

Causality and Explanation

Fortgeschrittenenseminar
Course Number: 10096
SS 2013

DESCRIPTION

A key part of science is the attempt to understand and explain the world around us. Often, this involves seeking to discover causes for various phenomena. For instance, meteorologists explain hurricanes in terms of warm sea surface temperatures; economists explain inflation in terms of loose monetary policy and/or supply shocks; medical scientists explain lung cancer incidence in terms of smoking habits; physicists explain the movement of a particle in terms of the various forces applied to it. This course will examine a cutting-edge philosophical theory of causal explanation. We will seek to answer such questions as 'What is causation?' 'What is explanation?' 'Why do causes explain their effects?' 'What is the relation between causation, explanation, and scientific generalizations?' The aim of the course will thus be to better understand a central part of scientific enquiry.

COURSE DETAILS:

Instructors: Dr. Luke Glynn & Ms. Chiara Lisciandra

Class Meetings: Thursdays 14:00 to 16:00 c.t.

Dates: 18.04.2013 to 18.07.2013

Room: Ludwigstr. 25 - D 4c

VALUE OF CLASS

9 ECTS-points/Credit points

DEPARTMENT

Faculty of Philosophy, Philosophy of Science, and Religious Studies
W3-Professor for Philosophy of Science (Univ. Prof. Stephan Hartmann)

INSTRUCTOR CONTACT DETAILS:

Dr. Luke Glynn

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Email: Luke.Glynn@lrz.uni-muenchen.de

Office Hours: Wednesday 11:00 - 12:00.

Ms. Chiara Lisciandra

Office: Ludwigstr. 31, Room 131

Email: Chiara.Lisciandra@lrz.uni-muenchen.de

Office Hours: by appointment

COURSE WEBSITE

We will be setting up a course webpage on *Google Groups*. Many of the readings will be made available via this page. Please send an email to <Chiara.Lisciandra@lrz.uni-muenchen.de> as soon as possible, so that you can be subscribed.

READING ASSIGNMENTS

Reading assignments should always be completed *before* they are covered in class (see the attached class schedule). Articles and chapters under the heading 'Reading' on the attached schedule are mandatory; articles and chapters under the heading 'Further Reading' are optional (but may be especially helpful when it comes to writing your essay). If you encounter any problems with a reading assignment – e.g., if the instructions are unclear, if the document is missing pages, or if you have genuine difficulty gaining access to the reading

– please contact one of the instructors immediately by email; do not wait until the class meeting in which the reading is to be covered. You should always bring a copy of the reading with you to class.

OTHER REQUIREMENTS:

- By 11:00am on the day of each class meeting, you should post on the course's Google Group a *philosophical issue, criticism, or question* that has occurred to you in connection with the reading for that class meeting. These comments should only be brief (a maximum of 200 words, but they may be significantly shorter). Students are also encouraged to raise their comments in class discussion.
- Students are encouraged to participate actively in class discussion. Students are encouraged, in particular, to make constructive contributions that enhance the learning of others.
- 1 x 5,000 word essay + an essay draft/plan (for details see section on '**Evaluation**' below).

ATTENDANCE

Students should attend all classes, except when they have some legitimate reason not to do so (e.g. illness).

EVALUATION

This course is assessed on the basis of 1 x 5,000 word essay (*Hausarbeit*). Students' final grade will be determined *entirely* by this. The final deadline for the submission of essays is 27th September 2013, though it's a good idea to aim to submit earlier. Essays should be typed and double-spaced. They should be submitted in PDF or (preferably) Word format. Essays should be emailed to *both* <Luke.Glynn@lrz.uni-muenchen.de> *and* <Chiara.Lisciandra@lrz.uni-muenchen.de>. Essay topics will be distributed via the course Google Group. Students are *strongly encouraged to submit either a draft essay, or an essay plan, within two weeks of the end of classes*. This will allow them to receive feedback from one of the instructors before preparing their final draft. However, to ensure fairness to all students, the instructors will only give comments on *one* essay draft/plan *per student*.

