Logic, Reasoning, and Persuasion 07; Writing Assignment, Part 1
Due Wednesday, October 15th. Grading: *not much progress / progress / complete.* Resubmissions available. Submit on Canvas or in class.

One of the objections that A&C consider in their paper is the following:

> *Using ChatGPT in the process of writing a college humanities paper may enhance autonomy, rather than undermine it.*

A&C describe this objection in more detail in §4, paragraphs 3–4. Then in §4 paragraphs 5–9, they give their response to that objection. This is the approximate structure of paragraphs 3–9 of §4:

1. ¶3–4: The Objection
2. ¶5–7: Response One (¶5), Response Two (¶6), Response Three (¶7)
3. ¶8: Discussion of banning chatbots *thoroughly* for assignments like papers.
4. ¶9: Discussion of educator responsibilities if chatbots are banned thoroughly.

In this assignment, you will analyze the first two responses.

1 | Part 1: Re-Reading

Re-read §4 in its entirety, but focusing on ¶¶3–7.

2 | Part 2: Informal Argument Map and Prose Restatement

For **each of** Response One and Response Two (in paragraphs 5 and 6), give an informal argument map and restate the argument in prose.

2.1 | *Argument Map*

Write the argument in the paragraph as an informal argument map. This argument map does not need to have more one than one layer (although it can). There may not be a *unique* way to correctly map the argument, but there will be ways that do make sense based on the text, and ways that don't.

1. First identify the *main conclusion* that Aylsworth and Castro appear to be defending in each paragraph.
2. Then identify the premises that they use to support that conclusion. Number the premises so you can refer back to them more easily.
   (a) For each premise or conclusion in the map, locate and specify the portion of the paragraph where you take the authors to be asserting or implying that premise or conclusion.
   (b) Make sure that when you identify the premises, they satisfy the rules for writing argument maps: premises are **simple statements** and premises in a level/step are **mutually dependent**.
   (c) If authors list reasons *against* their own conclusion, you can include it in the argument map underneath the conclusion, specifying that it is a reason *against*. (I'll say more about this on Monday October 6th).
3. For each premise that you identify, see if it is supported by further premises (another level down), repeating considerations (a)-(c) above.

2.2 | *Restate in Prose*

Based on your argument map, restate the argument in prose form: as if you were summarizing the argument to someone, but trying to do it *more clearly* than the authors themselves. The restatement doesn't have to be longer than the original. You don't have to include all of the statements that the authors write (some of them might not be as relevant), but you should give the complete argument in the paragraph.[1]

3 | Part 3: Logic Machines

Identify a Logic Machine: For **one** of the argument maps, identify a portion of the argument map (one conclusion and the premises that support it) that is *deductive*, and thus can be analyzed as a truth-preserving logic machine. Identify the truth-preserving logic machine that is being used, and specify the premises and conclusion.

- **Note:** you may have to rewrite the premises and conclusion in order to make them fit the logic machine.
- **Hint**: each of the paragraphs has at least one portion that is analyzable as either an Implication Machine or a Chain Machine.

4 | Part 4: Constructive Critique

Improve: Finally, for **one** of the argument maps, identify what you take to be something *missing*. Is there a premise that needs to be improved? One that needs to be added? Improve the argument by adding or amending the premise, and explain why the argument would be better if changed.

This is a long assignment. I've tried to make the instructions clear, but things are always clearer to the author than the readers! I will repost this document with a sample implementation of the assignment to clarify how the assignment should be completed.

1. Actually, this is a part of the assignment that I expect chatbots would be quite good at, if prompted correctly. If you want to use an AI chatbot, but also want to make sure you are able to do this sort of restatement by yourself, I recommend that you *first* do the restatement by yourself, then "check your work" against the AIs, and modify your work accordingly. This is because it's much easier to *recognize* a correct answer than to *generate* it.

An Example

Let's do the exercise for the objection argument in Paragraph 4 of §4.

> There are many recent examples of humans collaborating with artificial intelligence in order to climb to new heights. Chess was forever changed when Deep Blue defeated world champion, Garry Kasparov, in 1997. The game of go underwent a similar revolution when AlphaGo defeated Lee Sedol in 2016. In both cases, the triumph of artificial intelligence led to substantial changes in the way people play those games. It is now routine for players to use bots to study. New openings and move sequences have emerged from these collaborations, and this lends credence to the claim that current players like Magnus Carlsen and Shin Jin-seo might be the greatests of all time. If reliance on artificial intelligence has made humans better at chess, go, and data analysis, it stands to reason that it can make us better at writing as well. This would mean that chatbots could enhance our ability to set and pursue our own ends, and this seems to be an objection to our claim that chatbots undermine the autonomy of their users.

Throughout, I will go through a method that you could follow. You don't *have* to do it the way I've done it!

A | Part 1: Re-Reading

As we reread, let's convert the paragraph into a list of sentences. While we're at it, let's split sentences in two when they express two different ideas and join them together with a linking word:

1. There are many recent examples of humans collaborating with artificial intelligence in order to climb to new heights.
2. Chess was forever changed when Deep Blue defeated world champion, Garry Kasparov, in 1997.
3. The game of go underwent a similar revolution when AlphaGo defeated Lee Sedol in 2016.
4. In both cases, the triumph of artificial intelligence led to substantial changes in the way people play those games.
5. It is now routine for players to use bots to study.

6a. New openings and move sequences have emerged from these collaborations, and

6b. this lends credence to the claim that current players like Magnus Carlsen and Shin Jin-seo might be the greatests of all time.

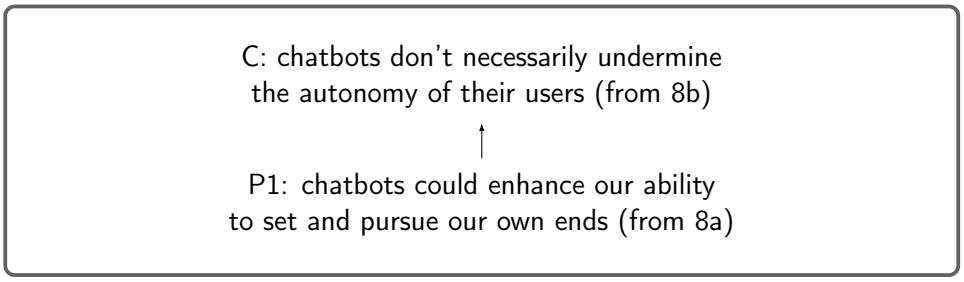
7. If reliance on artificial intelligence has made humans better at chess, go, and data analysis, it stands to reason that it can make us better at writing as well.

8a. This would mean that chatbots could enhance our ability to set and pursue our own ends, and

8b. this seems to be an objection to our claim that chatbots undermine the autonomy of their users.

Next, we'll try find the main point of the paragraph. When we do this, let's remember the context: this paragraph is meant to be stating an *objection* to A&C's claim that chatbots undermine the autonomy of their users. Luckily, A&C tell us as much in

sentence 8. The claim in 8a, "chatbots could enhance our ability to set and pursue our own ends", is (or "seems to be") an "objection to [their] claim that chatbots undermine the autonomy of their users" (8b). This lets us begin the argument map.

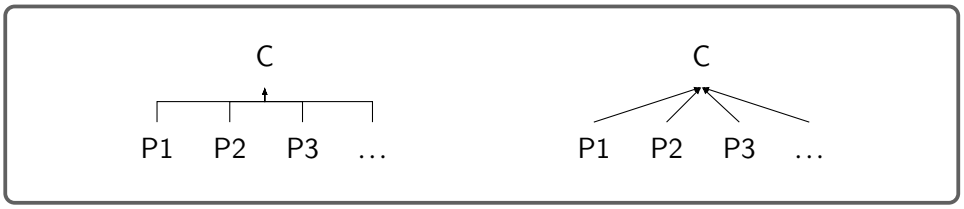


B | Part 2: Argument Map

To construct the argument map, we'll take out existing premises at each level, and ask what in the text provides support for those premises. We've begun with C and P1. **Note:** I'm redrawing the argument map at multiple stages. You don't have to do this in your submission!

First (Top) Level

C is supported by P1. Are there parts of the paragraph that independently support C, or support C in (mutually dependent) combination with P1? That is, is there some P2, P3, etc such that our argument map of the paragraph looks like one of the below?



I don't think so. I think other parts support C *via* supporting P1. And this means we should proceed straight to looking for supports for P1.

