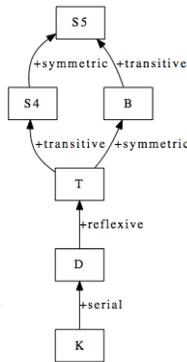


Philosophical Logic: Modality, Conditionals, Vagueness

Spring 2014, Karl-Franzens-Universität Graz



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Time	Tuesdays, 10.00–11.30am
Place	Heinrichstr. 26/V, UR 09.51
Website	http://moodle.uni-graz.at
Instructor	Dr Dirk Kindermann
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Office Hours	Tuesdays, 11:30am–12:30pm and by appointment

Course Description

This is a course in philosophical logic, understood as the deployment of logical methods in the service of philosophical inquiry. We will be concerned with acquiring some basic skills in formal logic — beyond classical propositional and predicate logic — that help us approach and understand three central topics at the intersection of logic and philosophy of language:

1. **Modality:** Language allows us not only to talk about what is the case but also about what *might* be the case. Modal logic is the logic of possibility and necessity. We will study this crucial tool for philosophers in metaphysics, philosophy of language, and epistemology (to name but a few). We will look at Quine’s early philosophical qualms with modal logic and Kripke’s defence.
2. **Conditionals:** In your introductory logic course, you were taught to translate English, or German, conditionals using the ‘material conditional,’ a truth-functional connective. This leads to some odd results. For instance, “If I’m

Swedish, then there will be peace in the middle east” is true (simply because its antecedent is false). We will look at ways of defending the material conditional analysis of indicative conditionals in natural language. Then we will consider alternatives that use the tools of modal logic to provide a more adequate account of natural language conditionals.

3. **Vagueness:** Natural language is full of vague expressions such as “bald”, “heap”, “blue”. We will look at the ‘Sorites paradox’, or paradox of the heap, and consider a number of solutions.

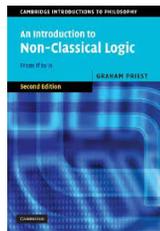
Course Goals

Students should achieve basic mastery of some of the logical tools that are extremely useful for the study of philosophical logic, philosophy of language, metaphysics, epistemology, philosophy of science, and linguistic semantics. They should come to understand some of the most important views in modal logic, on vagueness, and conditionals, to analyse their pros and cons and to critically discuss them. They should be in a position to explore further work on the course topics on their own.

Readings

Articles we will read for class and handouts are available for download on the Moodle course website at <http://moodle.uni-graz.at>.

The textbook for the formal logic component of this class is [Graham Priest \(2008\)](#). *An Introduction to Non-Classical Logic. From If to Is.* 2nd., substantially expanded edition. Cambridge: Cambridge University Press. It will be useful to purchase this book. It costs €24,95 on Amazon.de. (Note that we need the **2nd edition**, for which there exists no German translation.).



Online Updates

You should visit the course website regularly. Handouts, reading materials, and schedule updates can be found on the [Moodle course website](#).

Prerequisites

You must have taken an introduction to formal logic course. Knowledge of propositional and predicate logic will be presupposed. If you have no background in logic whatsoever, you will find this course very challenging. If in doubt, come talk to me on the first day after class.

Participants in this class may have learnt their basic logic in different ways, with different notations, etc. If you find me using logical machinery you do not understand, please stop me and make me explain it.

Attendance

Attendance is obligatory. You may miss up to three (3) sessions without sanctions. I strongly advise you not to miss sessions. Our material is challenging, we are proceeding fast, and it's easy to lose track if you skip material.

Assignments & Assessment

1. Attendance and participation in class (10%)

2. Problem sets (50%)

There will be 6 problem sets (roughly one every two weeks), which you will have to complete by the following week and submit before class: you can either email your set of answers or give it to me in person before class. Again: Problem sets have to be submitted by the next week. **Late submissions will not be accepted** (unless you have a *very* good reason)! The reason is simple: If you do not keep up with the class at all times, you will very quickly be very lost. The problem sets will be made available on the [Moodle course website](#) and will have exercises in formal logic as well as informal questions, all of which you must answer. You **must** submit all six problem sets (by the deadline). **Your best five** problem sets will count towards your grade, so each of those five problem sets contributes 10% to your overall grade.

3. Final exam: open book (40%)

The final exam is a 2-hour exam on the last day of class, **1 July 2014**. It will have exercises and questions in formal logic (one third of the points, assign approximately 40 minutes), informal questions (one third), and a short essay question (one third). The final exam will be an **open book exam**: You can bring to the exam any material that is listed on this syllabus or which is available on the [Moodle course website](#) (including lecture handouts). You *cannot* bring your own notes or material that is not listed on this syllabus nor available on Moodle; neither can you use the internet during the exam.