SPECIAL ACCOMMODATIONS

If you have a disability or personal circumstance that requires special accommodation, please do not hesitate to contact either of the instructors.

KEY TEXT:

The key text for this class is:

- ★ James Woodward: *Making Things Happen: A Theory of Causal Explanation* (Oxford/New York: OUP, 2003 (Hardback) 2005 (Paperback)) (Hereafter abbreviated as '**MTH**').
ISBN-10: 0195189531
ISBN-13: 978-0195189537

It is *strongly recommended* that you each purchase a copy of this book. It can be bought for €22,40 on Amazon:

<http://www.amazon.de/Making-Things-Happen-Osps-Explanation/dp/0195189531>

A copy is also available via the Semesterapparat. But you really need your own copy, since the library doesn't have enough copies for everyone and it's important that you have the book in front of you during class.

You should order your copies of **MTH** *immediately*.

OTHER USEFUL TEXTS

- D. Stirzaker: *Elementary Probability*, Second Edition (Cambridge: Cambridge University Press 2003). (Hereafter abbreviated as '**SZK**'.) *Those who aren't already familiar with elementary probability theory should read at least Chs. 1-2 by class meeting 4*. Students may alternatively read any other introduction to probability theory instead.
- David Lewis: *Philosophical Papers*, Vol. II (Oxford/New York: Oxford University Press, 1986) (Hereafter abbreviated as '**LP2**').

- J. Collins, N. Hall, and L.A. Paul (eds.): *Causation and Counterfactuals* (Cambridge, MA: MIT Press) (Hereafter abbreviated as 'CHP'.)
- H. Price & R. Corry (eds.): *Causation, Physics, and the Constitution of Reality: Russell's Republic Revisited* (Oxford: Oxford University Press). (Hereafter abbreviated as 'PCR'.)

SEMESTERAPPARAT

There is a Semesterapparat ('Glynn: Causality and Explanation') for this course in the Fachbibliothek Theologie und Philosophie <<http://theophil.ub.uni-muenchen.de/>>. Copies of all of the above texts are held there, so that you can read, photocopy, or scan them in the library (but you can't borrow the copies that are in the Semesterapparat).

OTHER USEFUL RESOURCES

An extremely useful online encyclopedia of philosophy, containing entries related to many of the topics we will discuss (and often a good source for further reading) is:

- *The Stanford Encyclopedia of Philosophy*, Edward N. Zalta (ed.): URL: <<http://plato.stanford.edu/>>. (Hereafter abbreviated as 'SEP'.)

This includes the following, highly relevant, entries:

- J. Woodward: 'Scientific Explanation': <http://plato.stanford.edu/entries/scientific-explanation/>.
- P. Menzies: 'Counterfactual Theories of Causation': <http://plato.stanford.edu/entries/causation-counterfactual/>.
- C. Hitchcock: 'Probabilistic Causation': <http://plato.stanford.edu/entries/causation-probabilistic/>.
- J. Woodward: 'Causation and Manipulability': <http://plato.stanford.edu/entries/causation-mani/>.
- J. Schaffer: 'The Metaphysics of Causation': <http://plato.stanford.edu/entries/causation-metaphysics/>.

It is strongly recommended that students read these entries over the course of the semester.

Course Schedule

Class Meeting 1 (18.04.13): Introduction

No Reading Assignments

Class Meeting 2 (25.04.13): Manipulation and Causation - I

Reading

MTH, Ch. 1

Further Reading:

J. Woodward (2012): '[Causation and Manipulability](#)', in the SEP. Read Sections 1-4.

Class Meeting 3 (02.05.13): Manipulation and Causation - II

Reading:

MTH, Ch. 2, pp. 25-61.

09.05.13: No Class (Public Holiday)

Class Meeting 4 (16.05.13): Manipulation and Causation - III

Those who aren't already familiar with elementary probability theory should read at least Chs. 1-2 of **SZK** (or alternatively should read some other introductory text on probability theory) before starting this week's reading.

