Tips for Creating an Inductively Strong Argument

Begin by taking a look at the companion document “How to Construct a Valid Main Argument.” Many of the steps in that document are important here as well, especially steps 1-3:

1. State your (tentative) conclusion.
2. Ask yourself why it is true. List that reason as a premise. (In the inductive case, there may be several reasons.)
3. Find another premise (or premises) to link the stated premise to the conclusion.

The difference is that, with inductive reasoning, the link in step 3 is not an absolute one, but a probable one. You will want to pick the evidence that lends the greatest likelihood of your conclusion being true. For more information about inductive reasoning and how to strengthen it, take another look at Chapters 5 and 6 in our book as well as the guidance for the course. The intention of this document is to look at some of the various types of inductive arguments discuss briefly how to strengthen them.

Statistical Reasoning:

Inductive arguments often utilize statistics to provide evidence for their conclusions. Your argument for your conclusion may or may not exactly match the statistical syllogism or inductive generalization forms, but there is a good chance you will find statistics useful in an inductive argument argument.

For example, here are some statistics that might help support a conclusion:

- People who text while driving are 2300% more likely to crash while driving (Richtel, 2009). Therefore, it is wrong to text while driving.
- More than 4% of people on death row are likely to be innocent (McLaughlin, 2014). Therefore, the death penalty is wrong.
- Approximately 40% of restaurants fail within the first three years (Miller, 2007). Therefore, restaurants are not a good investment.

Adding the missing premise: You can strengthen each of these inferences by adding another premise to link the given premise(s) to the conclusion. You will want this link to be as strong as it can be while remaining true. It is often possible for the missing premise to be strong enough to make the argument deductively valid. Here is a linking premise that makes the first argument deductively valid:

P1: People who text while driving are 2300% more likely to crash while driving (Richtel, 2009).
P2: Anything that increases the likelihood of crashing that much is wrong to do.
C: Therefore, it is wrong to text while driving.

Whether your argument ends up deductively valid or remains inductive, you can usually make your argument stronger by adding a premise that links your statistic to your conclusion.

A standard statistical syllogism:

97% of Fs are G
X is an F
Therefore X is G

Can benefit, for example, from a premise that states that X is just as likely as every other F to be a G.

**Appeals to Authority**

As noted in the Chapter 5, appeals to authority are not always fallacious, and, in fact, are often quite strong, especially if the matter is well established by experts. For example, even though some of the claims of quantum physics might seem absurd (many of them do), one would be wise to accept that quantum physics is true because of the preponderance of top authorities that have studied it carefully and found it to be true. The reasoning appeals more than one authority in the same inference.

Nearly all physicists today accept the truth of quantum physics.
Therefore, quantum physics is very likely to be true.

If your conclusion is a moral one, about what one ought or ought not to do, then relying only on authority will generally not be adequate because moral principles are not generally the type that can be settled by appeals to authority. Philosophers and other scholars can offer pearls of wisdom about such issues and may be used as authorities, but they are not likely to settle those non-objective matters merely by assertion of authority.

Authorities often do weigh in, however, on matters of fact that are still seen as controversial. For example:

97% of climate scientists agree that climate change is real and likely due to human activity (NASA, 2015).
Therefore climate change is real and likely due to human activity.

In such cases, you will want to strengthen your reasoning by studying the reasons that 3% may disagree and determine if those counterarguments can be overcome. In all cases it is best to examine objections to any assertion of authority and determine how objective and observable the facts of the matter are in the given case.

**Adding the missing premise**: Here too, inductive inferences can be strengthened and clarified by adding a premise that links the premise to the conclusion. Here is an example:

Neil deGrasse Tyson says that the universe is expanding at an accelerating rate.
*Added premise*: Neil deGrasse Tyson is a leading expert on astrophysics.
Therefore, the universe is expanding at an accelerating rate.

**Inferences to the Best Explanation**

Inferences to the best explanation, while inductive, can provide very strong evidence for conclusions. The discovery that the sun is at the center of the solar system, for example, was based on this form of reasoning. For examples, take a look at Chapter 6 of our book.

How strong such an inference is is often based on whether there exists a stronger explanation. Here is an example that you might see on Dateline:
The deceased’s husband took out a life insurance plan for her only a month before she was killed.
She told her sister the week before that she thought he was planning to kill her.
He was the only one with her on the weekend that it happened.
The story he told about what happened didn’t match the forensic evidence.
Therefore, the husband is probably guilty.

In such cases, we want to investigate not only the premises of this argument but also the likelihood of an alternate explanation of the evidence.

Adding the missing premise: Here too, you can strengthen the inference by adding a premise that makes more clear that this is the best explanation available, like this one:

Added premise: The husband being guilty is the only plausible explanation of why she died.

Making this premise explicit both can strengthen the argument, and it can also remind us to check carefully whether the added premise is true.

A Combination of Approaches
With inductive reasoning, evidence is cumulative. The more evidence that you can find for your conclusion, the stronger the argument becomes. It is often best to use a combination of different types of inductive inference to arrive at your conclusion. Many simple arguments implicitly involve a combination of statistical reasoning, appeals to authority, and inferences to the best explanation. Here is an example,

Based on the results of scientific studies, the Center for Disease Control reports that vaccines do not cause autism (CDC, 2015).
Therefore, vaccines do not cause autism.

This inductive inference to implicitly involve several types of inductive reasoning in the same inference:

Studies with large samples have shown that vaccines do not cause autism.
Medical authorities have stated that vaccines do not cause autism.
Therefore, vaccines do not cause autism.

Adding theConnecting Premise:
We can further strengthen and clarify the reasoning, again, by adding the connecting premise:

Added premise: It is unlikely, given the extensive scientific study of the matter that all of these studies and all of these authorities are wrong.

This example, of course, has opposition. Any inductive reasoner would do well to consider the substance of the best arguments on the other side.

Considering Arguments on the Other Side
Another step from the “Steps to the Creation of a Valid Argument” document that is highly relevant to inductive reasoning as well is this one:
8. Consider possible objections to your argument and possible ways to strengthen it.

Given that inductive reasoning can be strengthened or weakened with new information, it is essential to consider the evidence on the other side in developing your argument.

In cases in which the contrary evidence can be overcome, showing how to overcome it will strengthen your argument. On the other hand, if you find that the contrary evidence has merit then you can demonstrate intellectual honesty by including concessions and by changing your reasoning to accommodate it. If the objection is correct, you may need to change your conclusion in light of this fact. Your new thesis may even contain an acknowledgment of the concession:

Though there are many ancient and scenic forests that should be preserved, the current for practice of logging for paper and wood resources is generally sustainable.

Ultimately, the incorporation of an understanding of the arguments for the other side will make your reasoning more sophisticated and more honest, and in most cases, actually stronger.

Summary of some principles for creating inductively strong arguments:
1. State your (tentative) conclusion.
2. Ask yourself why it is true. Provide the best possible.
3. Find another premise that links the premise to the conclusion.
4. Combine all of the types of evidence that you can to support the conclusion as strongly as possible.
5. Carefully consider the best evidence for the opposite view and allow that to influence/improve your reasoning and possibly your conclusion.
6. Repeat the process so that your argument is as strong as you can get it while having true premises.

References:


