Argument Mapping 6: Model Argument Maps

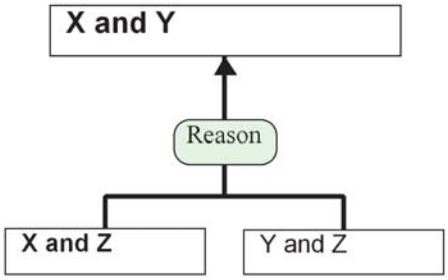
Most of the following discussion provides model or prototype argument maps that can be applied to any argument that takes a similar form. A good argument has to be valid (i.e. the logical structure of the argument is such that if all the premises are true, the conclusion must *necessarily* be true) and its conclusion also needs to be sound (i.e. true because all the premises of at least one reason are in fact true).
Therefore most of these models are generic and can be applied to any particular case.

Remember that even the most complicated argument map is only a large number of smaller simple arguments strung together in chains to form an argument web.
Remember also that the various rules (AQ-the Assertibility Question, HH-Holding Hands, RR-Rabbit Rule) only apply to the level directly above and below each box (and next to each box in the case of HH). That is to say, each reason only needs to answer the AQ for the claim directly above it, and only needs to follow the HH and RR rules for that particular reason chain. Don't jump or skip levels and do not jump from one reason chain to another.

Here are the examples detailed in this handout:
Generic model
Good, Better and Best models
Models claiming importance (relative and varying)
Dramatic change model
Causality model (explaining *why*)
Copying model

Generic model
In a way, the principles of argument mapping are very simple: you look at any one box and apply AQ, HH and RR to the boxes one level above/below it as necessary. It is applying it in specific examples that can be difficult, and particularly trying to figure out how exactly to phrase the unstated assumptions.
I've provided below the general form for many common arguments. I've used variables (X, Y, Z, A, B...) and then give a specific example so you can see how it works in practice. Remember that the terms used in an argument will be specific (politicians are crooks because they lie, dogs are man's best friend because they are faithful, etc.), but there are basic forms of arguments, where all valid arguments of that type will have essentially the same structure in spite of their different content.

In general, the simplest of argument maps will take the form of something like this:



The term X is found in both the claim and the first co-premise, and Y is found in both the claim and the second co-premise – therefore the rabbit rule is enforced. To obey holding hands we know something must connect the two co-premises. You can't repeat "X and Y" (either literally or substantively) in one of the premise boxes, since that would just be repeating the claim and therefore not increasing the likelihood of the claim being true (see the causality exception below). So the "bridge" between these two co-premises must be something different from X and Y that they both "share", i.e. Z in our algebraic notation. Adding Z, you now have all of the terms matched up and canceling each other out, so this is a *valid* argument.[1] Whether the conclusion is *true* or not will depend on whether the two co-premises are themselves true or not – which of course will depend on the strength of the reasons you give to support them.

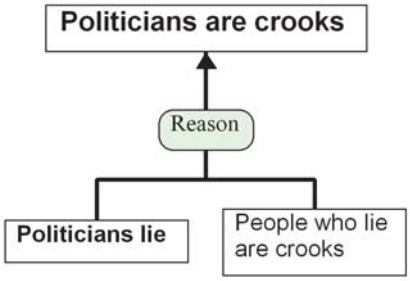
Other important points:

We also recall that you can have more than two co-premises in a single reason. The exact number of co-premises will usually be related to the number of separate terms in your claim box – the more separate terms there are in a claim, the more likely you will need multiple co-premises. In general, however, we try to simplify all of our statements so we have only two terms in each box, but in a few cases which we'll discuss below, the very nature of the claim will require more than two co-premises because there are several things necessary for the claim to be true.

Recall as well that you can also have more than one reason, and the more independent reasons you have, the stronger your conclusion because you have multiple, *independent* reasons to believe it is true. Since they are independent reasons, even if one of the reasons turns out to be false, the others may still be true and therefore the conclusion would still be true (this is the concept of corroboration or consilience).

