

Exercise 4.1 Identifying assumptions

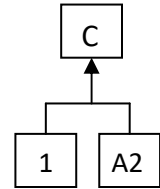
1. Maria won this year's local sailboat race by beating Sue, the winner in each of the four previous years. We can conclude from this that Maria trained hard.

1. Maria won this year's local sailboat race by beating Sue, the winner in each of the four previous years.

A2. Maria could only beat a four-time winner by training hard.

Therefore:

C. Maria trained hard.



An assumption like: “Anyone who beats a four-time winner must have trained hard” also works, but is stronger than the argument needs. The general claim might be false – perhaps there are people who are so good they can beat a four-time winner without training. All the argument needs is the claim that *Maria* would have to train hard.

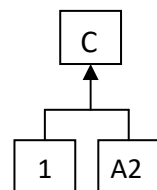
2. Psychiatrist: Take any emotion you care to consider. There are always situations in which it is healthy to try to express that emotion. So, there are always situations in which it is healthy to try to express one’s anger.

1. For any emotion, there are always situations in which it is healthy to express that emotion.

A2. Anger is an emotion.

Therefore:

C. There are always situations in which it is healthy to try to express one’s anger.



3. Having an efficient, attractive subway system makes good economic sense. So, the city needs to purchase new subway cars, since the city should always do what makes good economic sense.

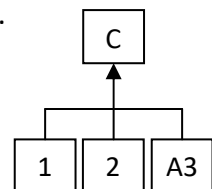
1. Having an efficient, attractive subway system makes good economic sense.

2. The city should always do what makes good economic sense.

A3. New subway cars are required in order for the city to have a subway system that is efficient and attractive.

Therefore:

C. The city needs to purchase new subway cars.



4. Since vague laws set vague limits on people’s freedom, they make it impossible for people to know for certain whether their actions are legal. Thus, under vague laws people cannot feel secure.

There are two unstated assumptions here:

1. Vague laws set vague limits on peoples' freedom.

A1. People cannot know whether their actions are legal if the law does not set clear limits on their freedom.

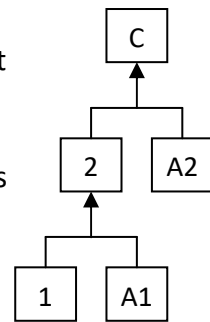
Therefore:

2. Vague laws make it impossible for people to know whether their actions are legal.

A2. People can feel secure only if they know for certain whether their actions are legal.

Therefore:

C. Under vague laws, people cannot feel secure.



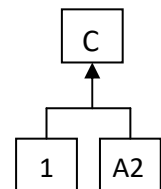
5. Although cigarette smoking is legal, it should be banned on all airline flights. Cigarette smoking in the confines of an aircraft exposes non-smokers to harmful secondary smoke that they cannot avoid.

1. Cigarette smoking in the confines of an aircraft exposes non-smokers to harmful secondary smoke that they cannot avoid.

A2. People should be prohibited from engaging in an otherwise legal activity in those situations in which that activity would unavoidably expose others to harm.

Therefore:

C. Although cigarette smoking is legal, it should be banned on all airline flights.



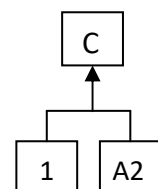
6. Zoologist: Animals can certainly signal each other with sounds and gestures. However, this does not confirm the thesis that animals possess language, since animals do not use sounds or gestures to refer to concrete objects or abstract ideas.

1. Animals do not possess the ability to use sounds or gestures to refer to concrete objects or abstract ideas.

A2. If a system of sounds or gestures contains no expressions referring to concrete objects or abstract ideas, then it is not a language.

Therefore:

C. The fact that animals can signal to each other with sounds and gestures does not confirm the thesis that animals possess language.



7. A smoker trying to quit is more likely to succeed if his or her doctor greatly exaggerates the dangers of smoking. Similar strategies can be used to break other habits. But since such strategies involve deception, individuals with addictions cannot easily adopt them unless a doctor or some other third party provides the warning.