Second Level

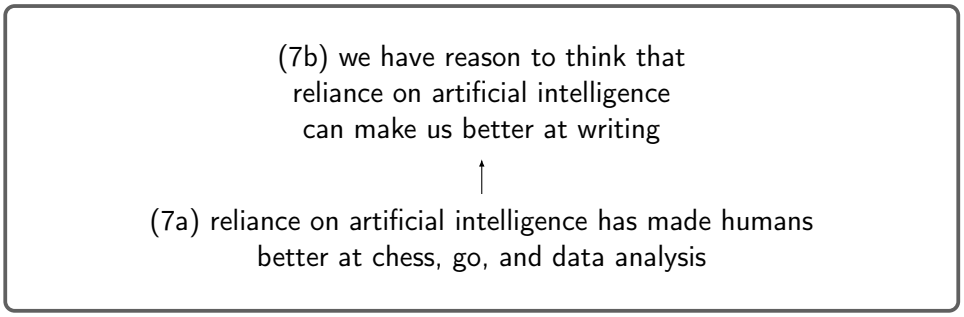
How do A&C support P1? Notice that in sentence 8, A&C begin with "This would mean that...", before saying the rest of 8. What is the "this"? Plausibly it's the most recent sentence, sentence 7. So perhaps we should put sentence 7 in here as P1.1. However, sentence 7 is rather long, and although it's a statement, we should see if we can make it any simpler. Let's notice that it has a reasoning structure: sentence 7 says that the fact that reliance on artificial intelligence has made humans better at chess, go, and data analysis gives us reason to believe ("it stands to reason that") that it could perhaps make us better at writing as well.

So we can paraphrase sentence 7 into two parts with an "if... [then]" structure.

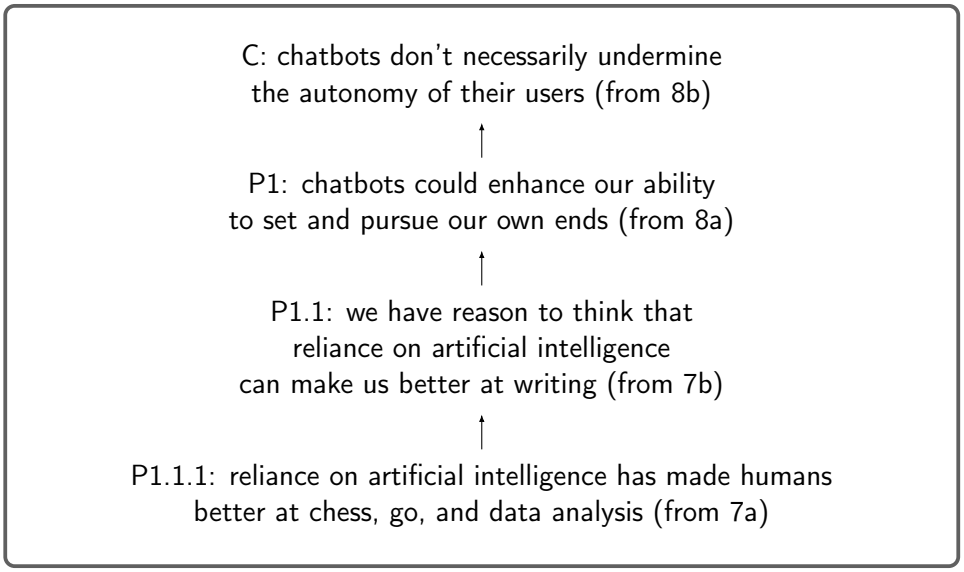
7a. **If** reliance on artificial intelligence has made humans better at chess, go, and data analysis,

7b. [**then**] we have reason to think that reliance on artificial intelligence can make us better at writing.

Notice that because this has a reasoning structure, we can put 7a as support for 7b. That is, we can put 7a and 7b into the following argument map:



Then our full argument map is the following:



Levels 3 and 4

Now let's see if there are more points of support in the text for P1.1 (at level 3) and P1.1.1 (at level 4). For P1.1, it's not clear that there is more explicit support for it. For P1.1.1, it seems like the examples of Kasparov and Sedol are meant to support the claim that reliance on artificial intellignece has made humans better at chess and go (it's unclear where the part about data analysis came from).

The examples of Kasparov (chess) and Sedol (go) are sentences 2–6b. What is the argumentative role of these sentences in supporting claim 7a/P1.1.1?