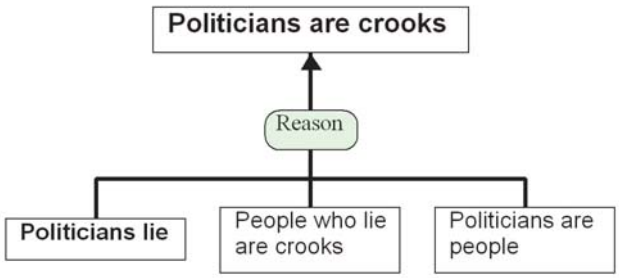
As the argument map's structure indicates, you need to prove both co-premises in order for the claim to be true. This is only the top of the map, so you would of course need to provide reasons (which answer AQ) to believe each of the co-premises and extend it down from there.

To show one example:



"Politicians lie" is the minor premise of this claim, and "People who lie are crooks" is the major premise. To explicitly identify another key (if banal) assumption in the above argument, this would give us:

[1] Note that in saying "X and Y", we are not saying that the box will literally say "[X] and [Y]" and we are saying *nothing* about the relationship between them. The word "and" in "X and Y" means only to say that they are both found in the box together.



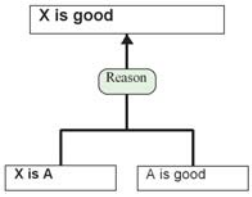
Most people will assume the third co-premise unthinkingly and identify it much more slowly than they would the second, but it is generally a good idea to include all such assumptions. Note that in this case more than two boxes have the term "politicians" in them – that's OK because there are more than two co-premises. As long as each term is in two boxes in each claim-reason pairing and both RR and HH are followed, that's adequate.

Good, Better and Best models

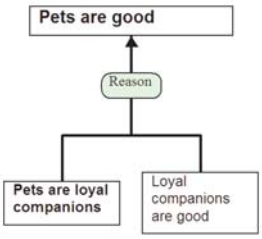
This is the first of a series of generic models that are frequently used to support common arguments. If your argument matches one of these formulations, then the first layer of your argument map *must* include the reasons shown below in order to be logically valid.[2] You would build on to the model by adding new layers, i.e. reasons to believe why the first layer co-premises are true. Your lower levels, for example, will have specific facts from primary sources as reasons.

Good model

To prove that something is good (in the sense of beneficial), your argument should take the general form:

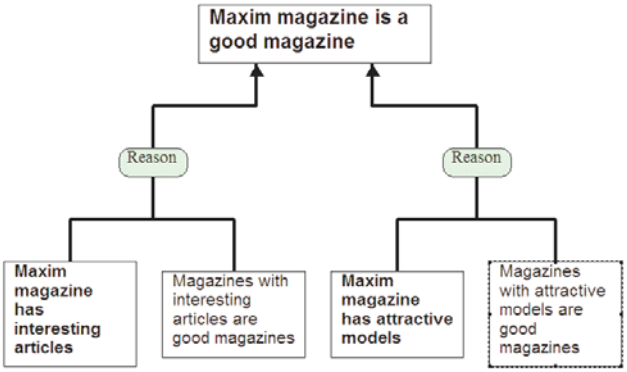


We've introduced the variable A because goodness is dependent on something other than X. It makes no sense to argue, for example, that "pets are good because pets are pets," though it makes sense to argue that "pets are good because pets are loyal companions." Here we've replaced X with "pets" and A with the general concept of being loyal companions. We need another co-premise, however, which states that having a loyal companion is a good thing. The map would look like:



[2] It is possible that there are additional co-premises that are unstated assumptions – if you can think of any, include them.

