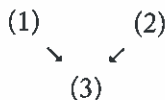


MODEL RESPONSES FOR APPENDIX III: ARGUMENT MAPPING

Exercise Set 12.1: Mapping simple arguments

Model Responses to Exercise 1

¹[American swimmer Michael Phelps has more Olympic medals than any other athlete.] ²[At his peak in the 2008 games in Beijing, Phelps dominated his sport in a way that no one else has.] That's why ³[Michael Phelps is the greatest Olympian ever.]

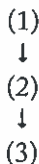


The argument map in this response shows that the first two sentences of the argument—labeled (1) and (2)—are independent premises for the main conclusion, (3), which appears (as always) at the bottom of the argument map. (The main conclusion is indicated in the original argument by the conclusion indicator “That’s why.”)

The two premises are independent, rather than linked, because each one provides a good reason—all by itself, without help from the other—for believing the conclusion.

Model Response to Exercise 3

¹[Most Americans live too far from their place of work for it to be practical to ride a bicycle to work.] ²[This makes bike paths largely a waste of money—as a solution to traffic problems, at least.] ³[The government should find other ways to reduce traffic besides building expensive bike paths.]



The argument map in this response shows that each sentence in the argument is given as a reason for the next sentence. Claim (1) is a premise for (2), which is, in turn, a premise for the main conclusion, (3).

There are no conclusion indicators in the argument to give this away. You need to figure it out by thinking about what the main point of the argument is and how the various claims relate to one another.

One way to approach this problem is to think about which arrangements make the most sense. Claim (1) is a good reason to believe (2). Claim (2) is not as convincing as a reason for (1). Thus, it makes more sense to read (1) as a premise for (2) than vice versa. Claim (2), in turn, seems like a good reason for (3). Thus, the arrangement shown in this response's argument map seems like a reasonable interpretation of the argument.

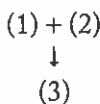
Notice that (1) might seem like a good reason for (3) all by itself. Why not just draw an arrow from (1) to (3)? No doubt you would, if all you were offered were (1) and (3). Remember, though, that your goal here is to diagram the argument as it is written. Since (2) is included as well, we need to try to find a place for it. Claim (2) doesn't make sense as the main conclusion of the argument. It's neither linked with (1) nor independent of (1). Instead, it seems to fit most naturally as a subconclusion in between (1) and (3).

As this example illustrates, mapping arguments takes a fair amount of playing around with different options. (In the authors' view, this is one of the most enjoyable aspects of argument analysis!) Sometimes, the choice between one argument map and another will be a matter of interpretation.

Model Response to Exercise 5

¹[By reducing student debt, eliminating tuition at medical schools would enable more new doctors to become primary care physicians.]

²[We have a shortage of primary care physicians in this country.]
Therefore, ³[medical schools ought to be free.]



The first two sentences of the argument are both premises. They jointly lead to the conclusion, which is the third sentence. This is shown in the argument map by linking (1) and (2) with a plus sign and drawing a single arrow to the main conclusion at the bottom of the map.

To see that the premises are linked, rather than independent, consider this: We would have no reason to take steps to increase the number of primary care physicians if we weren't facing a shortage of them, so (1) would not be a reason for (3) if (2) weren't true. And the need for more primary care physicians wouldn't give us a reason to eliminate tuition at medical schools if doing so wouldn't increase the number of primary care physicians, so (2) would not be a reason for (3) if (1) weren't true.

Model Response to Exercise 7

Some Western European countries are banning Muslim women from wearing the burqa on the grounds that it is an insult to women's dignity. ¹[If Europeans are truly concerned with Muslim women's dignity, then they should be addressing not only the burqa but also highly sexualized images of (non-Muslim) women in the European media.] After all, ²[if they're so worried about Muslim women's dignity, they ought to be concerned with all women's dignity.] And ³[if they are concerned with all women's dignity, then they ought to be just as concerned about highly sexualized portrayals of women in, say, European advertising as they are about the burqa.]

$$\begin{array}{c} (2) + (3) \\ \downarrow \\ (1) \end{array}$$

Since the main conclusion of this argument appears first in the argument itself—and is labeled (1) in the response—this response puts (1) at the bottom of the argument map. It shows that the premises—labeled (2) and (3) in the argument—are linked, jointly supporting (1). The first sentence in the passage provides background information. It does not constitute a premise in the argument.