1. A smoker trying to quit is more likely to succeed if his or her doctor greatly exaggerates the dangers of smoking.

2. Similar strategies can be used to break other habits.

Therefore:

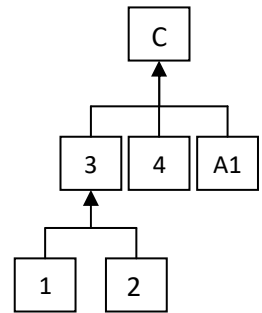
3. Greatly exaggerating the dangers of an addiction can be a successful strategy for breaking the addiction.

4. This strategy involves deception.

A1. People do not find it easy to deceive themselves.

Therefore:

C. Individuals with addictions cannot easily adopt these strategies, unless a doctor or some other third party provides the warning.



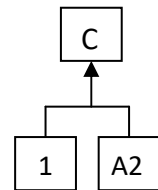
8. A photograph taken with a traditional camera can never convey the experience of being in a landscape since only a three-dimensional representation of a landscape can convey the experience of being in that landscape.

1. Only a three-dimensional representation of a landscape can convey the experience of being in that landscape.

A1. A photograph taken with a traditional camera is not three dimensional.

Therefore:

C. A photograph taken with a traditional camera can never convey the experience of being in a landscape



Exercise 4.2 Arguments for evaluation

1. Sociologist: The claim that there is a large number of violent crimes in our society is false, for this claim is based upon the large number of stories in newspapers about violent crimes. But newspapers are more likely to print stories about violent crimes, since **such crimes are very rare occurrences.**

1. Violent crimes are very rare occurrences.

Thus:

2. Newspapers are more likely to print stories about violent crimes.

3. The claim that there are a large number of violent crimes in our society is based upon the large number of stories in newspapers about violent crimes.

Therefore:

C. It is false to claim there are a large number of violent crimes in our society.

Evaluation: This is a question begging argument, since the reasoning assumes that violent crimes are very rare (premise 1), when this is the conclusion the argument is intended to establish. You

might also have noticed that even if the claim that there is a lot of violent crime is based on the biased sample of reporting we get from newspapers, it does not follow that the claim is *false*. All that follows is that we do not really know whether it is true. Just because the evidence you have for a belief is not reliable, that does not imply your belief is *false*. It might be true: it's just that your evidence is not sufficient to show this.

2. Advertisement: Most power hedge trimmers on the market do an adequate job of trimming hedges, but many power hedge trimmers are dangerous to operate and can cause serious injury when used by untrained operators. Bolter Industries' hedge trimmer has been tested by National Laboratories, the most trusted name in safety testing. So you know, if you buy a Bolter's, you are buying a power hedge trimmer whose safety is assured.

1. Bolter Industries' hedge trimmer has been tested by National Laboratories

2. National Laboratories are the most trusted name in safety testing.

A3. The results from National Laboratories testing of Bolter's hedge trimmer showed that it was safe.

Therefore:

C. If you buy a Bolter's, you are buying a power hedge trimmer whose safety is assured.

Evaluation: As original stated the argument is not complete – there is missing relevant evidence: what were the results of National Laboratories' tests of Bolter Industries' hedge trimmer? For the conclusion to follow we need to assume something like A3. But we have no idea whether A3 is true or not. Even if A3 was true one might still question whether the premises are sufficient to establish the conclusion– 'most trusted' is one thing, 'most accurate/reliable' is another.

3. There is no genuinely altruistic behaviour. Everyone needs to have a sufficient amount of self-esteem, which crucially depends on believing oneself to be useful and needed. Behaviour that appears to be altruistic can always be interpreted as motivated by the desire to reinforce that belief, a clearly self-interested motivation.

1. Everyone needs to have a sufficient amount of self-esteem, which crucially depends on believing oneself to be useful and needed.

2. Behaviour that appears to be altruistic can always be interpreted as motivated by the desire to reinforce the belief that one is useful and needed.