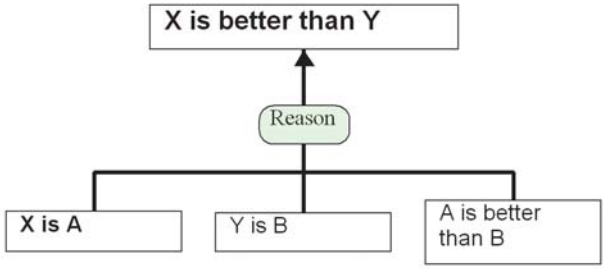
Here's another specific example:



This claim has two reasons to believe it is true; each reason must obey HH and RR on its own. Notice too how the most important part of the reason is the (usually unstated) assumption that interesting articles and attractive models are good things – without this assumption you cannot logically accept the conclusion. In many cases such unstated assumptions are taken for granted, but they are important to include in the argument map nonetheless – hence the holding hands and rabbit rules. Assumptions that you take for granted will not necessarily be held by others (say, by someone concerned with body image issues), and the point of an argument is to try to convince the other person of your position, or at least identify where you disagree.

Better model

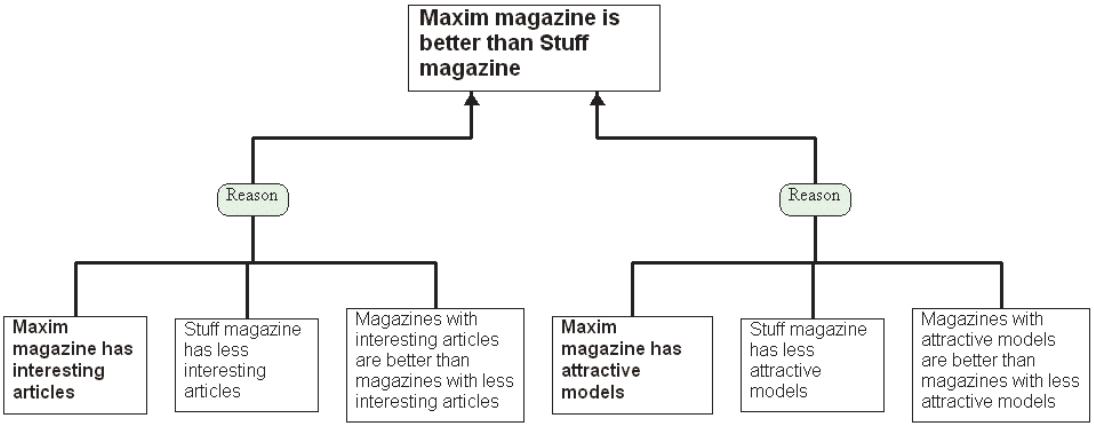
To conclude that one thing is better than another thing, we need three separate premises in *each* reason. The model looks like:



We need the third co-premise because someone might agree that X is A and might also agree that Y is B, but they might disagree that A is better than B – maybe they prefer B instead.

An extension of our previous example:

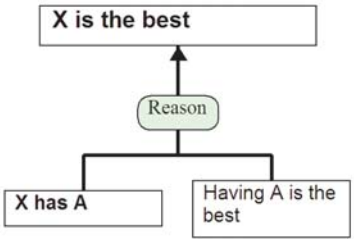
Maxim magazine is better than Stuff magazine because its models are more attractive and its articles are more interesting.



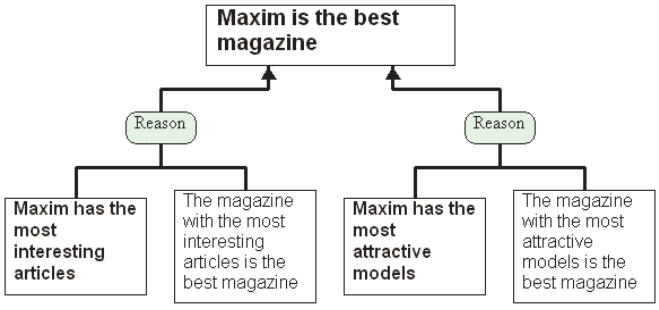
For the second co-premise in each reason one might have instead said something like "Stuff magazine has no interesting articles." This would be saying B is in essence not-A, in which case the third co-premise would say A is better than not-A (or not having A).