If you've read Chapter VI, you'll recognize this argument as an instance of hypothetical syllogism (Rule 24). As a general rule, deductive arguments involve linked premises. (You need "if p then q " and "if q then r " as premises in a hypothetical syllogism. Without one, the other does nothing to support the conclusion "if p then r .")

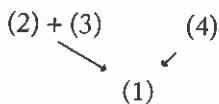
One common mistake when mapping arguments that use "if-then" sentences is to treat each part of the sentence as a separate claim. It may be tempting, for instance, to separately map the statement "Europeans are truly concerned with Muslim women's dignity" and the statement "they should be addressing not only the burqa but also highly sexualized images of

women in the European media", as you would do in Chapter VI to analyze deductive validity. Here this would be a mistake. When you map an argument's structure, map whole premises, like "if p then q ," not their constituent statements.

Notice, for example, that this argument is not claiming that Europeans are truly concerned with women's dignity (which is the statement that is symbolized by p in this case). In fact, the argument suggests, but does not say, that Europeans are mainly concerned about something other than women's dignity. The argument is only saying that if Europeans care about Muslim women's dignity, then they ought to address both the burqa and highly sexualized images of women. That entire "if-then" sentence is a single claim, and it needs to be mapped as such.

Model Response to Exercise 9

¹[Happiness in life is reserved for those who care more about being happy than about being "successful."] ²[The signs of so-called success in modern life—a big house, a fancy car, designer clothes, etc.—are expensive.] ³[Having enough money to buy expensive things requires working so hard that you don't have time to enjoy all the expensive things you've bought.] Besides, ⁴[true happiness doesn't come from owning the kinds of things that are considered signs of success, anyway.]



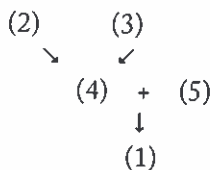
As in Question 7, the main conclusion of this argument appears first in the written version, so it is labeled (1) in the response. Claims (2), (3), and (4) are all premises.

As the argument map in this response shows, an argument can mix linked and independent premises. Premises (2) and (3) in this argument are linked. The fact that signs of success are expensive does not by itself imply that happiness is reserved for those who care more about being happy than about being successful. Neither does the fact that making a lot of money takes a lot of time. It's only when you put those two things together that either counts as a good reason for (1). Premise (4), on the other hand, is a reason for (1) regardless of how expensive the "signs of success" are. Thus, it is an independent reason for (1).

Exercise Set 12.2: Mapping complex arguments

Model Response to Exercise 1

¹[Governments ought not to pay ransoms to terrorists who have kidnapped people.] ²[Doing so encourages terrorists to kidnap more people.] ³[Paying ransom also provides the terrorists with the resources to kill even more people.] Therefore, ⁴[even though ransoming hostages saves the hostages' lives, paying ransom ultimately leads to more deaths.] As hard as it may be to accept, ⁵[it's more important to minimize the overall harm that terrorists do than it is to save any specific hostage.]



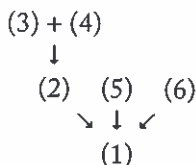
The “jigsaw puzzle” approach works well for this argument. The conclusion indicator therefore signals that claim (4) is either the conclusion or a sub-conclusion. When we think about its relationship to the other claims, we can see that (2) and (3) both work as reasons for (4), but that (4) seems to be a reason for (1) rather than the other way around. So that gives us one sub-argument: (2) and (3) somehow lead to (4). And how do we get from (4) to (1)? By joining (4) to (5). So that gives us the rest of the diagram.