3. The desire to reinforce the belief that one is useful and needed is clearly a self-interested motivation.

A4. Behaviour that can be interpreted as motivated by self-interest is not altruistic.

Therefore:

C. There is no genuinely altruistic behaviour.

Evaluation: The argument is based on a questionable unstated assumption -- that any behaviour that can be *interpreted* as motivated by self-interest is in fact self-interested and therefore not genuinely altruistic.

4. Although 90 percent of the population believes itself to be well informed about health care, only 20 percent knows enough about DNA to understand a news story about DNA. So at least 80 percent of the population does not know enough about medical concepts to make well-informed personal medical choices or to make good public policy decisions about health care.

1. Although 90 percent of the population believes itself to be well informed about health care, only 20 percent knows enough about DNA to understand a news story about DNA.

A2. Understanding DNA is essential for making well-informed personal medical choices and for making good public policy decisions about health care.

Therefore:

C. At least 80 percent of the population does not know enough about medical concepts to make well-informed personal medical choices or to make good public policy decisions about health care.

Evaluation: The argument is based on a questionable unstated assumption: that understanding of DNA is essential to making well-informed personal medical choices or to making good public policy decisions about health care.

5. The number of calories in a gram of refined cane sugar is the same as in an equal amount of fructose, the natural sugar found in fruits and vegetables. Therefore, a piece of candy made with a given amount of refined cane sugar is no higher in calories than a piece of fruit that contains an equal amount of fructose.

1. The number of calories in a gram of refined cane sugar is the same as in an equal amount of fructose, the natural sugar found in fruits and vegetables.

A2. Sugar is the only (or main) contributor to the calorie content of candy.

Therefore

C. A piece of candy made with a given amount of refined cane sugar is no higher in calories than a piece of fruit that contains an equal amount of fructose.

Evaluation: The argument overlooks the possibility that sugar might not be the only calorie containing ingredient in candy or fruit.

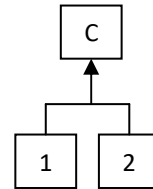
6. Politician: The funding for the new nationwide health-awareness campaign should come from an increase in taxes on cigarettes. It is well established that cigarette smoking causes many serious health problems, and it is only reasonable that people whose unhealthy habits cause so many health problems should bear the costs of that campaign.

1. It is well established that cigarette smoking causes many serious health problems.

2. People whose unhealthy habits cause so many health problems should bear (most of) the costs of the new health-awareness campaign.

Therefore:

C. The funding for the new nationwide health-awareness campaign should come from an increase in taxes on cigarettes.



Evaluation

This is a weak argument. The premises are relevant to the conclusion, but not sufficient. The conclusion goes a bit beyond what is actually licensed by the premises. Note that the conclusion mentions a concept, ‘increasing *taxes* on cigarettes’, which is not mentioned anywhere in the premises. What actually follows from 1 and 2 is that smokers should bear most of the cost of the new health-awareness campaign. The main conclusion only follows on the assumption that the best way to ensure that smokers bear most of the cost of the new campaign is by increasing taxes on cigarettes.

We can incorporate this analysis of the argument into our argument map as follows:

1. It is well established that cigarette smoking causes many serious health problems

2. People whose unhealthy habits cause so many health problems should bear (most of) the costs of the new health-awareness campaign.

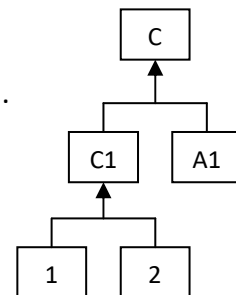
Therefore:

C1. Cigarette smokers should bear (most of) the costs of the new health-awareness campaign.

A1. The best way to ensure that cigarette smokers bear (most of) the costs of the new-health awareness campaign is by increasing taxes on cigarettes.