Best model

An argument that something is the best takes the general form:



If we wanted to take our example a step further and say "Maxim is the best magazine," the argument map would look like this:



Again notice the generic co-premise that does not repeat "Maxim" (it's already in two boxes, which is enough). The terms of the boxes do, however, get more specific as we go down each level (going from 'best magazine' in the claim to 'best component of a magazine' in the reasons for that claim).

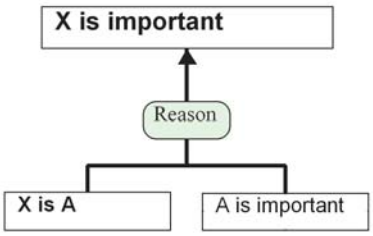
Alternatively, you could also say 1) Maxim is the best magazine, 2) Maxim has interesting articles, and 3) Magazines with interesting articles are the best. It will really depend on what exactly the arguer intends and what the evidence suggests.

The same models apply to more/most, less/least, and other comparatives and superlatives.

Models claiming Importance

These models illustrate how you should structure your arguments to claim that something is important, that one thing is more important than another, and that something has lost (or gained) importance.

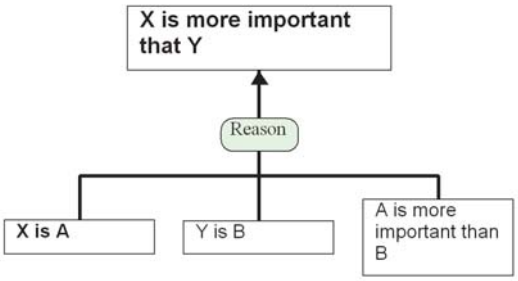
Important



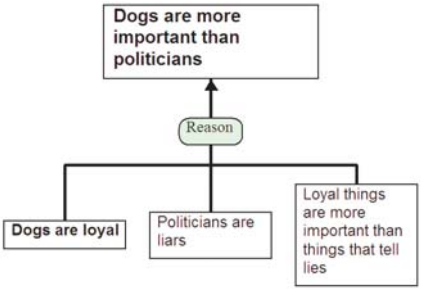
Again, we have to introduce the new object A since something can only be deemed important for some particular reason beyond it just being itself. "It's important to brush your teeth because it's important to not rot your teeth out" – an unstated co-premise in this case would be "not brushing your teeth will cause your teeth to rot out."

More Important

We could also claim that something is more important than something else:



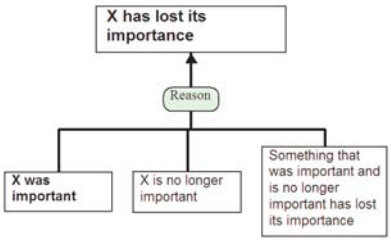
For example: *Dogs are more important than politicians because dogs are loyal and politicians are liars and loyalty is more important than lies.*



Notice that this form is valid, but it is less clear whether the argument is sound, i.e. whether it makes sense. So it is not just a matter of applying a formula – you need to think about what the content of the argument means as well as its structure.

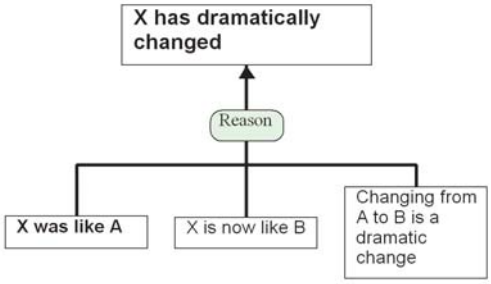
Losing Importance

We could also claim that something has lost its importance:



Dramatic change model

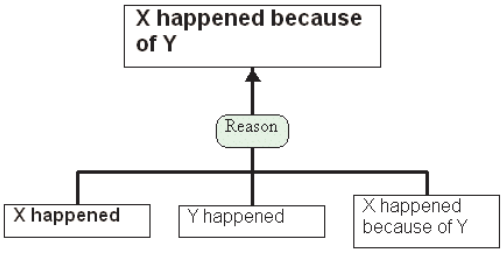
This model shows how you should prove that dramatic change occurred in some thing:



The last co-premise allows for the possibility for someone to object that changing from A to B is not a change, or is at least not a dramatic change. Someone could argue that while X did indeed change from A to B, this is not dramatic. Dramatic change requires instead changing from, say, A to F, instead of just changing to B.

