

Philosophy of Science (720A04), VT2019, Seminar

Teacher: Valdi Ingthorsson (valdi.ingthorsson@gmail.com)

Maximilian Pfundstein

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1 Assignments

Please answer the following questions in essay format. Answers are graded on the basis of completeness and depth, not length, but as a rule of thumb 11,5 (+/- 20%) pages per question should be about right. I award up to 8 points per answer. 50% for Pass, 75% for Pass with distinction. Deadline is 24 May at 17:00. Hand-in via Lisam.

1.1 What are the researchers studying?

Notes:

- Do the studied phenomena belong to the domain of the natural or the human sciences?
- Are they objectively measurable or subjectively evaluated?
- Are the methods used well suited to study the phenomena they are interested in?

Answers:

- Natural Science as it is not mainly about emotions or Psychology.
- It seems that the numbers itself are objectively measured but the conclusions lack the objectivism.
- This is really hard to judge as a person not coming from the field.

1.2 Do you find that the articles reveal any particular view about what science is all about?

Notes:

- Empirical/theoretical
- Testing of hypotheses/descriptive/exploratory
- Positivist/falsificationist/hermeneutic
- Theory-dependent/independent
- Objective measurement/subjective interpretation

Answers:

- The results are more empirical as they mostly observe correlations but don't theoretically derive them.

- The taken approach is positivistic as it is based on natural phenomenas consuming knowledge obtained through observations. It's not classified as falsifiable as there can be no statement on its own showing the contrary (it has to be at least statistically relevant).
- It seems the measurement itself is objective, at least to a reasonable degree, but the interpretations are subjective as they heavily use words like *seem*, *might*, *could* or *probably* which does not indicate an objective interpretation despite the fact that they compare their results with other applied researches. The reason for that is that, depending on *when* they looked at other results, the authors biased themselves.

1.3 Do the articles reveal the authors views about knowledge?

Notes:

- Data = fact
- Insight
- True justified belief / practically useful ideas/beliefs that are neither true or false

Answers:

- They solely rely on their data even though their peer group is small and might not be statistically significant.
- This paper focuses more on finding correlation, maybe even causality, but not on explanation.
- It can be seen that they rely on other papers, software and hardware, so they follow the general accepted academic way of doing research (building on top of results of others, assuming they worked correctly, at least as long as their is no strong evidence against that).

1.4 Are the authors self-critical to their arguments/hypotheses/conclusions?

Notes:

- Discuss sources of bias/confounders?
- Discuss alternative explanations?
- Are conclusions justified by their results?

Answers:

- As already mentioned their interpretations are subjective, maybe also their measurements (but this is really hard to judge when not coming from this area of research). Bias might have been implied spoiling the results with looking at other researches too early. As we don't know when this might have taken place, we cannot really make a strong statement here.
- They are not really self-critical. They use blurred interpretations so they always have a way to withdraw their statement.
- Their conclusions are not in direct contrary to the observed data.

1.5 Discuss whether the authors preunderstanding is reflected in the text, or do we have to speculate about it

Notes:

- Do they refer to earlier research
- Do they refer to research that contradict them?
- Do they introduce relevant theories?
- Do they justify the validity of the method?

Answers:

- Yes they refer to earlier research a lot.
- Not really, but they mention that earlier methods showed opposing results and significance.
- They have guesses how their found results can be obtained, but they have, at least in my opinion, no relevant theory.
- Yes, with their obtained data. It's to be judged if this taken approach is sufficient.