1 Chapter 8: Assessing Adequacy

1.1 The Criterion of Adequacy

We now move to the third criterion for assessing the soundness of an argument, adequacy. Even if the premises of an argument are acceptable and relevant to the conclusion, this does not mean that they provide adequate support for the conclusion. This chapter is concerned with how to determine if a conclusion is adequately supported.

One thing to notice about the criterion of adequacy is how it differs from the other two criteria. The premises of an argument are either acceptable or they are not and they are either relevant or they are not. Acceptability and relevance do not come in degrees. Adequacy, however, does come in degrees and it is responsible for determining the degree of logical strength of an argument. A set of premises can range from being totally inadequate, in which case the premises provide no support for the conclusion, to fully adequate, in which case the argument follows necessarily, though this only occurs in the case of deductive arguments.

The main two things to look out for when assessing adequacy are the strength of the conclusion and the strength of support of the premises. The strength of the conclusion can vary considerably and the strength of the conclusion determines how likely it is that the conclusion will not be adequately supported. Strong conclusions, which, for instance, make claims that certain thing will happen or are the case, are more likely to have inadequate support than weak conclusions, which, for instance, make claims that certain things may happen or might be the case. One determines if a conclusion is adequately supported by assessing the strength of support provided by the premises. Generally, strong conclusions require strong support, i.e., must have strong premises that are acceptable and relevant, in order to not violate the criterion of adequacy but weak conclusions may have adequate support from weak premises.

The final thing that one should do is to consider the consequences if the conclusion is false. This helps to determine if it is likely that the conclusion is false, i.e., helpful in finding counterexamples, and in determining the strength of the conclusion.

1.2 Appeals to Authority (II)

We discussed the relevance of appeals to authority in the last tutorial. We now consider the criteria for adequacy of appeals to authority. If these criteria are not met then the argument may commit the fallacy of appeal to authority. Whether or not the argument commits a fallacy depends on the context of the argument.

1. The authority must be identified.

2. The authority must be generally recognized by the experts in the field.

3. The particular matter in support of which an authority is cited must lie within his or her field of expertise.

4. The field must be one in which there is genuine knowledge.
5. There should be consensus among the experts in the field regarding the particular matter in support of which the authority is cited.

1.3 Analogical Reasoning

A common form of reasoning is reasoning by analogy. One must watch out for arguments that employ analogical reasoning, however, since they can often fail to be adequate. In any argument that uses an analogy one draws an inference about some unknown property of some thing A based on a similar property of a thing B and an analogy between B and A. The things to watch out for in such arguments is the strength of the analogy. There need to be (usually several) relevant similarities and no (or only weakly) relevant dissimilarities between the two things in order for the analogy to be adequate to support the conclusion being made. In making an assessment, one should examine the relevant similarities and look for relevant dissimilarities and then assess whether there are enough relevant similarities and weak enough dissimilarities to make the analogy adequate.

Consider the following example:

Giving fathers a period of paid leave when their wives give birth would not be prohibitively expensive. In Sweeden, where such a policy has been in effect for more than a decade, only 12% of Sweedish men take the leave.

What are the relevant similarities? What might be relevant dissimilarities? Is the analogy strong enough to get you the conclusion?

1.4 Appeals to Ignorance

Just a quick note about appeals to ignorance, a claim that a conclusion is true because it has not been proven false. As we discussed before, in most cases such claims fail even to be relevant. There are cases, however, where appeals to ignorance can be relevant, but they can only be adequate if the are supported by additional premises. For instance, if we have some evidence that a conclusion is true and there is no evidence that it is false, this lack of evidence for the falsity does provide some additional support. It would provide more support if a concerted effort was made to find contrary evidence but none was found. Thus, we see that appeals to ignorance can be relevant, but can only be adequate when they come together with additional premises.

1.5 The Slippery Slope Fallacy

This fallacy concerns cases where a chain of inferences, in which in each step the conclusion only follows with some probability. Such chains are of the form:

A will probably lead to B; B will probably lead to C; C will probably lead to D; D will probably lead to E; E will probably lead to F.