Therefore:

C. The funding for the new nationwide health-awareness campaign should come from an increase in taxes on cigarettes.



Let’s look at the premises. Premise 1 is an appeal to authority and surely acceptable. Though no specific authority is identified, the fact is common knowledge, derived from expert scientific authority. Premise 2 is a generalisation – perhaps implicitly supported by a more general claim; that people who engage in unhealthy activities should bear the costs of those activities. That premise might be rejected. Given that nicotine is an addictive substance is it really fair to place that much blame on people who might find it hard to kick the habit?

What about A1? The assumption is that raising taxes on cigarettes is the best (fairest?) way to ensure that smokers bear the costs of their habit. But there are objections to this. For example, that method of raising money might be said to unfairly affect those least able to pay, since consumption taxes affect those on low-incomes more than those on high incomes. It might also depend on the current level of taxes. If they are already very high then a further increase might have little or no effect.

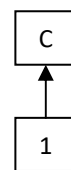
7. Although some people claim it is inconsistent to support freedom of speech and also support legislation limiting the amount of violence in TV programs, it is not. We can limit TV program content because the damage done by violent programs is more harmful than the decrease in freedom of speech that would result from the limitations envisioned by the legislation.

Analysis

1. The damage done by violent programs is more harmful than the decrease in freedom of speech that would result from the limitations envisioned by legislation limiting the amount of violence in TV programs.

Therefore:

C. It is not inconsistent to support freedom of speech and also support legislation limiting the amount of violence in TV programs.



Evaluation

There is only one stated premise here, which suggests the argument is making an unstated assumption. One way to formulate that assumption would be like this:

It is possible to support freedom of speech while also recognising that its value can sometimes be outweighed by other considerations.

With this assumption in place, premise 1 becomes relevant and sufficient too. The remaining question is then whether the stated premise and the assumption are actually true. Premise 1 is an empirical generalisation which should not be accepted without further evidence. The assumption seems to be acceptable as true -- supporting freedom of speech *need not* entail thinking that it is a right that can never be outweighed.

8. Since 1960 the spotted owl population has declined alarmingly. Timber companies that have been clearing the old-growth forests where the spotted owl lives are responsible for this. We should therefore ban clear felling in the old-growth forests.

Analysis

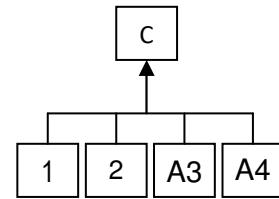
1. Since 1960 the spotted owl population has declined alarmingly.
2. Timber companies that have been clearing the old-growth forests where the spotted owl lives are responsible for this decline in the spotted owl population.

A3. We should try to halt the decline of the spotted owl population.

A4. Banning clear felling in the old-growth forests is the best way to halt the decline in the spotted owl population.

Therefore:

C. We should ban clear felling in the old-growth forests.



Evaluation

Premise 1 is a factual claim, while premise 2 is an explanation. Premise 2 states that it is the timber companies' logging in the old growth forests that explains why the spotted owl population has declined alarmingly since 1960. Without further information, we cannot evaluate this explanation. The explanation implies that the logging-companies have been logging in the forests where the owls live. If that were false, the explanation could not be correct. Even if it were true, there might be other explanations for the decline in owl populations. We could look to see if the decline in owl populations had already begun before the logging started. If so, that would cast doubt on the explanation. Alternative hypotheses might be that a newly introduced species is competing with the spotted owls or that they have become subject to a disease of some kind.

The main conclusion follows, if two assumptions are made. First the argument assumes (A3) that the decline in the spotted owl population is a bad thing that we should try to prevent. Whether this is true or not might depend on many factors. What will happen to other species if the owls die out? Do the owls cause any damage to the environment or to property? How much value do we as a society place on these owls? The second assumption is that banning clear felling is the best way to halt the decline (A4). But there could be reasons why this is not so. Perhaps a complete ban would not be necessary – a reduction in logging activities might be sufficient.

Overall, this is a weak argument. Given the two assumptions, the conclusion would follow. But there are many reasons for doubting the premises and the assumptions, which the author has done nothing to address. So we should not accept the conclusion based on this argument alone.