It's an example. The point is that players have developed improved strategies through studying AI. The history of Deep Blue and Alpha Go gives context and concreteness

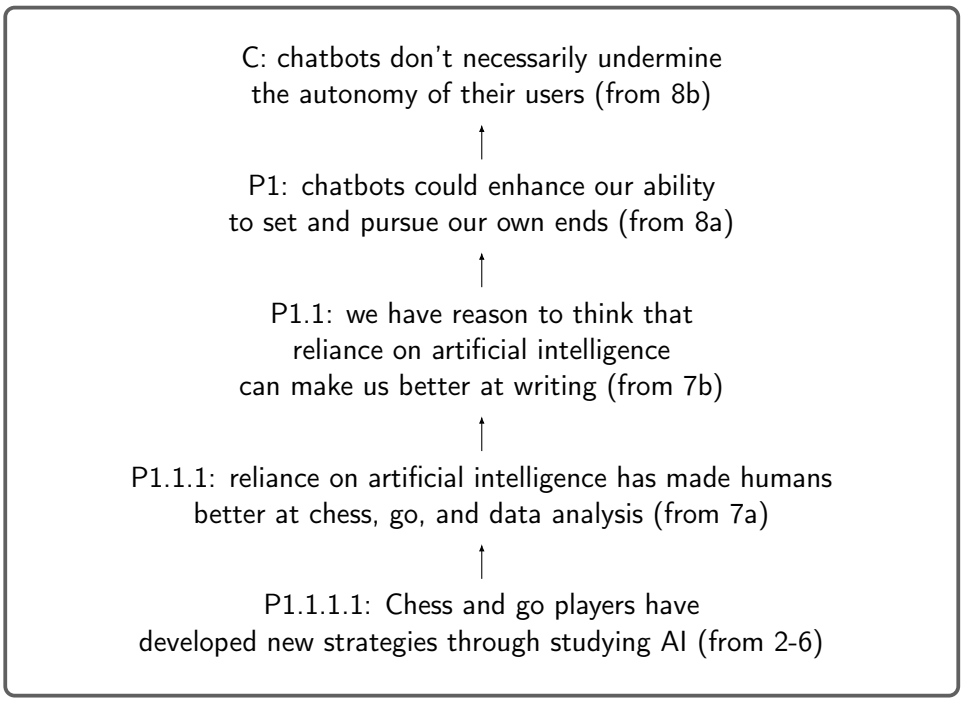
to the point, but for the purposes of argument mapping, we can take sentences 2-6b and condense it into its main point: Chess and go players have developed new strategies through studying AI.

To remember that in the passage this is supported by some factual data, we can "cite" this data:

Chess and go players have developed new strategies through studying AI.[a]

a. Examples of Kasparov/Deep Blue and Sedol/AlphaGo changing how chess and go are played.

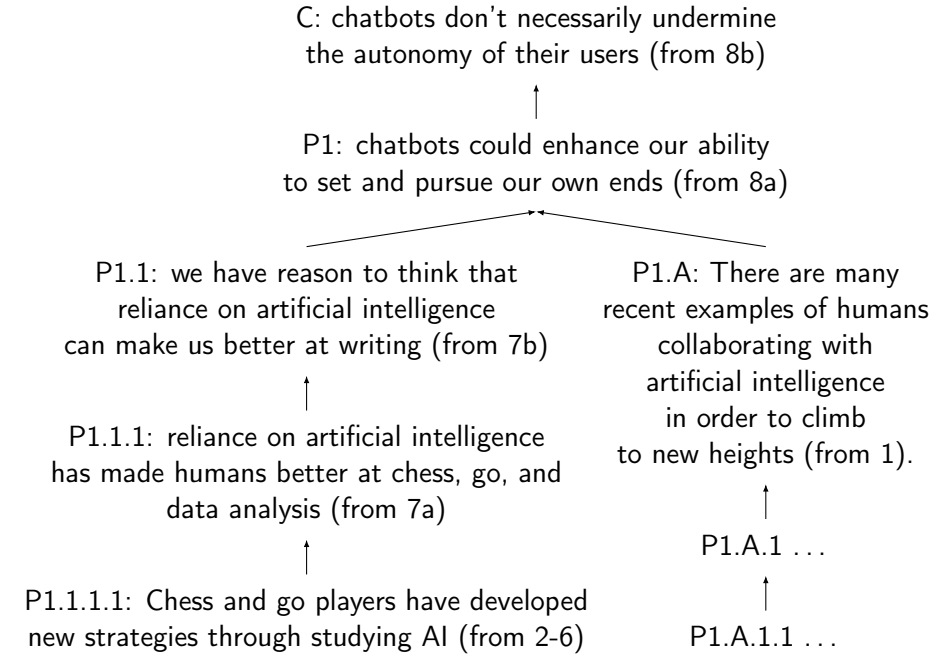
Adding this statement as a new premise, we have:



We're left with sentence 1. Sentence 1 is a bit weird, since it sets up the examples, but seems to restate some of the later sentences. Nonetheless, it doesn't say quite the same thing as any of the later sentences, and it does seem to support the overall conclusion.

I think the best place to put sentence 1 in is as support for P1. P1 talks about a skill/ability (the ability to set and pursue our own ends), and sentence 1 also talks about humans collaborating with AI to gain new skills (this is what they mean, surely, by "climb to new heights", given the context). When we do this, we can also add P1.1.1 as support for P1.A. I won't write it all out, but the entire argument under P1.1.1 can be copied over. Note when I add P1.A that it's a *different* argument for P1 than P1.1. It doesn't work together with P1.1. (I've renamed P1.1.1 and P1.1.1.1 as P1.A.1 and P1.A.1.1. But they're the same!)

So our full argument map from the paragraph is the following:



I didn't ask that you identify the type of support in these arguments. But they are all inductive. The premises give *good reason* to believe the conclusions, but there is wiggle room: they don't *guarantee* the truth of their conclusions.[2]

B.1 | *Restatement in Prose*

Here is my conversion back into prose:

> Chatbots don't necessarily undermine the autonomy of their users (C). This is because, in some cases, chatbots can *enhance* our ability to set and pursue our own ends (in other words, exercise our autonomy) (P1). There have been recent cases of humans collaborating with artificial intelligence in order to develop new skills/abilities (P1.A), which gives reason to think that collaborating with artificial intelligence could help us develop other abilities, like the ability to exercise our autonomy (P1). Two examples are chess and go, where players have studied AI gaming engines to learn new moves and strategies (P1.1.1.1). In these cases, reliance on artificial intelligence has made humans better at chess and go (P1.1.1). The examples of chess and go also give reason to think that reliance on artificial intelligence could perhaps make us better at *writing* in particular (P1.1), which would also enhance our ability to set and pursue our own ends (P1).

2. If none of these are deductive, how could we find a logic machine below? Well, in order to analyze with the logic machine, we have to add (and defend) an *additional* premise. Then the logic machine version of that portion of the mapping is deductive, but the original informal version is still inductive since it does not include the same premises.

Notice that I didn't go into the specifics of Garry Kasparov and Lee Sedol. Also, in order to make the paragraph flow reasonably well, the premises are in an order that doesn't go straight down or up the argument map (although *in general* it goes down). I also repeated (P1) three times to help with clarifying the support relations.

C | Logic Machines

Remember the "if...then" structure we found in 7? We can analyze this using the implication machine. Here is the original sentence:

> If reliance on artificial intelligence has made humans better at chess, go, and data analysis, it stands to reason that it can make us better at writing as well.

We split it into these parts:

7a. **If** reliance on artificial intelligence has made humans better at chess, go, and data analysis,

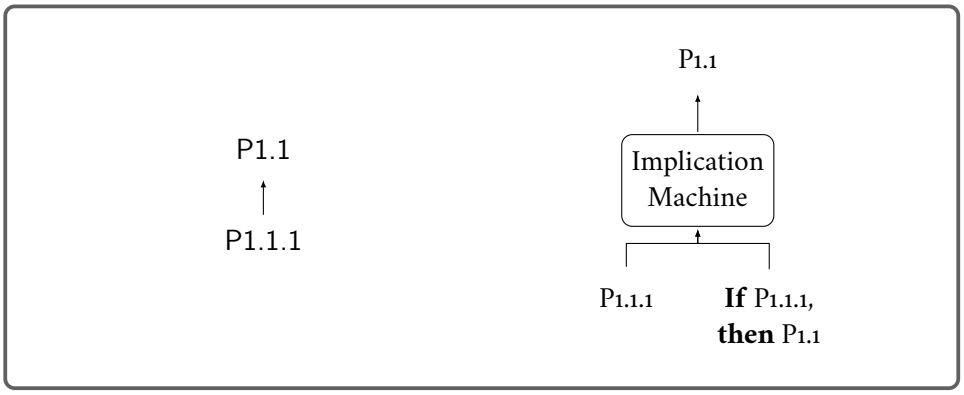
7b. [**then**] we have reason to think that reliance on artificial intelligence can make us better at writing.

