CHAPTER 7 – ARGUMENTS WITH DEFINITIONAL AND MISSING PREMISES

What You’ll Learn in this Chapter

In Chapters 1-5, we developed a skill set that’s sufficient for the recognition, analysis, evaluation and construction of any argument we might come across, and in Chapter 6 we thought about how we can apply this set of skills to longer, and more complex arguments.

It’s one thing to say that a set of skills is rich enough to allow us to do anything that needs to be done, however, and quite another thing to say that a set of skills includes all of the short-cuts and handy little extras that we might ever want to have. There are many skills that we didn’t cover in the first part of this book because we don’t need to have them. A number of these skills are nice to have anyway, however, because they can simplify and streamline certain tasks. This chapter will give us two of these handy, but optional, skills.

In this chapter you’ll learn
• how to evaluate definitional premises, and
• how to evaluate inferences by supplying, and evaluating, missing premises.

Evaluating Arguments with Definitional Premises

Argument 1

Consider the argument analyzed below.

“Liars are people who lie and a lie is just a false statement. Thus, liars are people who make false claims. Everyone makes false claims sometimes, though, so it can’t be morally wrong. That’s why it isn’t bad to be a liar.”

1. It isn’t bad to be a liar.
2. Liars are people who lie.
3. A lie is a false statement.
4. Liars are people who make false claims.
5. Everyone makes false claims sometimes.
6. It can’t be morally wrong to make false claims.

\[
\begin{align*}
2 & + 3 \\
\text{A} & \downarrow \\
4 & + 6 \\
\text{C} & \downarrow \\
1 & \\
\end{align*}
\]

The important thing to notice about this argument is that premises 2 and 3 are definitions. Consequently, in order to evaluate the premises in these arguments, it helps
to know how to evaluate definitions. And in order to evaluate definitions, it helps to know a little about what definition are. So let’s start with that.

**Parts of a Definition**

All definitions can be considered to have the form “A T is a G that D.” “T” is the term being defined. “G” is the genus of the definition, or an overarching category that encompasses everything falling under the term while including some things that don’t fall under the term. “D” is the differentia of the definition, the characteristic of things falling under the term that distinguishes (or differentiates) them from other things in the same genus. I’ll call the genus and the differentia, taken together, the “body” of the definition.

A  \text{T} \text{ is a } \text{G that } \text{D.}

So, for example, in the definition “a mother is a parent who is female,” “mother” is the term being defined, “parent” is the genus, “who is female” is the differentia, and “a parent who is female” is the body of the definition.

Let’s practice with the argument under consideration. Premise 2 and 3 are definitions. Can you identify the term defined, the genus, and the differentia in each?

<table>
<thead>
<tr>
<th>Stop and Think</th>
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<tbody>
<tr>
<td>What's the term defined, the genus, and the differentia for “Liars are people who lie”?</td>
</tr>
<tr>
<td>What's the term defined, the genus, and the differentia for “A lie is a false statement”?</td>
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“Liars are people who lie and a lie is just a false statement. Thus, liars are people who make false claims. Everyone makes false claims sometimes, though, so it can't be morally wrong. That’s why it isn't bad to be a liar.”

1. It isn’t bad to be a liar.
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5. Everyone makes false claims sometimes.
6. It can't be morally wrong to make false claims.
In “Liars are people who lie” (premise 2), “liars” is the term being defined. “People” is the genus of the definition because the category “people” includes all liars but includes some non-liars as well. “Who lie” is the differentia of the definition. It serves to distinguish the liars in the genus from the non-liars in the genus.

In “A lie is a false statement” (premise 3), “lie” This is the term being defined. “False” is the differentia of the definition and “statement” is the genus of the definition.

Notice that the parts of the definition can show up in different places. For example, in premise 2, the differentia appeared after the genus.

2. Liars are people who lie.

In premise 3, differentia appeared before the genus.

3. A lie is a false statement.

Evaluating Definitions – Part I

Now that we know what a definition is, and now that we can identify the parts of definition, we’re in a position to consider what makes a definition good or bad. Most of this is common sense. For instance, suppose I define “sister” as “a person who has the same parents as oneself.” This isn’t a good definition of “sister.”

Stop and Think

What’s wrong with the definition “A sister is a person who has the same parents as oneself”? 

The problem with this definition is that a brother is also a person who has the same parents as oneself and so the body of this definition applies to people who aren’t sisters. Remember, it’s the genus’ job to ensure that everything that falls under the term also falls under the body of the definition, and it’s the differentia’s job to ensure that everything falling under the body of the definition also falls under the term. This means
that body of the definition and the term being defined should apply exactly the same things.

We can think of it graphically like this, letting the top line represent everything falling under the body of the definition, and the bottom line representing everything falling under the term:

If the body of the definition applies to more things than the term does, we say that the definition is “too broad.” The definition “A sister is a person who has the same parents as oneself” is too broad because some people who have the same parents as oneself aren’t sisters – they’re brothers! This means that more people fall under the body of the definition than fall under the term. The body “over shoots” the term, so to speak. That’s exactly why it’s too broad for the term being defined.

Let’s take another example. What do you think of the definition “A cousin is the offspring of one’s mother’s sister”?

Stop and Think

What’s wrong with the definition “A cousin is the offspring of one’s mother’s sister”? Is this definition too broad?

If this definition were too broad, then something could fall under the body of the definition without falling under the term. In other words, someone could be the offspring of your mother sister without being your cousin. But this can’t happen. Anyone who’s the child of your mother’s sister will be your cousin. Accordingly, the definition is not too broad.
The definition does, however, suffer from an analogous problem: someone can be your cousin without being the child of your mother's sister. The son of your father's brother, for instance, is also your cousin, and so the body of the definition applies to fewer things than the term does. In such a case, we say that the definition is "too narrow." The definition "A cousin is the offspring of one's mother's sister" is too narrow because some people who are your cousins aren't children of your mother's sister. This means that fewer people fall under the body of the definition than fall under the term. The body "under shoots" the term, so to speak. That's exactly why it's too narrow for the term being defined.

Now, let's consider the definition "A lie is a statement told by a politician."

Stop and Think

What's wrong with the definition "A lie is a statement told by a politician"? Is this definition too broad? Is this definition too narrow?

Because some statements told by politicians aren't lies, this definition is too broad.
And because some lies aren’t told by politicians, the definition is too narrow.

“A lie as a statement told by a politician,” has the great misfortune of being both too broad and too narrow!

It’s too broad because some things fall under the body of the definition without falling under the term. It’s too narrow because some things fall under the term without falling under the body of the definition.

A definition that’s too broad and too narrow is like a very ill-fitting coat that’s too big in the shoulders and too short in the arms.

**Common Misconceptions**

Before we move on, we should be sure to understand what it means, and what it does not mean, for a definition to be too broad or too narrow. We can avoid a common misconception by reconsidering the definition “a mother is a female parent.” Is this definition too narrow? Is it too broad?
Stop and Think

Is “a mother is a female parent” too narrow? Too broad?

Let’s see. Does something fall under the term “Mother” but not under the body “female parent”?

I don’t think so. It seems to me that anyone who’s a mother is a female parent.

This means that the definition is not too narrow.

Let’s see. Does something fall under the body “female parent” but not under the term “Mother”?

I don’t think so. It seems to me that anyone who’s a female parent is a mother.

This means that the definition is not too broad.

We’ve seen that because all mothers are female parents and because all female parents are mothers, the body of this definition exactly “fits” the term defined.

Nevertheless, there’s a natural (although mistaken) temptation to say that the definition “a mother is a female parent” is too narrow because there’s more to being a mother than that. Of course there is more to being a mother than that, but the definition of “mother” isn’t necessarily supposed to tell us what being a mother “amounts to” in this deeper sense. A definition is supposed to reliably guide our application of the term in such a way that we can apply it to everything covered by the term without applying it to anything not covered by the term. It needn’t discuss the most important characteristic of the things falling under the term. In this case, “a mother is a female parent” is supposed to help us decide who, in a room, is a mother and who isn’t, and it seems to do that job just fine. It’s not going to help us write a poem about motherhood, or express the value of mother love, but it isn’t supposed to do that.

Sometimes, of course, we do want our definitions to discuss the most important characteristics of things falling under a term. This is because sometimes advancing and evaluating definitions is closely related to conceptual analysis, the process of trying to understand particularly interesting and tricky ideas, like justice, friendship, or love, by clarifying the meaning of the corresponding words. If a definition of “justice” can illuminate what justice is, in addition to not being broad, narrow, or circular, then so much the better from a conceptual analysis point of view!

As we’ve seen, however, a definition need not point to the most important aspects of things falling under the term, so not all definitions elucidate concepts in this way. Conversely, not all concepts may be amenable to definitional analysis, but may, instead,
be best understood through paradigm cases. Perhaps, for instance, there is no set of properties shared by all and only cases of justice and hence no satisfying definition for the term. Perhaps there are only obvious, or paradigm, cases of justice and injustice, with decisions or actions meriting the description “just” or “unjust” according to the degree to which they resemble the paradigm cases.

The second thing we should remember when evaluating definitions is that not all definitions are supposed to fit the way in which we currently use a term.

So far, we’ve assumed that every definition we’ve seen has been a descriptive definition. Descriptive definitions are supposed to capture the way in which we normally employ a word and so we need to ensure that such definitions are neither too broad (including more things than we would include under the term) nor too narrow (including fewer things than we would include under the term).

But not all definitions are descriptive definitions. Some definitions are stipulative. A stipulative definition doesn’t try to capture the way in which we do use a term, but instead specifies how the author will be using the term, or how we should be using it. Stipulative definitions are common in mathematics and science, but they can appear anywhere. Sometimes they appear in writing that attempts to further a political or social agenda, and in such contexts they can be called “revisionist definitions” because they attempt to revise the way we think and use language. One might, for instance, define mother as “the parent primarily responsible for nurturance,” fully aware that the body of this definition might apply to some men and fully intending it to.

Because stipulative definitions intend to mold, rather than fit the language, to criticize a stipulative definition for being too broad or too narrow would be to misunderstand the purpose of the definition. We can criticize such a definition on the grounds that the social program it advances isn’t desirable, or on the grounds that it doesn’t represent a useful way of thinking, but we can’t criticize a stipulative definition for not accurately reflecting the current use of the term being defined; it doesn’t pretend to try.

With the exception of stipulative definitions, however, which are designed to shrink or stretch the term for certain purposes, a good definition must be neither too broad nor too narrow. Like Baby-bear’s bed in Goldilocks, it should fit just right.

**Evaluating Definitions – Part II**

But is “fitting just right” all a good definition needs? Is a definition good whenever the body of the definition covers all and only the things falling under the term? Let’s answer this question by taking a look at another definition, say “a philosopher is a person who does philosophy.”

**Stop and Think**

Is “a philosopher is a person who does philosophy” too narrow? Too broad?
It seems to me that anyone who does philosophy is a philosopher so anything that falls under the body of the definition falls under the term defined. I don’t think this definition is too broad. Furthermore, it seems to me that anyone who’s a philosopher is a person who does philosophy, so anything that falls under the term falls under the body of the definition. I don’t think that the definition is too narrow.

Because all people who do philosophy are philosophers and all philosophers are people who do philosophy, this definition isn't too narrow or too broad. As far as fit goes, “a philosopher is a person who does philosophy” is a fine definition. But still, something’s wrong with it. In particular, this definition basically defines a word in terms of itself “Philosopher” is defined in terms of “philosophy.”

This prevents the definition from helping anyone to learn or apply the word. We say that definitions that define a word in terms of itself are “circular.” (By the way, what would be wrong with defining a circular definition as a definition that goes in a circle?) The body of a definition mustn’t include the term being defined or a very close synonym of the term being defined, because doing so will strip the definition of any educative or practical power.

So, to sum up, a good definition mustn’t be too broad, too narrow, or circular. If a definition is too broad, too narrow, or circular, then it’s a bad definition.

**Argument 1 Reconsidered**

Now (at last!) we can use what we’ve learned about definitions to evaluate the definitional premises 2 and 3 in the argument we’re studying.

“Liars are people who lie and a lie is just a false statement. Thus, liars are people who make false claims. Everyone makes false claims sometimes, though, so it can’t be morally wrong. That’s why it isn’t bad to be a liar.”

1. It isn’t bad to be a liar.
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\[
\begin{align*}
\text{2} & + \text{3} = 5 \\
A \downarrow & \quad B \downarrow \\
4 & + 6 = 1 \\
\text{C} & \downarrow \\
\end{align*}
\]

Let's assess premise 2, “Liars are people who lie,” first.

Stop and Think

What do you think about “Liars are people who lie”? Is it too broad? Too narrow? Circular?

If the definition “Liars are people who lie” is too broad, then more people fall under the body of the definition, “people who lie,” than fall under the term “liars.” I don’t think this happens. I think that all people who lie are liars (at least when they’re lying). Thus, I wouldn't say this definition is too broad.

If the definition “Liars are people who lie” is too narrow, then fewer people fall under the body of the definition, “people who lie,” than fall under the term “liars.” Put another way, if the definition “Liars are people who lie” is too narrow, more people fall under the term “liars” than under the body “people who lie.” I don’t think this happens. I think that all people who liars are people who lie. Thus, I wouldn't say this definition is too narrow.

But is this definition circular? It certainly is! This definition is defining a word (“liar”) in terms of itself (“lying”), so it's circular. Premise 2 is bad because it’s a circular definition.

“Liars are people who lie and a lie is just a false statement. Thus, liars are people who make false claims. Everyone makes false claims sometimes, though, so it can’t be morally wrong. That’s why it isn't bad to be a liar.”

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5. Everyone makes false claims sometimes.
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Now what about premise 3, “A lie is a false statement”?  

Stop and Think  
What do you think about the definition “A lie is a false statement”? Is it too broad? Too narrow? Circular?

If the definition “A lie is a false statement” is too broad, then things fall under the body of the definition, “false statement,” than fall under the term “lie.” Can this happen? Sure! Some false statements aren’t lies. If my watch stopped and you asked me for the time, I might say that it’s 2:15 when it’s actually 2:30. And if I weren’t aware that my watch had stopped, and consequently thought that it was 2:15, I’d be saying something false but I wouldn’t exactly be lying to you. I’d simply be mistaken.

If the definition “A lie is a false statement” is too narrow, then things fall under the body of the definition, “false statement,” than fall under the term “lie.” Put another way, if the definition “A lie is a false statement” is too narrow, more things fall under the term “lie” than under the body “false statement.” I don’t think this happens. I think that lies are false statement. If someone tells us the truth, that person isn’t lying. Thus, I wouldn’t say this definition is too narrow.

Is this definition circular? No. I don’t see how the term “lie” appears in the body of the definition.

Consequently, premise 2 is bad because it’s too broad, even though it isn’t narrow or circular.

“Liars are people who lie and a lie is just a false statement. Thus, liars are people who make false claims. Everyone makes false claims sometimes, though, so it can’t be morally wrong. That’s why it isn’t bad to be a liar.”

1. It isn’t bad to be a liar.  
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5. Everyone makes false claims sometimes.  
6. It can’t be morally wrong to make false claims
Evaluating Inferences by Supplying Missing Premises

We’ve seen that premises 2 and 3 in this argument are bad. That’s enough to tell us that the argument as a whole is bad. But it still has something to teach us.

Let’s take a look at the inferences.

Stop and Think

What do you think about inference C?
What do you think about inference A?
What do you think about inference B?

“Liars are people who lie and a lie is just a false statement. Thus, liars are people who make false claims. Everyone makes false claims sometimes, though, so it can’t be morally wrong. That’s why it isn’t bad to be a liar.”

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Looking at inference C, it seems to me that if Bob believes that liars are people who make false claims (idea 4) and if Bob believes that it isn’t bad to make false claims (idea 6) then Bob will believe that it isn’t bad to be a liar (idea 1). This means that inference C is fine.

Turning to inference A, it seems to me that if Bob believes that liars are people who lie (idea 2) and if Bob believes that a lie is a false statement (idea 3), then Bob will believe that liars are people who make false claims (idea 4). This means that inference A is fine.
Now, what about inference B? Could Bob believe that everyone makes false claims sometimes (idea 5) and without believing that it’s morally okay to do so (idea 6)? I think so! Inference B looks weak.

“Liars are people who lie and a lie is just a false statement. Thus, liars are people who make false claims. Everyone makes false claims sometimes, though, so it can’t be morally wrong. That’s why it isn’t bad to be a liar.”

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\[
\begin{align*}
2 \otimes & + 3 \otimes \\
\downarrow & \otimes \\
4 & + 5 \\
\downarrow & \otimes \\
\end{align*}
\]

So far, we have two methods that allow us to see that inference B is bad.

Using the Bob Method, as we just did, we can see that Bob could believe that everyone makes false claims sometimes (idea 5) and still not believe that it’s morally okay to do so (idea 6); Bob might think that people do many morally wrong things on a regular basis.

Using the Counterexample Method, we can find a structurally similar inference with a true premise and a false conclusion. How about replacing “making false claims” with “doing bad things?” Although it’s probably true that everyone does bad things sometimes, it certainly doesn’t follow that it can’t be morally wrong to do bad things!

There’s another way to evaluate inferences, though, and it’s useful to know. It’s called “the Missing Premise Method” and it has two steps. First, we find the missing premise necessary to perfect the inference we’re evaluating. Then we evaluate the inference by evaluating the premise we added.

We’re probably somewhat familiar with the first step, adding missing premises, because we’ve already been doing it when constructing arguments of our own. Remember how we learned to fix an inference in our own arguments by adding the dependent reason we needed to plug the gap? Finding missing premises in an argument we’re evaluating is essentially the same thing, except we assign the missing premise a letter, instead of a number, to indicate that it wasn’t explicitly stated in the passage. For the sake of consistency, we’ll give the missing premise the same letter, in small case, as the inference we’re evaluating.
There are a few ways to go about finding a missing premise.

First, we can look at the inference from idea R (the reason) to idea C (the conclusion), we ask ourselves “What must someone believe, or be assuming, in order to find this inference convincing, in order to move naturally from R to C?” The answer to this question is the missing premise.

Second, looking at the inference from idea R to idea C, we can ask ourselves “How could someone believe R and not believe C?” Then we take the opposite of this idea as the missing premise, to block off any avenue of escape.

And third, we can identify the most important concepts not shared by ideas R and C, and construct a premise that combines those concepts. This is exactly like fabricating a missing puzzle piece on the basis of the surrounding pieces.

Let’s use all three techniques to find the missing premise that would fix inference B.

“Liars are people who lie and a lie is just a false statement. Thus, liars are people who make false claims. Everyone makes false claims sometimes, though, so it can’t be morally wrong. That’s why it isn’t bad to be a liar.”

1. It isn’t bad to be a liar.
2. Liars are people who lie.
3. A lie is a false statement.
4. Liars are people who make false claims.
5. Everyone makes false claims sometimes.
6. It can’t be morally wrong to make false claims.

First, we’ll wonder what someone must be assuming in order to conclude that it can’t be morally wrong to make false claims (idea 6) from the observation that everyone makes false claims sometimes (idea 5). It seems to me that such a person must be assuming that something everybody does sometimes can’t be morally wrong, and that will be our missing premise “b.”

Second, we’ll wonder what someone is thinking if he refuses to conclude that it’s okay to make false claims (idea 6) from the observation that everyone does it sometimes (idea 5). Here we can remember how Bob refused to make this inference. Bob was thinking that people do many morally wrong things sometimes. In order to prevent Bob from thinking this, and thereby block his avenue of escape from 5 to 6, we can add the
opposite of this idea as a missing premise, letting "b" be "Nothing that everyone does sometimes can be morally wrong."

Third, we can notice that the idea “making false claims” is common between the reason ("Everyone makes false claims sometimes") and the conclusion (“It can’t be morally wrong to make false claims”). This means that our missing premise won’t contain that idea. The most important idea in the reason but not in the conclusion is “Everybody does something.” The most important idea in the conclusion but not in the reason is “It’s not morally wrong.” Putting them together, we get our missing premise ‘b,’ “If everybody does something then it can’t be wrong.”

Since all three ways of finding the missing premise gave us the same idea (although stated in somewhat different ways) it doesn’t matter which method we use.

Including this missing premise in our list of ideas and diagram, we get the following:

“Liars are people who lie and a lie is just a false statement. Thus, liars are people who make false claims. Everyone makes false claims sometimes, though, so it can’t be morally wrong. That’s why it isn’t bad to be a liar.”

1. It isn’t bad to be a liar.
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3. A lie is a false statement.
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5. Everyone makes false claims sometimes.
6. It can’t be morally wrong to make false claims.
b. If everybody does something then it can’t be wrong.

There are a few things to notice about missing premises.

First, missing premises will always be dependent reasons. This is because our justification for adding a missing premise to an argument is that this missing premise is necessary in order to flesh out an existing inference. Thus, any missing premise has to work with an explicit premise or subconclusion.

Second, the missing premise must plug the gap between the reason and the conclusion of the inference. In this case, for example, if it’s possible to believe ‘5’ and ‘b’ without believing 6, then ‘b’ is the wrong missing premise.
Third, it’s important not to confuse the missing premise necessary to move from a reason to a conclusion with what someone must assume in order to believe the reason in the first place. In this case, for instance, in order to believe idea 5, one would need to believe a number of other things, including “everybody makes claims,” “nobody’s perfect,” and so on. None of these ideas are the missing premise we need, however, because although they must be assumed in order to believe ‘5,’ they are not what must be assumed in order to move from ‘5’ to ‘6.’

Returning to our diagram, we can see that with the addition of the missing premise, inference B is just fine! Anyone who believes ideas 5 and ‘b’ will be forced to believe idea 6 as well.

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b. If everybody does something then it can’t be wrong.

At this point, you may have a couple of very good questions. First, what gives us the right to add premises to someone else’s argument? Aren’t we supposed to analyze and evaluate the argument as it is? Second, how can fixing an inference by filling in a missing premise possibly help us to evaluate the inference?

First of all, we have the right to add missing premises because, in so doing, we’re simply attributing to the author something that the author must be assuming already, whether she knows it or not. In the process of drawing the inference, the author is committing herself to the missing premise. We’re just making that commitment explicit so we really aren’t changing the argument in any significant way.

Second, adding a missing premise to someone else’s argument allows us to evaluate the inference because adding the missing premise fills the inferential “gap” in the original argument. We can then measure how big the gap was by assessing the plausibility of the premise required to fill it. It’s exactly like using caulk to fill a gap. If we didn’t need to use much caulk, then the gap was small. If we needed to use a lot of

Missing premise ‘b’ plugs the gap between 5 and 6 because if Bob believes 5 and ‘b’ then he’ll be forced to accept 6.
caulk, the gap was large. Similarly, if the missing premise we’re forced to add is reasonable, then the inference was strong. If the missing premise we’re forced to add is outrageous, then the inference was weak.

Alternatively, we can compare adding missing premises to an argument to sweeping all the dirt in a room into one little pile. Doing that doesn’t make the floor, as a whole, any cleaner than it was before. It simply allows us to determine how dirty the floor is by measuring the height of the dust pile. If the dust pile is small, then there isn’t much dirt on the floor and so it’s pretty clean. If the dust pile is huge, then there is a lot of dirt on the floor and so it’s pretty dirty. Similarly, if the missing premise we’re forced to add is okay then the inference was pretty good to begin with, but if the premise is not something that we’re apt to believe then the inference was always rather bad.

Now it’s probably easier to see why the missing premise method for evaluating inferences has two separate steps. First, we need to find the missing premise which closes the gap between the reason and the conclusion. Then we need to evaluate the missing premise. If the missing premise is plausible then the inference is strong, and if the missing premise is implausible then the inference is weak.

And there are a couple of things to bear in mind when we evaluate the missing premise, though. For one thing, we should make sure to evaluate the missing premise on its own terms just as we would evaluate any other premise. In particular, we shouldn’t evaluate the missing premise according to the extent to which it fills the gap in the inference. If we’ve chosen our missing premise correctly, it will fill the gap, but that doesn’t make it good. For another thing, we should remember that the missing premise is just a device for isolating and identifying the problems in the original inference, and so it’s perfectly okay to evaluate inferences by evaluating missing premises even though it isn’t okay to evaluate inferences by evaluating the original, explicit, premises.

So let’s use the missing premise method to evaluate inference B in the argument we’re considering. We’ve seen that we need to add “If everybody does something then it can’t be wrong” in order to plug the hole in inference B.

“Liars are people who lie and a lie is just a false statement. Thus, liars are people who make false claims. Everyone makes false claims sometimes, though, so it can’t be morally wrong. That’s why it isn’t bad to be a liar.”

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5. Everyone makes false claims sometimes.
6. It can’t be morally wrong to make false claims.
b. If everybody does something then it can’t be wrong.
Now we need to evaluate inference B by inspecting that missing premise. In particular, is it true that if everybody does something then it can’t be wrong? I doubt it. Surely murder would be wrong even if everyone did it. Since the missing premise that inference B needs to be good is a very bad premise, B is a very bad inference.

“Liars are people who lie and a lie is just a false statement. Thus, liars are people who make false claims. Everyone makes false claims sometimes, though, so it can’t be morally wrong. That’s why it isn’t bad to be a liar.”

1. It isn’t bad to be a liar.
2. Liars are people who lie.
3. A lie is a false statement.
4. Liars are people who make false claims.
5. Everyone makes false claims sometimes.
6. It can’t be morally wrong to make false claims.
b. If everybody does something then it can’t be wrong.

Just as it should, the Missing Premise Method gives us the same result as the Bob and Counterexample Methods. The advantage to the Missing Premise Method is that it makes the problem with the inference visible, so to speak. We can see exactly what the inference is assuming, and that allows us to better understand why the inference is weak.

Recognizing this can help us to understand why adding a missing premise doesn’t affect the overall worth of the argument. If the inference was bad before we found the missing premise, it’s bad afterwards. If the inference was good before we found the missing premise, it’s good afterwards. Adding the missing premise just helps us to see why the inference is bad or good.
**Argument 2**

We’ve covered quite a bit of material so far! Let’s practice what we’ve learned by taking a look at the following argument and diagram.

“Lies are falsehoods which are intentionally told with the objective of making someone unhappy. This means that the purpose of a lie is to produce unhappiness, which in turn means that lies are morally wrong. Only things that are morally wrong should be illegal, though, which is why lying should be illegal.”

1. Lying should be illegal.
2. Lies are falsehoods which are intentionally told with the objective of making someone unhappy.
3. The purpose of a lie is to produce unhappiness.
4. Lies are morally wrong.
5. Only things that are morally wrong should be illegal.

A → 3
B → 4 + 5
C ↓ 1

Premise 2 is a definition: “Lies are falsehoods which are intentionally told with the objective of making someone unhappy.” What do you think of it?

**Stop and Think**

Is the definition “Lies are falsehoods which are intentionally told with the objective of making someone unhappy” circular? Too broad? Too narrow?

Because I don’t see “lie” or a close synonym in the body of the definition, I don’t think that this definition is circular. Because anything that’s a falsehood intentionally told with the objective of making someone unhappy is also a lie, I don’t think that the body of the definition is too narrow. However, because some lies aren’t told with the objective making someone unhappy, the body of the definition is too narrow. Consequently, this is a bad premise.

“Lies are falsehoods which are intentionally told with the objective of making someone unhappy. This means that the purpose of a lie is to produce unhappiness, which in turn means that lies are morally wrong. Only things that are morally wrong should be illegal, though, which is why lying should be illegal.”

1. Lying should be illegal.
2. Lies are falsehoods which are intentionally told with the objective of making someone unhappy.
3. The purpose of a lie is to produce unhappiness.
4. Lies are morally wrong.
5. Only things that are morally wrong should be illegal.

\[
\begin{array}{c}
2 \odot \\
A \downarrow \\
3 \\
B \downarrow \\
\hline
4 & + & 5 \\
\hline
C \downarrow \\
1 \\
\end{array}
\]

The fact that premise 2 is bad is enough to defeat the argument, but let’s take a look at inference B anyway, just for practice, and evaluate it using the Missing Premise Method.

