Appendix III
Argument Mapping

When you are dealing with complex arguments, drawing a diagram or "map" of the argument can help you understand the argument's structure. This is important because it helps you understand how the different parts of the argument relate to one another, what parts might need more support, and how problems with one part of the argument affect problems with another part of the argument.

An argument map is like a flow chart of an argument. It shows visually how the various premises relate to one another and how they lead to the argument's main conclusion. You can also use them to help you write argumentative essays (remember, for example, Rule 36: Your argument is your outline!) and organize your oral presentations. A variety of argument "mapping" methods are also widely used in formal debating.

Learning to draw argument maps is an extension of learning to analyze arguments. Basic argument analysis involves distinguishing premises from conclusions (Rule 1) and presenting the premises in a natural order (Rule 2). More detailed argument analysis involves understanding exactly what role each premise plays in supporting the argument's main conclusion. Argument mapping is just a way to represent that detailed analysis graphically.

The elements of an argument map are numbers, which represent the premises and conclusion in an argument, and arrows, which connect the premises and conclusions.

Start with the following very simple argument:

> The New York Yankees have won more World Series championships than any other team in baseball history. Therefore, the New York Yankees are the greatest team in baseball history.

The first step in mapping this argument is to identify all of the claims in the argument, just as we did in Exercise Set 1.1. We can do that by bracketing each claim and assigning a number to it, like this:

> [1][The New York Yankees have won more World Series championships than any other team in baseball history.] Therefore, [2][the New York Yankees are the greatest team in baseball history.]

The second step is to distinguish the argument's conclusion from its premises (Rule 1). The conclusion indicator "therefore" shows us that claim (2) is the conclusion. This leaves claim (1) as the only premise in the argument. So far, this is nothing new.

The new step comes in representing the relationship between claims (1) and (2) graphically, which we do as follows:

(1)
↓
(2)

In this diagram, (2) represents the conclusion of the argument ("The New York Yankees are the greatest team in baseball history") and (1) represents the argument's premise ("The New York Yankees have won more World Series championships than any other team in baseball history"). We put the conclusion—(2)—at the bottom of the argument map, and we use a downward arrow to indicate that (1) "leads to" (2)—that is, that (1) is a premise for (2).

Most arguments, of course, aren't that simple. For one thing, most arguments have more than one premise. How about this one?

> Participating in musical ensembles, like orchestras and choruses, is fun. Participating in musical ensembles also teaches valuable lessons about discipline and teamwork. Therefore, children should be encouraged to participate in musical ensembles.

Once again, the first thing to do is to bracket all of the claims in the argument and assign a number to each one:

> [1][Participating in musical ensembles, like orchestras and choruses, is fun.] [2][Participating in musical ensembles also teaches valuable lessons about discipline and teamwork.] Therefore, [3][children should be encouraged to participate in musical ensembles.]

Next, we want to distinguish the premises from the conclusion. Again, the conclusion indicator "therefore" points the way: (3) is the conclusion, and (1) and (2) are premises.

We can use arrows to represent the relationships among these claims, as follows:

(1) (2)
↘ ↙
(3)

As always, we put the argument's conclusion—in this case, (3)—at the bottom of the argument map. We put the premises above it and draw arrows from the premises to the conclusion. Here, the arrow from (1) to (3) indicates that (1) is a premise for (3), and the arrow from (2) to (3) indicates that (2) is also a premise for (3).

In some arguments, two or more premises work together, as it were, to support a conclusion. Consider, for instance, this argument:

> [1][Children should be protected from media that might encourage them to do dangerous things.] [2][Violent video games might encourage children to do dangerous things.] Therefore, [3][children should not be allowed to purchase violent video games without parental consent.]

Once again, we need to distinguish premises from conclusion, and once again we see that (3) is the conclusion and (1) and (2) are premises for (3). Notice, however, that premises (1) and (2) are "linked" in a special way: they only support (3) when they are combined, rather than providing independent reasons for (3). In this case, (1) is only a reason for (3) because (2) is true, and (2) is only a reason for (3) because (1) is true. If either of these premises were false, the other premise would cease to be a good reason for (3).