In the form of the implication machine, we have:

- (P1.1.1:) reliance on artificial intelligence has made humans better at chess, go, and data analysis.
- (If P1.1.1, then P1.1:) **If** reliance on artificial intelligence has made humans better at chess, go, and data analysis, **then** we have reason to think that reliance on artificial intelligence can make us better at writing.

→ (P1.1) we have reason to think that reliance on artificial intelligence can make us better at writing.

Now that we have the logic-machine account of how P1.1 is derived from P1.1.1, we can compare the logic machine mapping and the informal mapping.



Observe that the premise "If P1.1.1, then P1.1" does not appear in the informal mapping. The "if...then" transition is left implicit. In a way, this is just a consequence of two different mapping methods. Informal argument mapping doesn't require that we specify exactly which machines are operative and that the premises fit the required format for the machines. When we draw an arrow from P1.1.1 to P1.1, we're saying that there is *some* support relation. The logic machine method, because it is *truth-preserving*, is much more stringent. However, it's still notable that nothing like 'If P1.1.1, then P1.1" apperas on the left. We'll discuss this more in the next part.

D | Constructive Critique

I'll suggest two things missing.

D.1 | First Missing Thing

One missing piece is the connection between writing and chess/go/data analysis. Writing is not the same as chess and go? What does data about chess and go have to do with writing? If there is a connection, it's not explicitly argued.

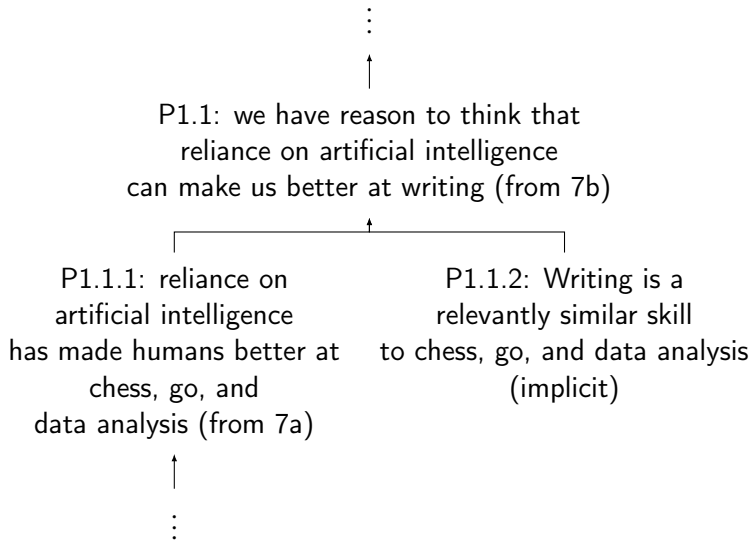
To see this another way, let's return to the fact that the premise "If P1.1.1, then P1.1", or "**If** reliance on artificial intelligence has made humans better at chess, go, and data analysis, **then** we have reason to think that reliance on artificial intelligence can make us better at writing", does not appear in the informal argument map, and so there are *fewer* premises supporting P1.1 in this argument in the informal map. If, according to the implication machine analysis, we need the premise "If P1.1.1, then P1.1" in order to get the conclusion P1.1, then we need some reason to think that "If P1.1.1, then P1.1" is true.

So, why should we believe that **if** reliance on artificial intelligence has made humans better at chess, go, and data analysis, **then** we have reason to think that reliance on artificial intelligence can make us better at writing?

Here's one possibility: writing, just like chess, go, and data analysis, is an analytical skill. So the fact that reliance on artificial intelligence has made humans better at a number of analytical skills gives us reason to think that, for some other analytical skill, reliance on artificial intelligence would also make humans better. So perhaps we can further support P1.1 with the following claim:

P1.1.2: Writing is a relevantly similar skill to chess, go, and data analysis.