**Stop and Think**

What missing premise is needed to plug the gap between idea 3 and idea 4? Is this missing premise acceptable?

"Lies are falsehoods which are intentionally told with the objective of making someone unhappy. This means that the purpose of a lie is to produce unhappiness, which in turn means that lies are morally wrong. Only things that are morally wrong should be illegal, though, which is why lying should be illegal."

1. Lying should be illegal.
2. Lies are falsehoods which are intentionally told with the objective of making someone unhappy.
3. The purpose of a lie is to produce unhappiness.
4. Lies are morally wrong.
5. Only things that are morally wrong should be illegal.

\[
\begin{array}{c}
2 \odot \\
A \downarrow \\
3 \\
\hline
B \downarrow \\
\hline
4 & + & 5 \\
\hline
C \downarrow \\
1 \\
\end{array}
\]

The first thing we need to do is identify the missing premise, “b,” that’s necessary to plug the gap between 3 and 4.
What must someone be assuming in order to move from idea 3, the claim that the purpose of a lie is to produce unhappiness, to idea 4, the claim that lies are morally wrong? To see this, let’s use the puzzle piece method, identifying concept that’s common to ideas 3 and 4 and then constructing the missing premise out of the left-over concepts.

Ideas 3 and 4 both talk about lies, so the left-over notion from 3 is “the purpose is to produce unhappiness” and the left-over notion from 4 is “are morally wrong.” Putting these notions together, we get something like “Things that take as their purpose the production of unhappiness are morally wrong.” That’s the missing premise needed to repair inference B.

“But lies are falsehoods which are intentionally told with the objective of making someone unhappy. This means that the purpose of a lie is to produce unhappiness, which in turn means that lies are morally wrong. Only things that are morally wrong should be illegal, though, which is why lying should be illegal.”

1. Lying should be illegal.
2. Lies are falsehoods which are intentionally told with the objective of making someone unhappy.
3. The purpose of a lie is to produce unhappiness.
4. Lies are morally wrong.
5. Only things that are morally wrong should be illegal.

b. Things that take as their purpose the production of unhappiness are morally wrong.

Now that we’ve found the missing premise we can evaluate inference B by assessing ‘b.’ What do you think of the missing premise? Is it true that things that take as their purpose the production of unhappiness are morally wrong?

To me, it seems reasonable to assume that things taking as their purpose the production of unhappiness are morally wrong, so I’d say that inference B is probably okay.

“But lies are falsehoods which are intentionally told with the objective of making someone unhappy. This means that the purpose of a lie is to produce unhappiness, which in turn means that lies are morally wrong. Only things that are morally wrong should be illegal, though, which is why lying should be illegal.”
1. Lying should be illegal.
2. Lies are falsehoods which are intentionally told with the objective of making someone unhappy.
3. The purpose of a lie is to produce unhappiness.
4. Lies are morally wrong.
5. Only things that are morally wrong should be illegal.
b. Things that take as their purpose the production of unhappiness are morally wrong.

$$\begin{align*}
2 & \lor \\
A \downarrow & + \\
3 & + b \lor \\
B \downarrow \lor & \leftarrow \\
4 & + \\
5 & \\
C \downarrow & \lor \\
1 & 
\end{align*}$$

**Argument 3**

**Missing Definitional Premises**

So far we’ve seen how to evaluate definitional premises and how to evaluate inferences by finding and evaluating missing premises. Sometimes we’ll need to do both things at the same time because sometimes we’ll need to evaluate an inference by finding and evaluating a missing premise that just happens to be a definition. This is often the case when an undefined, but intuitively important, term appears in the conclusion of the inference but not in the supporting reason, or vice versa.

For example, let’s consider the following, diagrammed, argument, focusing on inference A.

“There is intelligent extra-terrestrial life in the universe. The farmer is obviously sincere in his report of being abducted by aliens and so he isn’t lying when he claims to have been abducted by aliens. This proves that aliens really exist.”

1. There is intelligent extra-terrestrial life in the universe.
2. The farmer is obviously sincere in his report of being abducted by aliens.
3. He isn’t lying when he claims to have been abducted by aliens.

$$\begin{align*}
2 & \lor \\
A \downarrow & \\
3 & \\
B \downarrow & \\
1 & 
\end{align*}$$
Stop and Think

What important term appears in idea 2 but not in idea 3, or in idea 3 but not in idea 2?
What definition of that term is the missing premise in inference A?
Is this a good or bad definition of the term?

It looks to me like “lying,” which appears in idea 3 but not in idea 2, is pretty important. The chances are good, then, that the missing premise needed to tighten inference A is a definition of “lying.” If someone were to concluded that the farmer isn’t lying (idea 3) from the fact that he’s sincere (idea 2), she must be presupposing a definition like “A lie is an insincere statement.” This would nicely plug the gap between 2 and 3, so this must be our missing definitional premise.

“There is intelligent extra-terrestrial life in the universe. The farmer is obviously sincere in his report of being abducted by aliens and so he isn’t lying when he claims to have been abducted by aliens. This proves that aliens really exist.”

1. There is intelligent extra-terrestrial life in the universe.
2. The farmer is obviously sincere in his report of being abducted by aliens.
3. He isn’t lying when he claims to have been abducted by aliens.

a. A lie is an insincere statement.

\[
\frac{2 + a}{A \downarrow} \\
\frac{3}{B \downarrow} \\
\frac{1}{1}
\]

But now, what about that premise? Is “a” a good definition of lying? It seems to me that all insincere statements are lies, so I wouldn't say that the definition is too broad. I think that all lies are insincere statements, so I don't think the definition is too narrow. There is a certain closeness between "insincerity" and "lie," but I don't think they're quite close enough to make this definition circular. Consequently, it looks to me like this definition is fine. Since an insincere statement is one that the speaker doesn't really mean, "a lie is an insincere statement," might not be a bad definition of the term. This means that missing premise ‘a’ is acceptable and so inference A is okay.

“There is intelligent extra-terrestrial life in the universe. The farmer is obviously sincere in his report of being abducted by aliens and so he isn’t lying when he claims to have been abducted by aliens. This proves that aliens really exist.”

1. There is intelligent extra-terrestrial life in the universe.
2. The farmer is obviously sincere in his report of being abducted by aliens.
3. He isn’t lying when he claims to have been abducted by aliens.

a. A lie is an insincere statement.
Now let’s take a look at inference B and evaluate that inference using the missing premise method.

“There is intelligent extra-terrestrial life in the universe. The farmer is obviously sincere in his report of being abducted by aliens and so he isn’t lying when he claims to have been abducted by aliens. This proves that aliens really exist.”

1. There is intelligent extra-terrestrial life in the universe.
2. The farmer is obviously sincere in his report of being abducted by aliens.
3. He isn’t lying when he claims to have been abducted by aliens.
   a. A lie is an insincere statement.

