Phil 125

Interactive Project 1

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Parts 1 and 2 are due March 29th 11:59pm through this assignment.

Part 3 is due April 5th 11:59pm through the Week 9 discussion post.

At midnight the assignment is late and it will not be accepted.

Background:

Let's engage scientifically by applying the concepts we learn to real empirical examples. Your task is to apply confirmation and disconfirmation as well as the Quine-Duhem thesis.

The purpose of this assignment is twofold: 1) It is to organize applied information in a precise form; 2) It is to practice structured public speaking--which I think is a skill that is rarely engaged in an academic setting. The importance of this skill is that it is something that you will continue to use. Why? Because the nature of the world is interaction. Imagine this as a practice run for a TED talk.

Your task:

You will be choosing a scientific episode from a peer-reviewed journal from the past ten years; and you will be analyzing it in terms of confirmation and disconfirmation. Choose a scientific episode that has 1) a hypothesis/theory; 2) predictions; 3) data. Your task is to analyze either the confirmation or the disconfirmation (this is an inclusive 'or', meaning that you can do either/or or both) in your scientific episode. You will be analyzing: 1) The background of the scientific episode; 2) The details of the explanation in the hypothesis; 2) The nature of the predictions; 3) What the data is; 4) How the data helps us to confirm and/or disconfirm the hypothesis; 5) How we can apply at least 2 aspects of the Quine-Duhem thesis to either question the confirmation or disconfirmation. Below, where I break down the details of the project, I will break down (1)-(5).
The product:

Your project will be split into 3 parts. As stated above, know where to submit which part, and how to submit it. Come back to this page often while you're developing the project in order to make sure that you are going through each step.

Part 1: 70% of total assignment.

Plan a 5 minute max video presentation. This video presentation cannot contain any slides. It is a pure story-telling exercise, where you engage the audience with the organization of your narrative. You can stand, sit, move, or make it even more creative. The format is up to you. It can be filmed with any device (webcam, cell phone, DSLR) as long as the visibility quality is good and the audio is clear. In the video presentation you must have the following elements. For each missing letter you will receive a 5% deduction. That means you get 20% just for doing a presentation.

1) The background of the scientific episode:

The necessary component here is A) that you introduce the importance and B) relevant background knowledge on the scientific episode. It is also that you C) engage your audience with your episode.

A bit more detail on (A)-(C): What is this scientific episode about? Why is it important? What makes it interesting? In the introduction you should have a way to make the audience interested in the case study. This is why it is very important that you choose something that you are fascinated by. If you do, you will be very involved in the discussion, and it will be easy for you to draw the viewer's attention to the episode.

2) The details of the explanation in the hypothesis:

The necessary component here is that you explain A) what kind of explanation the hypothesis posits, B) how that explanation works, and C) why this explanation is fascinating. It is also that D) your explanation has a seamless transition from (1).

A bit more detail on (A)-(D): Is it a what, how, and/or why explanation? What is it trying to explain? In what way does it explain? Each explanation breaks down the phenomena into components, variables, and/or parameters. How is this explanation breaking down the phenomenon? Give us a description. But have this description be engaging rather than just reading, "parameter 1 is __, parameter 2 is __." Have your description be an illustration of how the explanation works and what makes it so fascinating.

3) The nature of the predictions:

The necessary component is that you make it explicit what the predicted result is. A bit more detail: This one is simple. What do we expect to see in the world if the hypothesis is an adequate one? This part should be brief and matter-of-fact. For some
case studies there are multiple interesting predictions. For others, the predictions are limited. This will be determined by the nature of your case study.

4) What the data is:
The necessary components here are a bit more complex: A) You discuss the kind of measurement process that occurs. For example, what are the measures? Are they qualitative/quantitative? Is this a case of passive measurement where we take perspective? Or is this active measurement where certain parts of the measurement setup are manipulated? Give us a bit of information about the process of measurement. B) You discuss what data the experimenters found/produced. But, do not analyze the data here.

No more detail required about (A) and (B).

5) How the data helps us to confirm and/or disconfirm the hypothesis:
The necessary components here are that you A) compare the prediction and the data in order to make an inference about confirmation and/or disconfirmation; and B) discuss what conclusion you make about the hypothesis. For example, is the hypothesis supported? In what way? Or, is the hypothesis disconfirmed deductively? Is the hypothesis disconfirmed inductively?

No more detail required about (A) and (B).

6) How we can apply at least 2 aspects of the Quine-Duhem thesis to either question confirmation or disconfirmation.
The necessary components here are that you discuss two aspects of the Quine-Duhem thesis. Depending on which components you choose, you will discuss different things.

A bit more detail:
If you choose the tribunal of beliefs, discuss A) what other auxiliary hypotheses are included in the web of hypotheses; and B) how do these hypotheses make it difficult to confirm and/or disconfirm the main hypothesis. For an example of how this works, see module 5 where I discuss the amputees by choice case study in relation to auxiliary hypotheses as well as the pheromone example and the multiple underlying auxiliary hypotheses.
If you chose crucial experiments, discuss C) what kind of crucial experiment could we hope to have with this hypothesis; and D) why is it impossible, according to the Quine-Duhem thesis, to have such a crucial experiment in your case study. For reasoning about (D), see module 5 as well as week 5 reading about why crucial experiments are impossible in a moderate sense. For (C), you will have to do some creative thinking to see how to apply a crucial experiment in this scenario. This will be relatively difficult. One suggestion is that usually when we confirm or disconfirm a hypothesis, we are doing so in relation to an alternative hypothesis--even if it is the null. So, in a sense, every experiment can be interpreted to be a crucial experiment. Your goal here is to apply the Quine-Duhem thesis to make us lose hope in the crucial
experiment in relation to your hypothesis. This is an important qualification. It means that you are not saying that in principle no crucial experiments ever work. Rather, you are showing why a crucial experiment won't work in your scenario.

If you chose underdetermination, discuss C) how underdetermination works in your scenario; and D) how even if we had more data it wouldn't help solve underdetermination here. The important detail here is that you understand that theory is underdetermined by evidence. Your argument will run something like, we have all of this evidence, but it still doesn't point to the theory. This is why; and this is why, even if we had more data, it would still not point to the theory. For an example, see the turtle example in module 5. This makes underdetermination accessible.

How to post:

When you finish your video, make sure that it is in a wmv, mov, or mp4 format. Then, make a youtube account, go into the 'creator studio' on the upper right-hand menu, and upload the video as 'unlisted'. In the dialogue box of this assignment as well as the discussion for week 9, you will be posting your link. These links will be visible to your classmates, but will not be shared outside of class.

Part 2: 15% of the total assignment.

This part is much simpler. Your presentation should be written out in a word document and double-spaced. Submit the word document in this assignment. There is nothing else here. Your written portion will be evaluated based on properties (1)-(6) in Part 1 as well as general structural and grammatical components. The latter are minimal requirements and refer to making sure that you edit your written component and that you split up the paragraph structure so that it is not just one long paragraph. For a lack of structure and grammar you will receive 5% off of your grade. Aspects (1)-(6) are worth 10%.

Part 3: 15% of the total assignment

Remember, this part is posted in the week 9 discussion.

Between March 29 at midnight and April 5 at midnight, watch at least 3 different presentations and provide comments in relation to A) What you appreciated about the presentation--e.g. level of detail, transitions, some aspect of the analysis, etc. B) What you found interesting about the scientific episode and why. Each of your 3 posts will be 12-15 sentences. They will be counted toward this assignment, rather than as a discussion post.