Written Exam at the Department of Economics summer 2017

Philosophy of Science

Final Exam

August 18, 2017

(3-hour closed book exam)

Please note that the language used in your exam paper must correspond to the language for which you registered during exam registration.

This exam question consists of 2 pages in total, including this one.

NB: If you fall ill during the actual examination at Peter Bangsvej, you must contact an invigilator in order to be registered as having fallen ill. Then you submit a blank exam paper and leave the examination. When you arrive home, you must contact your GP and submit a medical report to the Faculty of Social Sciences no later than seven (7) days from the date of the exam.

Question 1

a) **During the course we discussed the movement of the logical positivists as well as the philosophy of Karl Popper. Please describe and discuss in your own words similarities and differences between the philosophical approach of the logical positivists and Karl Poppers' ideas regarding science.**

Answer sketch:

- *The aim of both the logical positivists as well as Popper was to define what science is, i.e. to demarcate science from non-science.*
- *In doing so both presented normative approaches to the philosophy of science. That is they defined how scientists should do their work.*
- *They worked with different demarcation rules however*
- *Logical positivists accepted analytical and synthetic a posteriori statements as scientific knowledge. Instead, Popper accepted all statements with empirical content, i.e. statements that were risky and could be falsified as scientific.*
- *Further points to mention should relate to / reflect the points mentioned on slides 3-14 of lecture 3*

b) **Contrast the philosophies discussed/described above with the philosophy of Thomas Kuhn. Please explain Kuhn's 'incommensurability thesis'. Please also give an example of a paradigm in economics and explain your answer.**

Answer sketch:

- *Kuhn did not present a normative but positive theory. That is, whereas the logical positivist and Popper tried to offer a universal methodology for science; Kuhn rejected universal methodologies but illustrated how detailed historical analysis of scientific episodes is informative*
- *Further points to mention should relate to / reflect the points mentioned on slides 3-14 of lecture 3*

c) **What does 'methodological individualism' mean in the context of the science of economics?**

Answer sketch:

- *Points to mention should relate to / reflect the points mentioned on slides 21-23 of lecture 6*

- *Explanations for social phenomena of interest should be formulated in terms of individuals, their motives and their resulting actions.*
- *Methodological individualism goes back to Max Weber. Weber favored accounts of social phenomena in terms of the actions of individual agents because we can subjectively understand their motives for their actions.*
- *Our capacity of interpretively accessing the motives underlying actions allows us to understand why social phenomena occur in a way that is unique to the social sciences in general and economics in particular.*
- *An atom or a billiard ball does not have any particular reason for behaving in the way it does*
- *Their behavior is entirely due to natural causal processes*
- *Human behavior is, however, often intentional, and it is this kind of behavior that is amenable to explanation by motivations or reasons*
- Providing accounts of social phenomena in terms of individuals' actions sets the social sciences in general and economics in particular apart from the natural sciences
- The kind of explanation one thus achieves is "understanding though reducing the unfamiliar to the familiar"
- We understand other people's actions through their motives because their motives are familiar to us from reflection about our own intentions
- Strange and mysterious social outcomes can thus be reduced to something ordinary
- Traditional economic theory prefers rational choice models of social phenomena and demand micro foundations for macroeconomic theories

Question 2

According to Dani Rodrik, the famous debate between, on the one side, Harvard professors Carmen Reinhart and Kenneth Rogoff and, on the other side, a graduate student at the University of Massachusetts at Amherst, Thomas Herndon, about coding and conceptual errors in the well-known Reinhart-Rogoff empirical study on public-debt levels illustrates that economics as a discipline can *progress by the rules of science*. Please explain what Rodrik means by this.

Answer sketch:

The graduate student, Thomas Herndon, did what academics are routinely supposed to do: replicate other's work and subject it to criticism. Along with minor coding errors in an excel sheet, Herndon identified some methodological choices in the Reinhart-Rogoff study that threw the robustness of their results into question. Most importantly, the evidence of the 90 percent threshold level appeared weak.

Reinhart and Rogoff quickly acknowledged the coding error. Moreover, the duelling between the two sides clarified the nature of their data as well as how alternative methods of processing the data changed their results.

The fact that a graduate student from a lesser-known, unorthodox department could take on two world-famous Harvard professors shows—ultimately—that what determines the standing of a piece of research is not affiliation, status, or network of the author; it is instead how well it stacks up to the research criteria of the profession itself. That is, authority derives from how well a piece of research is put together and how convincing the evidence is—not from identity, connections, or ideology of the researchers. Because research standards are shared within the profession, anyone (even a student) can point out shoddy work and say it is shoddy. This—according to Rodrik—shows that economics can progress by the rules of science.

Question 3

An important trend in economic research during the past decades has been the development of "Behavioral Economics".

a) **Sketch how the typical research agenda in behavioral economics has looked like. Discuss, in particular, the interplay between theoretical and empirical research in the development of behavioral economics. You can (but don't need to) illustrate your response with an example from a particular subfield of behavioral economics.**
b) **What is the role that experimental methods have played in this process?**
c) **Which concern do behavioral economic theories potentially raise from a "Popperian" perspective?**

Answer sketch:

The typical research agenda in Behavioral Economics has roughly consists of the following steps

- *Start from an existing, "standard" theory*
- *Observation of conflicting evidence (anecdotal, lab, field), ideas from other fields*
- *Empirical tests whether departures from prevailing theory are (i) systematic and (ii) robust*
- *Development of alternative "behavioral" theory*
- *Empirical tests of alternative theories. Gathering of further evidence*
- *Revise refuted (parts of) alternative theories*
- *…*

Experimental methods have been very important in this development for the following reasons:

- *Experiments can provide "stylized facts" that point to deviations or help form the basis of a new theory (conflicting evidence has often been first observed in laboratory context)*
- *Experiments allow to implement the conditions of a theory (e.g., regarding preferences, technology, institutional setting) in a highly controlled environment → possibility to conduct "ceteris paribus" tests of a theory's comparative statics*
- *Experiments allow to explore why a theory fails*
- *Experimental methods allow to measure and check deep preference parameters underlying a theoretical model (e.g., risk or time preferences)*

Behavioral Economic models typically involve additional parameters that help to capture deviations from standard economic predictions (e.g., parameter for present-bias, fairness concerns, etc.). Concern: with too many degrees of freedom, theories eventually become impossible to falsify.