Reading:

MTH, Ch. 2, pp. 61-93.

Further Reading:

C. Hitchcock (2004): 'Do All and Only Causes Raise the Probabilities of Effects?' In **CHP**, pp. 403-418

C. Hitchcock (2012): '[Probabilistic Causation](#)' in the **SEP**.

Class Meeting 5 (23.05.13): Interventions - I

Reading:

MTH, Ch. 3, pp. 94-133

Further Reading:

J. Woodward (2012): '[Causation and Manipulability](#)', in the **SEP**. Read Sections 5-14.

30.05.13: No Class (Public Holiday)

Class Meeting 6 (06.06.13): Interventions - II

Reading:

P. Menzies (2009): '[Counterfactual Theories of Causation](#)', in the **SEP**.

MTH, Ch. 3, pp. 133-151

Further Reading:

D. Lewis: '[Causation](#)', *Journal of Philosophy*, **70**, pp. 556-567. Reprinted with postscripts in **LP2**, pp. 159-172. Also read Postscript B 'Chancy Causation', pp. 175-184 of **LP2**.

D. Lewis: '[Counterfactual Dependence and Time's Arrow](#)', *Noûs*, **13**, pp. 455-476. Reprinted with postscripts in **LP2**, pp. 32-52. Also read Postscript B 'Big and Little Miracles', pp. 55-56 of **LP2**; and Postscript D 'The Indeterministic Case', pp. 58-65 of **LP2**.

Class Meeting 7 (13.06.13): Interventions: Circularity & Relativity

Reading:

Strevens, M. (2007). '[Review of Woodward, Making Things Happen](#)', *Philosophy and Phenomenological Research*, 74, pp. 233–249.

Woodward, J. (2008). '[Response to Strevens](#)', *Philosophy and Phenomenological Research*, 77, pp. 193–212.

Strevens, M. (2008). '[Comments on Woodward, Making Things Happen](#)', *Philosophy and Phenomenological Research*, 77, pp. 171–192.

Class Meeting 8 (20.06.13): Scientific Explanation - I

Reading:

MTH, Ch. 4

Further Reading:

J. Woodward (2012): SEP article on '[Scientific Explanation](#)'.

Class Meeting 9 (27.06.13): Scientific Explanation - II

Reading:

MTH, Ch. 5, pp. 187-220

Class Meeting 10 (04.07.13): Causal Explanation & Invariance

Reading:

MTH, Ch. 5, pp. 220-238; Ch. 6, pp. 239-254

Further Reading:

James Woodward & Christopher Hitchcock (2003): '[Explanatory Generalizations, Part I: A Counterfactual Account](#)', *Noûs*, 37, pp. 1-24.

Class Meeting 11 (11.07.13): Invariance

Reading:

MTH, Ch. 6, pp. 255-314

Further Reading:

Christopher Hitchcock & James Woodward (2003): '[Explanatory Generalizations, Part II: Plumbing Explanatory Depth](#)', *Noûs*, 37, pp. 181-199.

Class Meeting 12 (18.07.13): Explanation and Special Sciences

Reading:

Bechtel and Wright, "What is Psychological Explanation?" in P. Calvo and J. Symons (ed.) *Routledge companion to philosophy of psychology*.

Kaplan, "[Explanation and description in computational neuroscience](#)" *Synthese* (2011) 183:339–373

Further Reading:

Woodward, J. (2007): 'Causation with a Human Face', in **PCR**, pp. 66-105.

Lombrozo, T. (2010): '[Causal-Explanatory Pluralism: How Intentions, Functions, and Mechanisms Influence Causal Ascriptions](#)', *Cognitive Psychology*, **61**, pp. 303–32.

C. Hitchcock (2012): '[Portable Causal Dependence: A Tale of Consilience](#)', *Philosophy of Science*, **79**, pp. 942-951.