense? That toxic dump site is dangerous, so stay away from it!
3. Vote for Senator Williams, for that is the best way to insure good government.
4. It should be apparent that spanking children bruises their little psyches. Do you want to be accused of bruising a child's psyche? Well, then it follows that you shouldn't spank your children.
5. Why may we not say, that all automata (engines that move themselves by springs and wheels as doth a watch) have an artificial life? For what is the heart, but a spring; and the nerves but so many strings; and the joints, but so many wheels, giving motion to the whole body, such as was intended by the artificer?

—Thomas Hobbes, *Leviathan*

Arguments without Flag Words

Frequently—indeed all too often—authors state an argument without using flag words. When this occurs, readers must use common sense, the context in which the passage occurs, or the tone of the passage, to determine which sentence states the conclusion. However, there are a couple of hints that may be useful:

(1) Your main clue to finding the conclusion is to understand the logical “flow” of the argument. Remember that the conclusion is supposed to follow from the premisses, but the premisses do not necessarily (and in fact usually don't) follow from the conclusion. For example, we know, of course, that all mammals are animals. Given this fact, consider the following two sentences:

- (a) All echidna are animals.
- (b) All echidna are mammals.

Echidna could be animals without being mammals, so (b) does not follow from (a). But echidna cannot be mammals without also being animals, so (a) does follow from (b). Hence in choosing which of these two sentences is supposed to be the conclusion, it would make better sense to choose (a).

(2) Remember also that the conclusion is under a shadow of doubt. To find the conclusion, look for the proposition that seems to need some degree of support. For example, consider the following two sentences:

- (a) Animals have the same sorts of emotions as humans.
- (b) Animals often act as if they have the same emotions as humans.

The second sentence is a matter of common knowledge—hardly open to doubt. The first sentence, on the other hand, is highly controversial. Not everyone believes it, and even those who do believe it do not expect it to be accepted without discussion. Hence, of these two sentences, (a) is the one more likely to be the conclusion.

Examples:

<p>No one supposes that the inner essence of a person may ^{not} be identified with mere physical substance. [The presence of an immaterial soul is our only reliable criterion of personal identity.] <i>conclusion</i></p>
<p><i>= [You shouldn't expect a tax increase this year.]</i> Don't expect a tax increase this year. No prudent politician will publicly support a tax increase in an election year. <i>conclusion</i></p>

Exercises:

In each of the following arguments, circle and label premiss flags, conclusion flags, and premiss connectives (but don't expect to find them in every argument). Cross out throw-away words. Restate any propositions that appear as imperatives or as rhetorical questions. Identify and label the conclusion.

1. Why should we change our teaching methods? All of today's great leaders were educated using the traditional methods.
2. Let's face it. Children spend more time playing than adults. Children have fewer inhibitions than adults. Children are just more creative than adults.
3. Don't vote for Senator Williams. Isn't it obvious to everyone that he is an unconscionable liar?
4. Despite all appearances to the contrary, the common garden slug is in fact quite intelligent. Slugs spend most of their time in quiet meditation. In this respect their behavior is precisely similar to that of most philosophers.
5. This duck acts just like George. It has all of George's memories and personality traits. Impossible as it sounds, George has been placed into the body of a duck!