Stop and Think
What missing premise is needed to plug the gap between idea 3 and idea 1?
(Hint: The missing premise probably won’t be a definition here.)

So, what missing premise is necessary to plug the gap between idea 3, the claim that the farmer isn’t lying when he claims to have been abducted by aliens, and idea 1, the claim that there is extra-terrestrial life in the universe? This might be a little difficult to see, but ask yourself, when someone says ‘He isn’t lying when he says he was abducted so there must be intelligent extra-terrestrial life’ what is that person assuming?

Someone who says ‘He isn’t lying when he says he was abducted so there must be intelligent extra-terrestrial life’ is probably thinking that if the farmer isn’t lying when he says he was abducted then he must really have been abducted, thereby proving that there is extra-terrestrial life.

In other words, this person is assuming that if a report isn’t a lie then it must be the truth, so let’s add that as our missing premise.
“There is intelligent extra-terrestrial life in the universe. The farmer is obviously sincere in his report of being abducted by aliens and so he isn’t lying when he claims to have been abducted by aliens. This proves that aliens really exist.”

1. There is intelligent extra-terrestrial life in the universe.
2. The farmer is obviously sincere in his report of being abducted by aliens.
3. He isn’t lying when he claims to have been abducted by aliens.
   a. A lie is an insincere statement.
   b. If a report isn’t a lie then it must be the truth.

\[ \begin{align*}
2 + a & \rightarrow A \\
      & \downarrow \circledast
\end{align*} \]

\[ \begin{align*}
3 + b & \rightarrow B \\
      & \downarrow \circledast
\end{align*} \]

Now we can evaluate inference B by assessing this missing premise.

Stop and Think

Is this missing premise “If a report isn’t a lie then it must be the truth” acceptable? (Hint: Remember how “if… then…” sentences are evaluated.)

Because the missing premise is an “if…then…” sentence, we should ask ourselves “Can the front part be true and the back part false at the same time?” Can a report not be a lie, but be untrue anyway? I think so. I could be honestly mistaken when I tell you the time, for example. In this case, I wouldn’t be lying, but I’d be saying a falsehood anyway. Thus, missing premise ‘b’ is false, and so inference B is weak.

“There is intelligent extra-terrestrial life in the universe. The farmer is obviously sincere in his report of being abducted by aliens and so he isn’t lying when he claims to have been abducted by aliens. This proves that aliens really exist.”

1. There is intelligent extra-terrestrial life in the universe.
2. The farmer is obviously sincere in his report of being abducted by aliens.
3. He isn’t lying when he claims to have been abducted by aliens.
   a. A lie is an insincere statement.
   b. If a report isn’t a lie then it must be the truth.
**Argument 4**

Let’s do another practice problem. Take a look at the following argument and diagram.

“Professor Simpson lied in the letter of recommendation she wrote for Bill because she didn’t tell the whole truth. After all, she wrote ‘Bill is a hard worker,’ but that isn’t the whole truth. In point of fact, Bill isn’t very smart.”

1. Professor Simpson lied the letter of recommendation she wrote for Bill.
2. Professor Simpson didn’t tell the whole truth.
3. Professor Simpson wrote “Bill is a hard worker.”
4. “Bill is a hard worker,” isn’t the whole truth.
5. Bill isn’t very smart.

Let’s use the missing premise method to evaluate inference C.

**Stop and Think**

What missing premise is needed to plug the gap between idea 2 and idea 1?
Is this missing premise acceptable?

I think there a couple of choice for the missing premise here. We could choose the definitional premise “Lies are statements that aren’t the whole truth,” or the conditional claim “If a statement isn’t the whole truth then it’s a lie.” Which choice is preferable?

Well, “Lies are statements that aren’t the whole truth,” as a definition of “Lie” makes two claims: 1) if a statement is a lie then it isn’t the whole truth, and 2) if a statement isn’t the whole truth then it’s a lie. “If a statement isn’t the whole truth then it’s a lie,” on the other hand, makes only the second of these two claims. This means that “Lies are statements that aren’t the whole truth” is a stronger assertion than “If a statement isn’t the whole truth then it’s a lie;” it simply claims more.

As a general rule, we should take the weakest claim necessary to plug the gap because the idea is to repair the inference by assuming as little as possible, so let’s go with “If a statement isn’t the whole truth then it’s a lie.”
"Professor Simpson lied in the letter of recommendation she wrote for Bill because she didn't tell the whole truth. After all, she wrote 'Bill is a hard worker,' but that isn't the whole truth. In point of fact, Bill isn't very smart."

1. Professor Simpson lied the letter of recommendation she wrote for Bill.
2. Professor Simpson didn't tell the whole truth.
3. Professor Simpson wrote "Bill is a hard worker."
4. "Bill is a hard worker," isn't the whole truth.
5. Bill isn't very smart.

\[ \text{c. If a statement isn't the whole truth then it's a lie.} \]

\[ \begin{align*}
 A \downarrow & \\
 3 & + 4 \\
 B \downarrow & \\
 2 & + c \\
 C \downarrow & \\
 1 &
\end{align*} \]

Now we need to evaluate inference C by assessing the missing premise. Is it true that if a statement isn't the whole truth then it's a lie? I don't think so. It seems to me that no statement can tell the whole truth because there's always more truth than we can tell. Thus, if this missing premise were true then everything would be a lie. But that's crazy. There's a big difference between intentionally saying something false and intentionally not saying something true. Only the first sort of case is a lie, it seems to me, so I'll say that inference C is bad.

"Professor Simpson lied in the letter of recommendation she wrote for Bill because she didn't tell the whole truth. After all, she wrote 'Bill is a hard worker,' but that isn't the whole truth. In point of fact, Bill isn't very smart."

1. Professor Simpson lied the letter of recommendation she wrote for Bill.
2. Professor Simpson didn't tell the whole truth.
3. Professor Simpson wrote "Bill is a hard worker."
4. "Bill is a hard worker," isn't the whole truth.
5. Bill isn't very smart.

\[ \text{c. If a statement isn't the whole truth then it's a lie.} \]

\[ \begin{align*}
 A \downarrow & \\
 3 & + 4 \\
 B \downarrow & \\
 2 & + c \bigotimes \\
 C \downarrow & \\
 1 &
\end{align*} \]
Argument 5

Now that we know about missing definitional premises, we’re in a position to understand and spot a rather subtle error in reasoning. Consider the following argument:

“We shouldn’t like some people more than we like others. If you like some people more than others then you must be making judgments between them which means that you’re being judgmental. But it’s wrong be judgmental.”

1. We shouldn’t like some people more than we like others.
2. If you like some people more than others then you must be making judgments between them.
3. If you like some people more than others, you’re being judgmental.
4. It’s wrong be judgmental

\[ \begin{align*}
   2 & \quad A \quad \downarrow \\
   3 & + \\
   4 & \\
   1 & B \quad \downarrow
\end{align*} \]

Something’s fishy about that argument. Smell it? The problem, I think, lies in what “judgmental” is taken to mean. We can see this by focusing on inference A and identifying the definition of “judgmental” that it assumes.