This makes the support part for P1.1 look like this:

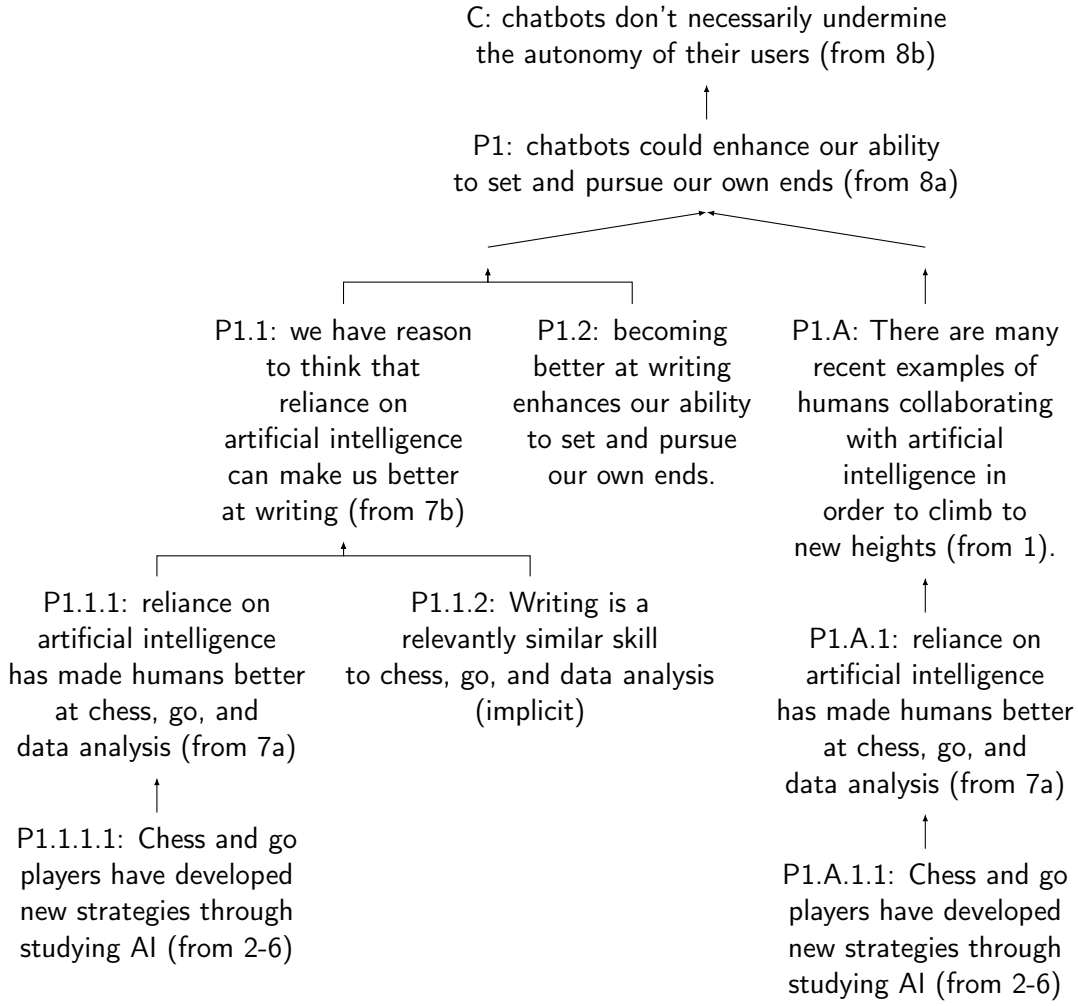


D.2 | Second Missing Thing

Here's another missing thing. What does writing have to do with developing autonomy? That is, how do we get from P1.1, which is about becoming better at writing, to P1, which is about developing autonomy? If there is a connection, it is not explicitly argued. Well, at least not in this paragraph. Remember that A&C spend a lot of the paper arguing that writing is a good to cultivate your autonomy, because it helps you to practice skills that make you better at setting and pursuing your own ends. A premise to this effect should be added to make the argument more complete. And the one that most directly fits within the argument is the below, which uses a lot of the same language as is already in the paragraph:

> P1.2: becoming better at writing enhances our ability to set and pursue our own ends.

With P1.2 and P1.1.2 added, here is a look at the full map:



Now, I'm not convinced by P1.2. But it seem required in order to get this argument to work. However: note that even if the argument on the left side (P1.1 and P1.2) does not work, there is still the argument on the right side (P1.A), which does not depend on it. And plausibly this one is both simpler and harder to deny.