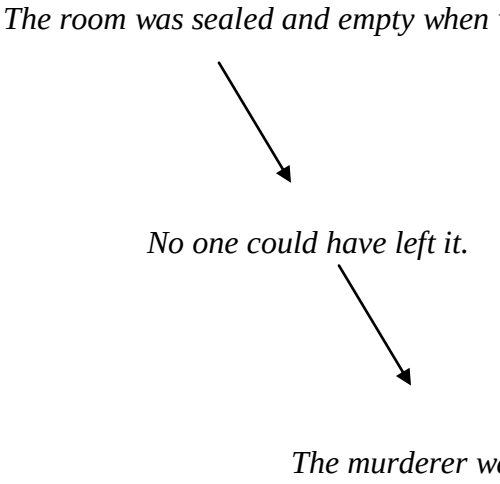
Logical Structure of a Reasoned Discourse

Once you have found that a discourse contains reasoning and have distinguished the reasons from the conclusions, the next step is to determine its overall structure. There are four basic reasoning patterns: serial, divergent, linked and convergent.

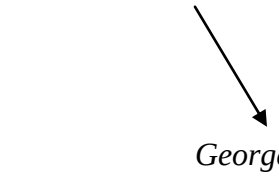
1) **Serial Reasoning**
   In serial reasoning a single statement operates both as a conclusion from a reason and as a reason for a further conclusion – in other words, the reasoning proceeds via an "intermediate conclusion".

   E.g.: *The room was sealed and empty when we entered. Therefore, no one could have left it. And therefore, the murderer was never in the room.*



   The term serial reasoning is also applied to the simple case in which a single arrow leads from one reason to one conclusion, with no intermediate conclusion.

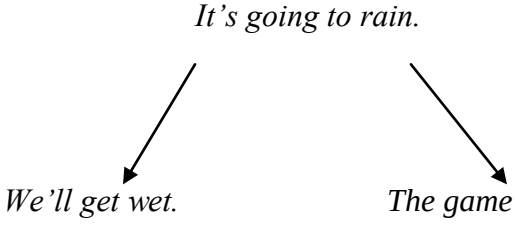
   E.g.: *George will never get into law school because his grades are too low.*



2) **Divergent Reasoning**

In a divergent inference, the same reason is given as supporting several different conclusions.

   E.g.: *It's going to rain and so we'll get wet and the game will be cancelled.*

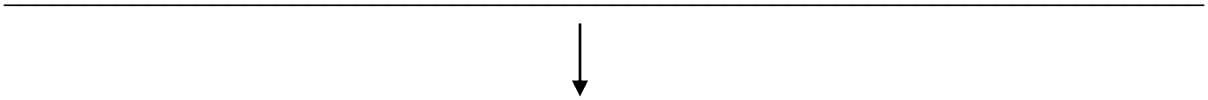


3) Linked Reasoning

When a step of reasoning involves the logical combination of two or more reasons, they are diagramed as linked.

E.g.: *If marijuana were legalized, then it could be commercially processed and made available in a form that did not need to be smoked. If marijuana could be commercially processed and made available in a form that did not need to be smoked, then it could be made safer for people's health. Therefore, if marijuana were legalized, then it could be made safer for people's health.*

If marijuana were legalized, then it could be commercially processed and made available in a form that did not need to be smoked. + *If marijuana could be commercially processed and made available in a form that did not need to be smoked, then it could be made safer for people's health.*



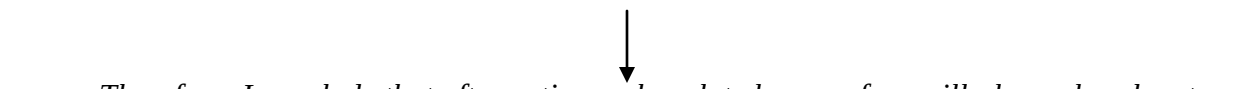
Therefore, if marijuana were legalized, then it could be made safer for people's health.

Only one arrow is used to show that the conclusion is single inference from the combination of both reasons. Reasoning is linked when it involves several reasons, each of which needs the others to support the conclusion. In the above example, each reason needs the other in order to justify the conclusion.

Inductive reasoning is also diagrammed as linked.

E.g.: *I ate chocolate bar #1 and afterwards my face broke out. Likewise, for chocolate bars #2 through #N, each time after eating the chocolate bar, my face broke out. Therefore, I conclude that after eating a chocolate bar, my face will always break out.*

I ate chocolate bar #1 and afterwards my face broke out. + *After chocolate bars #2, my face broke out.* + *After chocolate bars #N, my face broke out.*

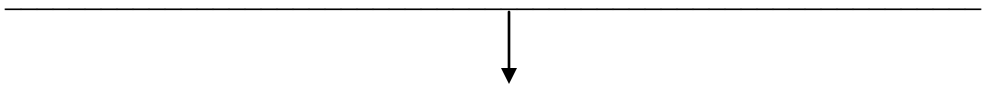


Therefore, I conclude that after eating a chocolate bar, my face will always break out.

Also, suitable related pieces of evidence that fit together to support or justify a given hypothesis or otherwise, can be diagramed as linked.

E.g.: *His swimming suit is wet, and his hair is plastered down. From this I conclude that he has been swimming.*

His swimming suit is wet. + *His hair is plastered down.*



He has been swimming.

4) Convergent Reasoning

When two or more reasons do not support a conclusion in a united or combined way, but rather each reason supports the conclusion completely separately and independently of the other, the reasoning is convergent.

E.g.: *I already promised Harry that I would go into the partnership with him. If I go into the partnership with Harry, I probably will make a lot of money. I should go into the partnership with Harry.*

I already promised Harry that I would go into the partnership with him.

If I go into the partnership with Harry, I probably will make a lot of money.

I should go into the partnership with Harry.

Convergent arguments are equivalent to separate arguments (or evidence from separate areas) for the same conclusion. Each separate reason would still support the conclusion just as well even if the other reason(s) were false or line of reasoning was not good.

E.g: *Smoking marijuana is against the law. It may also be bad for my memory. So, I shouldn't smoke marijuana.*

Smoking marijuana is against the law.

It may also be bad for my memory.

I shouldn't smoke marijuana.

If one reason needs another in order to provide good support for the conclusion it should be diagrammed as linked. If neither reason needs the other reason in order to support the conclusion then the reasoning can be diagrammed as convergent reasoning. Each reason alone would be enough to support the conclusion if true and would not weaken a step of reasoning from the other to the conclusion.