All we need to do now is figure out which premises are linked and which are independent. Since either (2) or (3) would provide a reason for (4) on its own, those premises are independent. What about (4) and (5)? Claims (4), (5), and (1) fit a general pattern that should tip you off: Claim (4) states that an action would have a particular effect. Claim (5) states that we ought not to take actions that have that effect. The main conclusion is that we ought not to take the action described in (4). Whenever you see this pattern—doing *x* would lead to *y*, and we ought to avoid *y*, so we ought not to do *x*—you should expect the premises to be linked rather than independent. (Can you explain why?)

Model Response to Exercise 3

¹[Drugs ought to be legalized.] ²[Attempting to ban drugs is futile.] ³[Countries all over the world have tried for decades to ban various drugs.] ⁴[None of the attempts have been successful.] Furthermore, ⁵[making drugs illegal contributes to the development of failed states]

by empowering criminal drug cartels around the world.] ⁶[The other problems associated with legalizing drugs are more manageable than the problems with criminalizing them too.]



This response shows that the main conclusion—(1)—is supported by three independent premises—(2), (5), and (6)—and that (2) is supported in turn by two linked premises—(3) and (4).

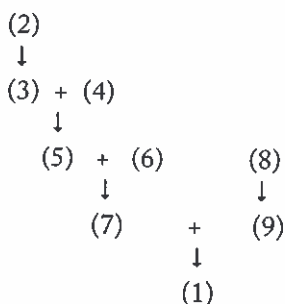
To arrive at this argument map, you might begin by identifying (1) as the main conclusion of the argument. Then notice that claims (2), (5), and (6) have nothing to do with one another, except that they are all reasons for (1). This makes them independent premises for (1). Claims (3) and (4), on the other hand, relate more immediately to (2) than to (1). Indeed, they seem to be given in this argument as reasons for (2). So, they go on the line above (2) in the argument map. They are linked, rather than independent, because (3) makes (4) a more powerful reason for (2), and (3) is not a reason for (2) at all unless (4) is true.

Why is that? The fact that every attempt to ban drugs has failed is a good reason to believe that banning drugs is futile if and only if there have been many attempts to ban drugs. Remember Rule 7! Thus, (3) makes (4) a more powerful reason for (2). The fact that many countries have attempted to ban drugs does nothing to show that banning drugs is futile unless those attempts have been unsuccessful. Thus, (3) needs (4) in order to count as a reason for (2).

Model Response to Exercise 5

¹[I see your wife is out of town.] How do I know? Since ²[the female detective you're working with is wearing men's deodorant,] I take it ³[she borrowed someone else's deodorant this morning.] And since ⁴[it smells the same as your deodorant], it stands to reason that ⁵[she's wearing your deodorant.] ⁶[Which she would only do if she'd woken up at your place after spending the night there.] So ⁷[she spent the night at your place]—I'm right so far, aren't I? Of course I am. And since ⁸[you're married], ⁹[she wouldn't have spent the night with you unless your wife was out of town.] That's how I know.

Model Responses for Exercise Set 12.2



Working backward and paying close attention to premise and conclusion indicators can help you map this complex argument from the BBC's Sherlock Holmes reboot.

The main conclusion is clearly (1). So let's put that at the bottom of the argument map. Claim (9) states that the detective would not have spent the night unless the listener's wife was out of town, where (7) states that the detective did spend the night. Those two claims jointly entail the conclusion, so let's add them as the next layer up.

The premise indicator "since" reveals that (8) is a premise for what comes next, which in this case is claim (9). So let's add (8) as a premise for (9) in our diagram.

Now, how does Sherlock know that the detective spent the night with his listener? After figuring out that she's wearing the listener's deodorant—which is claim (5)—Sherlock reasons that she would only do that if she'd spent the night there—which is claim (6). So let's add those to the diagram above claim (7).

But how did he know that she was wearing his deodorant? Again, follow the indicator words. The word "since" before claim (4) tells us that it's a premise for (5). And since it's claim (3) that makes (4) into a strong reason for (5), we'll put those two together as the premises for (5).