Even if the probability associated with each inference is high, we probably will not be entitled to make the claim ‘A will probably lead to F’. This is because when we combine such a chain of inferences we multiply the probabilities. So, if the probability of each inference was 85%, the probability of ‘A implies F’ would be 44%. Arguments that make a mistake like this commit the slippery slope fallacy. Note that if one step in the chain has a low probability, this will significantly lower the probability of the conclusion ‘A imples F’.
1.6 Causal Fallacies

1.6.1 Post Hoc

It is certainly true that any cause of an event must precede its effect, but it is fallacious to conclude that if some event \( E_1 \) precedes another \( E_2 \), then \( E_1 \) causes \( E_2 \). Inferences that make this claim commit the post hoc fallacy. \( E_1 \) does not cause \( E_2 \) simply because \( E_1 \) precedes \( E_2 \). Here is an example:

In Aesop’s fable the rooster reasoned as follows: Every morning without fail, the sun rises just a few minutes after I start crowing. I must be the greatest creature in the world since I cause the sun to rise every day.

1.6.2 Confusing Cause and Effect

Cause and effect always occur together and so sometimes it may be difficult to distinguish the effect and the cause. The fallacy of confusing cause and effect is committed if the causal direction is the wrong way around. Here is an example:

Almost everyone who dies seems to die in a hospital. Hospitals really are dangerous places.

1.6.3 Common Cause

Although cause and effect always occur together, it is sometimes the case that although two events \( E_1 \) and \( E_2 \) always occur together they are not causally related at all. This happens if both \( E_1 \) and \( E_2 \) are effects of a common cause. The fallacy of common cause is committed if it is claimed that there is a causal relationship between \( E_1 \) and \( E_2 \) when in fact both \( E_1 \) and \( E_2 \) are caused by some event \( C \). Here is an example:

Recent studies have shown that people who are commonly regarded as being successful have much larger vocabularies than average. This is no accident. Having an extensive vocabulary is an important factor in producing success.

1.7 Questions for Discussion

Determine whether the following are empirical or non-empirical claims:

1. Christians believe that the Bible is the word of God.
2. The human race was not created by God but evolved from lower forms of life.
3. You should apologize to Miss Rothwell as soon as possible.
4. Science explains why things happen

Identify the nature of the weakness in the following arguments:
1. There is no such thing as an unselfish act. If you examine any so-called unselfish act, such as donating money to charity, you will always find that there is a selfish motive. There has to be, for nobody can do anything unless they think that it will give them some kind of satisfaction. Seeking self-satisfaction is the only reason why anyone does anything. So every act is selfish.

2. In his book *Utilitarianism*, John Stuart Mill defends the view that the ultimate test of right and wrong is the greatest happiness principle. This principle states that we should always seek to promote the general happiness, which he defines as the greatest happiness of the greatest number of people. To show that this principle is true, Mill argues as follows: Each person’s happiness is a good to that person. Therefore the general happiness is a good to the aggregate of all persons.

Each of the following arguments relies on a premise that might be regarded as irrelevant. Identify the offending premise and suggest an argument that shows that it is irrelevant.

1. There are no absolute values, *i.e.*, no values that are valid for all times and all places. To see this you only have to look at the wide variety of values that have been held by other societies and at earlier times in our history. Pick any value you like: there will be some society somewhere that has rejected it. You simply cannot find a value that has been valid at all times and all places.

2. There are few people that believe that prostitution is morally acceptable, but in fact it is immoral behaviour. It is contrary to the accepted standards of our community as reflected in public opinion and in the legal system. The vast majority of Canadians strongly believe that prostitution is immoral and therefore quite properly reject any proposal to legalize prostitution.

Comment on the strengths and weaknesses of the following arguments:

1. Perhaps we cannot know for certain that many animals feel pain, but there are three reasons for holding that they do. First, they exhibit behaviours that in humans is invariably associated with feeling pain. Second, they have a central nervous system that is similar to humans’. And third, the ability to feel pain would have the same kind of evolutionary advantage for many animas that it does for humans.

2. Athletes who earn multi-million dollar salaries deserve them. Those who are so critical of these “astronomical” salaries conveniently overlook two reasons that make such salaries entirely justified. First, these athletes are superemely talented. They are able to perform better than almost everyone else, including most other athletes. Second, they have only a few short years to make their fortune, since in most cases they will have retired from professional sport by their mid-thirties. To compare their salaries with what most people earn you would have to spread athletes’ million-dollar salaries out over forty years to make the comparison fair.