Given that (1) and (2) are related in this special way, we need to draw our argument map differently if it is to represent the relationships among the claims accurately. We can represent the link between (1) and (2) as follows:

(1) + (2)
↓
(3)

We link (1) and (2) by drawing a plus sign between them, and then we draw a single arrow from the linked pair to (3). This shows that (1) and (2) *jointly* support (3).

Contrast this argument with the earlier argument about musical ensembles. In that earlier argument, each premise provided an independent reason to believe the conclusion. The fact that participating in musical ensembles is fun is a reason—all on its own—to encourage children to participate in them. It would count as a reason to encourage participation even if participating didn't teach valuable lessons. Likewise, the fact that participating in musical ensembles is a reason—all on its own—to encourage children to participate in them, and it would count as a reason even if participating weren't fun. Thus, we drew separate arrows from (1) to (3) and from (2) to (3), indicating that each premise leads to the conclusion independently of the other premise.

This highlights one advantage of argument maps over premise-and-conclusion outlines of arguments. Argument maps enable you to show the relationships between premises. Premise-and-conclusion outlines don't.

The other major advantage of argument maps comes when we consider more complex arguments, like this one:

> [1][There is a finite amount of oil in the world.] Thus, [2][we cannot continue to use oil for fuel forever.] That's why [3][we need to develop alternative sources of energy.]

We've bracketed and numbered the claims in this argument. But when we go to distinguish premises from conclusions, we see a problem. Both (2) *and* (3) are introduced with conclusion indicators ("Thus" and "That's why"). Which is the conclusion?

If we step back and look at the argument as a whole, we can see that the main point of the argument is that we need to develop alternative sources of energy. Thus, the *main* conclusion of the argument is (3). (2) is offered as a reason for (3), which makes (2) a premise of the argument. So why does it also have a conclusion indicator in front of it? Because (2) is supported by (1)—or to put it another way, (1) is offered as a reason for (2). Thus, (2) acts as both a premise *and* a conclusion, like a middle link in a chain. A claim that serves as both a premise and a conclusion is called a *subconclusion*. The argument-within-an-argument that leads to the subconclusion is called a *subargument*.

Argument maps enable us to represent these relationships graphically:

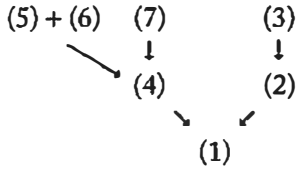
(1)
↓
(2)
↓
(3)

As always, we put the main conclusion—(3)—at the bottom of the argument map. We put (2) just above it, with a downward arrow connecting (2) to (3). We then put (1) above (2), with a downward arrow connecting (1) to (2). This argument map shows at a glance that (1) is offered as a reason for (2), which in turn is offered as a reason for (3).

We can combine the techniques we've used so far to map more complex arguments, as well. In fact, the more complex the argument, the more helpful the map. Consider this argument:

> [1][A standard layout should be required for all Web sites.] [2][A standard layout would save users time] because [3][everyone would know exactly where to go for the information they want.] Also, [4][a standard layout would make it easier for people to put up their own Web sites.] This is because [5][a standard layout could be based on one simple template] and [6][a layout based on one simple template would make "do it yourself" programs easy to create and teach.] [7][Designers wouldn't have to spend as much time coming up with their own layouts, either.]

Some careful analysis of this argument shows that the last three claims are premises for (4), although (5) and (6) are linked to one another and (7) is independent. (3) is a premise for (2). (2) and (4) are independent premises for the main conclusion, (1). Explaining that in words makes it tough to follow; it's *much* easier to see all of this if we draw a picture! We can map this argument as follows:



This argument map represents the complexity of this argument much more clearly than any premise-and-conclusion outline could. It shows each subargument clearly. It evens reveals the structure of the subarguments: Not only do (5), (6), and (7) all lead to (4), but (5) and (6) are linked, whereas (7) is independent. (2) and (4) are independent premises for the main conclusion, rather than linked premises.