Causality model

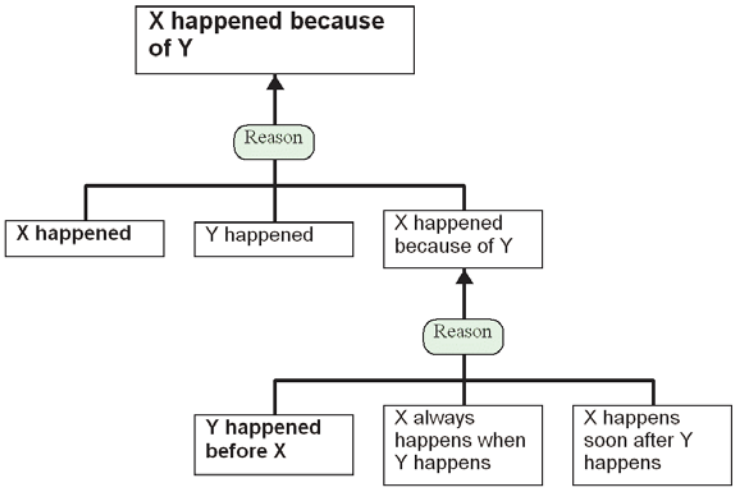
This model illustrates the proper way to map an argument in which you are arguing that a certain thing happened for a particular reason. Although argument maps are not the best tool for comparing competing explanations for events, they can be used for a simple single cause claim. In its simplest form, the top two levels look like this:



Notice that there are three separate things that you need to prove: 1) that the effect X occurred, 2) that the cause Y also happened, and 3) that the effect happened *because* of the cause. In this case do not break down the "X happened because of Y" copremise any further (as you would normally), since you are dealing here with the *relationship* between X and Y rather than with them individually (which you deal with in the other two copremises). You then provide reasons for each of these three claims as you would in a normal argument map, remembering for the third co-premise to focus *solely* on why you believe Y caused X.

If you've had science or philosophy or methodology courses you probably know that more than just the above is required to prove causation (i.e. there are specific reasons that

are required to prove the third co-premise).[3] There are a number of possible requirements, and here's an example with a few of the most widely accepted ones:



To let you know the historical standards you should use in papers, your evidence to support "Y happened before X" *must* be true (chronology is critical), but the other two co-premises do not require the same degree of certainty, especially given the chronological breadth the papers demand. The important thing for the other two co-premises is to think hard about and research for any significant exceptions to your rule – some historical conclusions are more true (or at least more likely to be true) than others. For an introductory level history paper, the second co-premise can read: "X almost always happens when Y happens."[4]

KEY POINTS

Argument maps make it easy to visualize the structure of many common types of arguments. The specific terms may change (it could be John who's the good quarterback, or maybe it's Peter, or maybe he's a bad father instead), but the requirements of a logically valid argument remain the same. These model arguments do no more than follow the rules we've already discussed (AQ, RR, HH), and they provide a generic template you can use for any argument that follows the same form. In fact, any argument of that type *must* give the kinds of reasons specified in the model.

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[3] This is a huge debate within the philosophical and natural/social scientific communities which I won't even pretend to follow. The acceptable criteria for causation vary by discipline. For example, the natural experimental sciences can require a far stricter definition (e.g. X *always* happens when Y happens) because they can isolate the particular variables they are studying and thus are far more confident in knowing what happens every time because they can repeat it over and over. When dealing with complex systems such as humans and their interactions (especially when they've occurred in the past), we can't easily replicate the same conditions and control for different variables or rerun history, hence the saying "all else being equal."

[4] For an introductory discussion of historians' views of historical causation, see Martha Howell and Walter Prevenier, *From Reliable Sources: An Introduction to Historical Methods*, (Cornell University Press, 2001).