“We shouldn’t like some people more than we like others. If you like some people more than others then you must be making judgments between them which means that you’re being judgmental. But it’s wrong be judgmental.”

1. We shouldn’t like some people more than we like others.
2. If you like some people more than others then you must be making judgments between them.
3. If you like some people more than others, you’re being judgmental.
4. It’s wrong be judgmental

\[ \begin{align*}
   a & \quad \text{To be judgmental is to…} \\
   2 & + \\
   A \quad \downarrow \\
   3 & + \\
   4 & \\
   1 & B \quad \downarrow
\end{align*} \]

Stop and Think

How would you complete the definition of “judgmental”?
In order to infer 3 from 2, we need to say that to be judgmental is to make any judgment at all.

“We shouldn’t like some people more than we like others. If you like some people more than others then you must be making judgments between them which means that you’re being judgmental. But it’s wrong be judgmental.”

1. We shouldn’t like some people more than we like others.
2. If you like some people more than others then you must be making judgments between them.
3. If you like some people more than others, you’re being judgmental.
4. It’s wrong be judgmental
   a. To be judgmental is to make any judgment at all

\[ \begin{align*}
2 & + a \\
A & \downarrow \\
3 & + 4 \\
B & \downarrow \\
1 & \end{align*} \]

Putting aside the issues of circularity, this definition of “judgmental” would make premise 4 false. Why, after all, should we assume that it’s wrong to be judgmental in that sense?

“We shouldn’t like some people more than we like others. If you like some people more than others then you must be making judgments between them which means that you’re being judgmental. But it’s wrong be judgmental.”

1. We shouldn’t like some people more than we like others.
2. If you like some people more than others then you must be making judgments between them.
3. If you like some people more than others, you’re being judgmental.
4. It’s wrong be judgmental
   a. To be judgmental is to make any judgment at all

\[ \begin{align*}
2 & + a \\
A & \downarrow \\
3 & + 4 \times \\
B & \downarrow \\
1 & \end{align*} \]

In order for 4 to be true, we’d need to say that being judgmental is making harsh and relatively inflexible judgments without sufficient evidence. We can represent this in the diagram as a missing premise supporting 4.
1. We shouldn’t like some people more than we like others.
2. If you like some people more than others then you must be making judgments between them.
3. If you like some people more than others, you’re being judgmental.
4. It’s wrong be judgmental
b. To be judgmental is to make firm and negative judgments without sufficient evidence.

\[
\begin{array}{ccc}
2 & b \\
A \downarrow & \downarrow \\
3 & + & 4 \\
B \downarrow \\
1
\end{array}
\]

The good news is that this understanding of “judgmental” would make 4 true. The bad news is that it would make the inference from 2 to 3 bad.

1. We shouldn’t like some people more than we like others.
2. If you like some people more than others then you must be making judgments between them.
3. If you like some people more than others, you’re being judgmental.
4. It’s wrong be judgmental
b. To be judgmental is to make firm and negative judgments without sufficient evidence.

\[
\begin{array}{ccc}
2 & b \\
A \downarrow & \downarrow \\
3 & + & 4 \\
B \downarrow \\
1
\end{array}
\]

In short, this argument depends upon switching between two different meanings of the term “judgmental.” For 3 to be supported, we need to think of “judgmental” as “making any judgment at all.” For 4 to be reasonable, we need to think of “judgmental” as making poorly informed negative judgments. We can say that this argument “equivocates” on the meaning of “judgmental,” accusing the argument of “equivocation.”

In general, an argument is guilty of equivocation if any attempt to define a term in the argument in a way that makes one part of the argument good must make another part of the argument bad. In order to see each part of the argument as a good, we need to switch between different meanings of the term. Equivocation is impermissible because although an argument is free to take its terms to mean whatever it pleases, it needs to stick with one meaning for each term throughout.

Let’s see another example of this.
**Argument 6**

Consider the following argument, along with its diagram.

“Everyone who applies should be accepted into medical school. It’s wrong to be elitist and refusing to accept everyone into medical school is being elitist.”

1. Everyone who applies should be accepted into medical school.
2. It’s wrong to be elitist.
3. Refusing to accept everyone into medical school is being elitist.

\[
\begin{array}{cc}
\text{2} & \text{3} \\
\downarrow & \\
\text{A} & \\
\downarrow & \\
\text{1} & \\
\end{array}
\]

The key term here is “elitist.” How is the argument using the term?

**Stop and Think**

What does “elitist” have to mean in order for 2 to be true?
Does this reading allow 3 to be true as well?

It seems to me that in order to 2 to be true, “elitist” has to mean something like “the tendency to unfairly grant special privileges to a group identified as superior in some way.” But if that’s what “elitist” means, I doubt that 3 is true. Is it unfair to restrict admission to medical school to those individuals who are academically gifted? In short, if “elitist” is understood in a way that makes 2 true, it’s understood in a way that makes 3 false.

“Everyone who applies should be accepted into medical school. It’s wrong to be elitist and refusing to accept everyone into medical school is being elitist.”

1. Everyone who applies should be accepted into medical school.
2. It’s wrong to be elitist.
3. Refusing to accept everyone into medical school is being elitist.

\[
\begin{array}{cc}
\text{2} & \text{3} \\
\downarrow & \\
\text{A} & \\
\downarrow & \\
\text{1} & \\
\end{array}
\]

Stop and Think

What does “elitist” have to mean in order for 3 to be true?
Does this reading allow 2 to be true as well?

Where “elitist” means “the tendency to unfairly grant special privileges to a group identified as superior in some way.”
It seems to me that in order to 3 to be true, “elitist” has to mean something like “the tendency to grant special privileges to a group identified as superior in some way when the source of superiority is reasonably connected to the privileges conferred.” But if that’s what “elitist” means, I doubt that 2 is true. Is it always wrong to be elitist in this sense? In short, if “elitist” is understood in a way that makes 3 true, it’s understood in a way that makes 2 false.

“Everyone who applies should be accepted into medical school. It’s wrong to be elitist and refusing to accept everyone into medical school is being elitist.”

1. Everyone who applies should be accepted into medical school.
2. It’s wrong to be elitist.
3. Refusing to accept everyone into medical school is being elitist.

Because any attempt to define “elitist” in a way that makes one of the premises true will make the other premise false, this argument switches back and forth between different meanings of the term. It is guilty of equivocation.

**Hume’s Problem of Induction**

Now that we know about missing premises, we’re in a position to understand a fairly sophisticated philosophical topic – Hume’s Problem of Induction. Furthermore, examining Hume’s Problem of Induction will allow us to practice the missing premise technique, so let’s take a look at it.

Essentially, induction is the principle of inference that takes us from a number of particular statements to a general claim. “Every crow I’ve ever seen has been black. Therefore all crows are black,” for example, is an inductive inference.

Induction can also take us from particular observations to a prediction about the future that’s founded, more or less, upon the general claim inductively inferred from the particulars, as in “Every crow I’ve ever seen has been black. Therefore the next crow I see will be black.”

