Arguments about food poisoning

Introduction

This short activity is one of several designed to help students improve their argument skills. It introduces them to the basic structure of an argument and asks them to analyse and evaluate three arguments used in information about food poisoning.

Suggested answers
Part 1

A . "I don't think we should go to Alf's Burgers. (Last week I got awful vomiting and diarrhoea after I got a takeaway from there)."

The evidence used as a reason is probably true but a single case is not sufficient to justify the conclusion.   Of course there is nothing wrong with deciding to eat somewhere else, but the reason given does not support the conclusion. It is a poor argument.

B. There has been a higher than normal number of cases of food poisoning in our town this month. (Most of the victims said they had eaten pork pies from Bill's Butchers.) The pork pies must be the source of the infection.

The evidence used as a reason is very weak, it relies on what people said after the event, with no information on when they had eaten the pork pies or on how many people are involved.   Therefore it does not justify the conclusion. It might, however, be enough to justify doing more research.

C. Eight elderly residents in a care home have died from an E coli infection in the last two weeks. It seems that the cause of the outbreak was a contaminated batch of frozen meat pies from Wholesome Caterers. (The strain of E coli found in the victims was identical to that in the meat pies.)

This is by far the best of the three arguments. The evidence is clearly explained and supports the conclusion, particularly as the conclusion only says 'it seems that', much less certain than the 'must be' in argument B.

Part 2
Is raw milk safe?

reason 1

reason 2

Most milk sold in the UK is pasteurised to kill any bacteria that might infect humans. However some farms provide "raw", unpasteurised milk to local customers, who say it tastes better and are convinced that it is better for their health. The farmers argue that "raw" milk is safe because (the milk is produced to very strict hygiene standards. They point out that these standards are much stricter than those required in normal dairy herds).   (They suggest that the infections that lead to human illness are more likely to be spread between cows kept in intensive, industrialised dairy farms than on the organic farms that supply raw milk.)

The two reasons given to support the conclusion are not very good. They rely on a comparison with normal dairy herds rather than any direct scientific evidence of safety. It does not mean the milk is not safe, just that they have not presented a good argument. The information about taste and nutrition are not relevant to the conclusion, which is about safety.

The Food Standards Agency, however, <u>warns against the consumption of raw milk</u>. They say that (the risks of potentially fatal infections such as listeria or salmonella outweigh any benefits.)
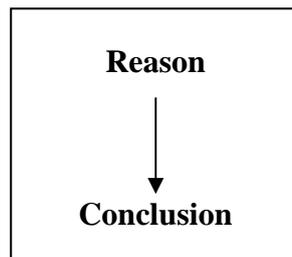
The reason given this time is an opinion, not a fact, but an opinion from a respected body with all the facts available to it, therefore one we should take seriously, whether we agree with it or not, it is a sound reason, adequate for a short argument.

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Introduction
In Science in Society you need to be able to criticise arguments used by other people and to be able to write persuasive and logical arguments yourself. Understanding the structure of an argument will help you do this.   An argument is trying persuade us to accept the conclusion. To do this it tells us the reason for the conclusion, the evidence behind the conclusion.   The simplest form of argument is

Reason

↓

Conclusion

Activity Part 1
You can use this model to analyse and then to criticise the three arguments below.

A. "I don't think we should go to Alf's Burgers. Last week I got awful vomiting and diarrhoea after I got a takeaway from there."

B. There has been a higher than normal number of cases of food poisoning in our town this month. Most of the victims said they had eaten pork pies from Bill's Butchers. The pork pies must be the source of the infection.

Ushton News 2/08/2005

C. Eight elderly residents in a care home have died from an E coli infection in the last two weeks. It seems that the cause of the outbreak was a contaminated batch of frozen meat pies from Wholesome Caterers. The strain of E coli found in the victims was identical to that in the meat pies.

Eshtown Chronicle 5/03/2001

1. For each argument identify the conclusion and underline it. Identify the reason which supports the conclusion and put it in brackets. It doesn't matter how good or bad the argument is at this stage. Either the reason or the conclusion may appear first.

2. Think about the quality of the argument in each case.   Which is the best of the three arguments? Why did you choose it?

To do this think about the quality of the evidence. Also consider whether the reason actually supports the conclusion.

3. Share your ideas with the class.

Part 2

The next example is a longer passage that contains 2 reasons supporting the conclusion that <u>unpasteurised milk is safe</u> and some other information that is not part of the argument. Analyse it in the same way.

> ### Is raw milk safe?
> *Most milk sold in the UK is pasteurised to kill any bacteria that might infect humans. However some farms provide "raw", unpasteurised milk to local customers, who say it tastes better and are convinced that it is better for their health. The farmers argue that raw milk is safe because the milk is produced to very strict hygiene standards. They point out that these standards are much stricter than those required in normal dairy herds.   They also suggest that the infections that lead to human illness are more likely to be spread between cows kept in intensive, industrialised dairy farms than on the organic farms that supply raw milk.*

The article continues presenting an opposing point of view, a counter-argument. Analyse this.

> *The Food Standards Agency, however, warns against the consumption of raw milk. They say that the risks of potentially fatal infections such as listeria or salmonella outweigh any benefits.*

The model of an argument now includes