

# Understanding evidence

Reading (before seminar)

**Evidence** for a claim is simply *a reason to believe that claim*. Dark clouds are evidence that it will rain; my dog’s wagging tail is evidence that he is happy; Professor Plum’s thumbprint on the murder weapon is evidence that he committed the crime.

We can diagram evidential relationships. We will use numbers to represent specific claims and arrows to represent evidential support. For example, if “1” represents the claim that dark clouds are gathering, “2” represents the claim that it will rain, and “3” represents the claim that I should carry an umbrella, then we will represent their relationship like this:



We use certain words – *because, since, therefore, so*, etc. – to mark evidential relationships: “Since dark clouds are gathering, it will rain soon.” These words are among the many **signposts** that indicate relationships among ideas; we will talk about many more signposting expressions in future classes.

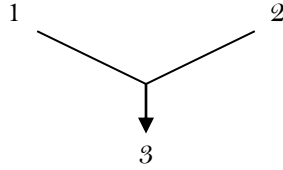
Let “1” represent the sentence that mice are square, and let “2” represent the sentence that elephants are round. Try diagramming these two sentences:

Because mice are square, elephants are round.  
Because elephants are round, mice are square.

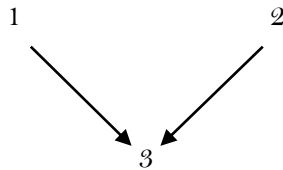
Sometimes several claims provide evidential support collectively but not individually. For example:

1. Amber says that this chemical is hydrogen peroxide.
2. Amber is an experienced chemist.
3. This chemical is hydrogen peroxide.

1 by itself is not evidence for 3. Similarly, 2 by itself is not evidence for 3. But 1 and 2 together are evidence for 3. We will diagram this as follows:



This is very different from the situation depicted below, in which 1 and 2 independently support 3:



Finally, a brief note on how to use evidence well in your own thinking and writing. Very roughly, you may think of a claim as good evidence if *just about anyone can verify it*. The claim that terrorists attacked the World Trade Center on September 11, 2001 is good evidence, since just about anyone can verify this claim through news sources. But consider the claim that these attacks occurred because human nature is bad. This claim is not particularly good evidence, as it is difficult to verify. Though you may arrive at this claim via some chain of reasoning, it is not an effective starting point.

Practice (in seminar)

Exercise 1. Let's come up with three pieces of evidence that this is a water bottle.

Exercise 2. Let's find plausible values for 1, 2, and 3 in the above diagram.

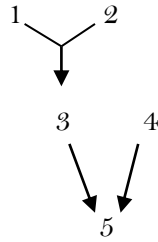
Try the next two exercises in small groups, putting your answers on the whiteboard. Hint: when you diagram an argument, always *look for the conclusion first*.

Exercise 3. Using the numbering system below, diagram the chain of reasoning in the following paragraph (which is poorly written and should not be taken as a model):

Everyone wants to be happy. But you can only achieve that goal by caring for others, since the selfish life is ultimately empty. So you should be altruistic. In addition, if you are altruistic, then other people will help you get what you want.

1. Everyone wants to be happy.
2. You can only achieve happiness by caring for others.
3. The selfish life is ultimately empty.
4. You should be altruistic.
5. If you are altruistic, then other people will help you get what you want.

Exercise 4. Write a sensible paragraph corresponding to the following diagram:



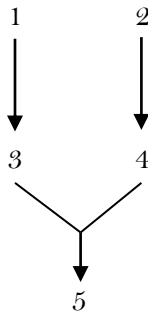
Homework (after seminar)

Remember to **print two copies** of your homework, and **put your name on the back** so that I may practice anonymous grading.

Exercise 1. For the following paragraph, assign each claim a number and diagram the chain of reasoning:

I should not be punished for anything that I do. For all of my actions have been determined by the laws of physics, which are out of my control, and I should not be punished for anything that is out of my control.

Exercise 2. Write a paragraph corresponding to the following diagram, using the claims listed below. Your paragraph need not make sense!



1. Stripes look flattering on anyone.
2. The Black Widow is a deadly assassin.
3. Polka dots are hideous.
4. Tsunamis are no big deal.
5. PPT has the best lectures in the common curriculum.