If we wish, we can represent a general inductive inference as follows:
Inductive inferences are incredibly important because they lie at the heart of science and, quite generally, at the heart of our knowledge about the world. We know that all animals need food because every animal we’ve ever seen has needed food. We know that the sun will rise tomorrow because it always has risen before. Without induction, we would be unable to function effectively within our surroundings.

And the interesting thing about induction is that it isn’t perfect. The premise of an inductive inference could be true and the conclusion false at the same time, and not just because the observations haven’t been sufficiently numerous or representative. Rather, induction depends upon an underlying assumption about reality. Can you see it?
At a very fundamental level, induction needs to assume that the unobserved members of a class will be like the observed members of that class, or (equivalently) that the future will be relevantly similar to the past.

\[
\begin{align*}
\text{Every observed instance of category C has property P.} & \quad + \quad \text{The unobserved members of C will be like the observed members of C.} \\
& \quad \text{or} \quad \text{The future will be relevantly similar to the past.} \\
\downarrow \\
\text{All instances of category C have property P.} \\
& \quad \text{or} \quad \text{The next observed instance of category C will have property P.}
\end{align*}
\]

Upon reflection, it makes sense that induction needs to assume this. To look at it from the point of view of science, a discipline built upon the careful use of induction, unless we took for granted that the laws of nature will remain stable, it wouldn’t make any sense to think that the outcome of one experiment would have any bearing at all on what we could reasonably expect from another experiment.

But is it true that the unobserved members of a class will be like the observed members of the class? Is it true that the future will be relevantly similar to the past? Why, in short, should we trust induction?

Perhaps the most natural response to the question “Why should we trust induction?” is “We can trust induction because it’s worked well for us so far.”

In short, there’s a natural tendency to argue for induction as follows:

“Induction is a generally reliable form of inference because previous instances of induction have worked well for us. In fact, induction does allow us to correctly generalize about unobserved members of a class and to level accurate predictions.”

1. Induction is a generally reliable form of inference.
2. Previous instances of induction have worked well for us.

\[
\begin{align*}
2 \\
\text{A} & \downarrow \\
1
\end{align*}
\]

But will this work? What missing premise do we need to plug the gap between ideas 2 and 1?
The missing premise necessary to perfect inference A is something like “If previous instances of induction have worked well for us then induction is a generally reliable form of inference.”

“Induction is a generally reliable form of inference because previous instances of induction have worked well for us. In fact, induction does allow us to correctly generalize about unobserved members of a class and to level accurate predictions.”

1. Induction is a generally reliable form of inference.
2. Previous instances of induction have worked well for us.
   a. If previous instances of induction have worked well for us then induction is a generally reliable form of inference.

\[
\begin{array}{c}
2 + a \\ A \downarrow \\ 1
\end{array}
\]

Now we need to evaluate this missing premise. What do you think of it? Is it true? I think so, but premises need to be more than true. They need to be acceptable to someone who doesn’t already believe the ultimate conclusion, so we have to ask ourselves, “Could someone who doesn’t already believe that induction is reliable believe that if previous instances of induction have worked well for us then induction is a generally reliable form of inference?”

As it turns out, someone who doesn’t already believe that induction is reliable couldn’t believe “If previous instances of induction have worked well for us then induction is a generally reliable form of inference.” After all, when one thinks something like “If previous instances of induction have worked well for us then induction is a generally reliable form of inference,” one is using induction! Consequently, the missing premise “a” assumes the conclusion and so inference A is weak.

“Induction is a generally reliable form of inference because previous instances of induction have worked well for us. In fact, induction does allow us to correctly generalize about unobserved members of a class and to level accurate predictions.”

1. Induction is a generally reliable form of inference.
2. Previous instances of induction have worked well for us.
   a. If previous instances of induction have worked well for us then induction is a generally reliable form of inference.

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\begin{array}{c}
2 + a \\ A \downarrow \otimes \\ 1
\end{array}
\]
The ramifications of this discovery are fairly startling. It would seem impossible to justify induction without using induction, and since circular arguments can’t justify anything, it would seem impossible to justify induction at all.

This problem we’ve just seen has been given its most powerful and influential expression by David Hume (1711–1776), in his *An Enquiry Concerning Human Understanding*. Hume writes,

“When a man says, I have found, in all past instances, such sensible qualities conjoined with such secret powers: And when he says, Similar sensible qualities will always be conjoined with similar secret powers, he is not guilty of a tautology, nor are these propositions in any respect the same. You say that the one proposition is an inference from the other. But you must confess that the inference is not intuitive; neither is it demonstrative: Of what nature is it, then? To say it is experimental, is begging the question. For all inferences from experience suppose, as their foundation, that the future will resemble the past, and that similar powers will be conjoined with similar sensible qualities. If there be any suspicion that the course of nature may change, and that the past may be no rule for the future, all experience becomes useless, and can give rise to no inference or conclusion. It is impossible, therefore, that any arguments from experience can prove this resemblance of the past to the future; since all these arguments are founded on the supposition of that resemblance. Let the course of things be allowed hitherto ever so regular; that alone, without some new argument or inference, proves not that, for the future, it will continue so.” (*An Enquiry Concerning Human Understanding*, Skeptical Doubts concerning the Operations of the Understanding, Part II, paragraph 8)

**Summary**

This chapter gave us two additional argument evaluation skills.

First, this chapter taught us how to evaluate premises that happen to be definitions.

All definitions can be considered to have the form “A T is a G that D.” “T” is the term being defined. “G” is the genus of the definition, or an overarching category that encompasses everything falling under the term while including some things that don’t fall under the term. “D” is the differentia of the definition, the characteristic of things falling under the term that distinguishes (or differentiates) them from other things in the same genus. The genus and the differentia, taken together, constitute the “body” of the definition.

If the body of the definition applies to more things than the term does, we say that the definition is “too broad.” If the body of the definition applies to fewer things than the term does, we say that the definition is “too narrow.” If the body of the definition contains the
term defined, or a close synonym of the term defined, we say that the definition is “circular.” A good definition mustn’t be too broad, too narrow, or circular.

Second, this chapter taught us how to evaluate inferences using the Missing Premise Method.

In order to evaluate an inference that takes us from reason R to conclusion C, we first find the missing premise necessary to perfect that inference. There are three ways to find the missing premise.

i. Looking at the inference from idea R to idea C, we can ask ourselves “What must someone be assuming in order to find this inference convincing, in order to move naturally from R to C?” The answer to this question is the missing premise.

ii. Looking at the inference from idea R to idea C, we can ask ourselves “How could someone believe R and not believe C?” Then we take the opposite of this idea as the assumed premise, to block off any avenue of escape.

iii. We can identify the most important concepts not shared by ideas R and C, and construct a premise that combines those concepts. This is exactly like fabricating a missing puzzle piece on the basis of the surrounding pieces. When an undefined, but intuitively important, term appears in the conclusion of the inference but not in the supporting reason, or vice versa, the missing premise may be a definition of that term.

Once we’ve identified the missing premise, we add it to our diagram, assigning it the lower-case letter corresponding to the inference we’re evaluating.

We then evaluate the inference by evaluating the missing premise. If the missing premise we’re forced to add is outrageous, then the inference was weak. If the missing premise we’re forced to add is reasonable, then the inference was strong.