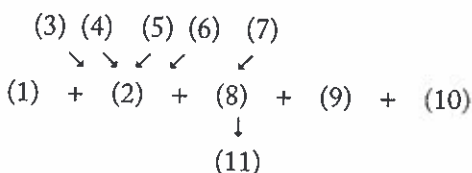
Finally, claim (2) is offered as a reason for claim (3), so that goes on yet another line, completing Sherlock's chain of reasoning.

As this example illustrates, arguments that seem very complicated on the surface often turn out to be nothing more than a chain of relatively easy-to-understand arguments. By focusing on one step at a time, you can often make great progress in understanding what otherwise seems impenetrable.

Model Response to Exercise 7

¹[When one person knowingly causes a fatal injury to another, that is murder.] ²[Capitalism deprives many people of the basic necessities of life.] ³[It requires them to live in cramped, squalid, toxic conditions.] ⁴[It leaves them without resources for medical care.] ⁵[It leaves them

unable to afford the most minimally nutritious food.] ⁶[It leaves them no respite from work, save sex and drink.] Furthermore, because ⁷[capitalism leaves wealth and power in the hands of the few], ⁸[it leads to power structures that prevent the oppressed from taking the necessities of life by force.] ⁹[Being deprived of the necessities of life leads to death just as surely as does being actively harmed.] ¹⁰[Society knows full well that capitalism has this effect.] Thus, ¹¹[society is committing murder by allowing capitalism to continue.]



The key to mapping this argument is to pull the two subarguments out of the main argument. Focus for a moment just on (1), (2), (8), (9), and (10). Together they jointly provide an argument for believing that society is committing murder. But why should we believe that capitalism deprives people of the basic necessities of life? To support this claim, the argument offers (3), (4), (5), and (6) as independent reasons for accepting (2). The argument offers (7) as a reason for accepting (8).

You might also interpret (2), (8), (9), and (10) as jointly leading to an unstated subconclusion—call it (12*)—that society knows that capitalism causes fatal harm to some people. You could then interpret (1) and (12*) as jointly leading to (11). Sometimes, adding unstated subconclusions to an extremely complex argument can help you organize that argument more effectively.

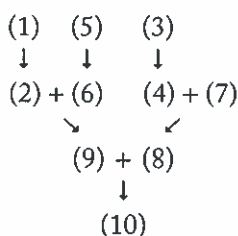
This argument comes from Friedrich Engels' famous account of the conditions of the working class in England in 1844. His book is widely considered a classic study of the social effects of the Industrial Revolution. Engels went on to co-author *The Communist Manifesto* with Karl Marx.

Model Response to Exercise 9

¹[Our distant ancestors lived in very small societies.] ²[On a normal day, everyone they met would be someone they had known all of their lives.] ³[These societies did not interact very much with other societies.] ⁴[Just about everything they ate, everything they wore, and every tool they used was made within that group.] ⁵[Today, of course, we live in vast societies.] ⁶[We can look out at a busy city street and see, all at once, more people than our ancestors saw in their entire lives.] ⁷[We live in a global trading system.] Indeed, ⁸[our world is unimaginably different from the world of our distant ancestors.] ⁹[Our minds,

Model Responses for Exercise Set 12.2

however, are designed for the life of our distant ancestors.] Thus, ¹⁰[our minds may not be well adapted to the special challenges of the modern world.]



Working backward is a useful approach to mapping this argument. The main conclusion is (10)—that our minds may not be well adapted to the challenges of the modern world. The argument condenses the basic reasons for this into two premises: the modern world is radically different from that of our distant ancestors, but our minds are designed for their world, not ours.

The rest of the premises constitute subarguments that are designed to show that our world is unimaginably different from theirs. One strand of this argument focuses on the number and variety of people that we encounter: they encountered very few strangers (because they lived in small societies) whereas we encounter many strangers (because we live in a vast society). The other strand of the argument contrasts the self-sufficiency of ancient societies with our global trading network.

Many arguments, especially those with this level of complexity, can be mapped in multiple ways. For instance, you might group (2) and (4) together as linked premises for (8), in which case you would want to group (6) and (7) together too. Thus, there may be more than one good response to this exercise.