How to prepare for this course

- **Problem sets:** The problem sets are the backbone of the course. The only way to ‘understand’ logic is to master it. To master it, you have to **do** it. That’s why there are problem sets.
- **Reading:** The readings in this course will be articles with few logical notation, sometimes they will be sections from a formal logic textbook. In either case, the readings will be far from easy. Expect to read them **two to three times**. For the articles: “**read aggressively**” (see [Perry et al. \(2012, pp. 2–4\)](#)): Read closely, analyse, question, reconstruct, take notes, continue . . . Always have a **pencil** ready to work through some formal point if you don’t understand it right from the text. For the textbook: Read it as a **guide to doing logic**: As you read, have pencil and paper ready. At the end of a section, check if you can do a proof you read by yourself without looking into the book. Can you write down the definitions you encountered? Do the exercises in the book as you see fit. If you find the presentation of some point difficult to understand, consult another textbook (see readings below for suggestions). **Take notes of your questions, and bring them to class**. Finally, if you have trouble understanding the readings, or have any question concerning the course, you can always **consult me for advice**.
- Don’t miss any readings, don’t miss any problem sets — it will be very hard to catch up.
- **Ask questions** in class: If a point is unclear to you, chances are your classmates will appreciate additional clarification, too. Don’t be shy to ask questions in class!
- **Team work:** You will find it helpful to **team up** with fellow students to **explain concepts, arguments, and technical material to each other** and to **critically discuss** them. What you invest in helping others will come back doubly when you solve the exercises and when you find yourself in the exam: You haven’t understood a concept or argument unless you can express it clearly and precisely. Note the limits to team work under **Academic Integrity**.

Academic Integrity & Plagiarism

Don’t plagiarise. It’s that simple. Plagiarism is an infringement of intellectual copyright and a serious offence, and is not taken lightly by the university. It is easy to avoid it: whenever you help yourself to the ideas of others, make their authorship explicit by **referencing** them. In addition, use **quotation marks** when you cite them word for word. When in doubt, always reference the source you’re using: better a reference too much than too little.

On working together: I strongly encourage you to work together on questions and exercises in formal logic, and to discuss topics from the course with fellow students. It is a good idea to work with others on the problem sets, but if you do, make sure that you write up your answers on your own, in your own words. What you submit – what will be graded – must be your own work. Copying someone else’s homework is plagiarism.

Preliminary Course Schedule

We may choose to make revisions to the schedule as the semester is progressing. Check the [Moodle course website](#) regularly for up-to-date versions of the syllabus.

Modality		
1 4/3/2014	Introduction & Review of Propositional logic	Handout & Priest (2008, §§0.1–0.3, 1.1–1.5, 1.12–1.13)
2 11/3/2014	Review Predicate Logic	Handout & Priest (2008, ch. 12)
3 18/3/2014	Propositional Modal Logic	Handout & Priest (2008, ch. 2 & §§3.1–3.6)
4 25/3/2014	Predicate Modal Logic I	Handout & Priest (2008, Ch. 14)
5 1/4/2014	Predicate Modal Logic II	Handout & Priest (2008, ch. 15)

Conditionals		
6 8/4/2014	Material implication & the strict conditional	Handout & Priest (2008, §§1.6–1.10, 4.5–4.9) ; <u>optional overview</u> : von Fintel (2011)
7 6/5/2014	In defence of material implication: Grice	Handout & Grice (1975) ; <u>optional</u> : Ben-Nett (2003, pp. 20–27)
8 13/5/2014	The Lewis-Stalnaker theory	Handout & Stalnaker (1975) ; <u>optional</u> : Sider (2010, ch. 8)
9 20/5/2014	More on Lewis-Stalnaker	Handout, Stalnaker (1975) & Priest (2008, ch. 5) ; <u>optional</u> : Lewis (1973, 77–83)

Vagueness		
10 27/5/2014	The Sorites Paradox. Many-valued logics	Handout, Priest (2008, §§7.1–7.4) & Sainsbury (1995, 40–47) ; <u>optional</u> : Williamson (1994, §§4.1–4.6)
11 3/6/2014	Fuzzy Logic	Handout, Priest (2008, §§11.1–11.4) & Williamson (1994, §§4.7–4.15)
12 17/6/2014	Supervaluationism	Handout, Priest (2008, §§7.10.1–7.10.5d) & Williamson (1994, ch. 5)
13 24/6/2014	Review / Make-up session	
14 1/7/2014	In-class exam	

Supplementary Reading Material

Logic Textbooks

- L.T.F. Gamut (1991). *Logic, Language, and Meaning*, volumes I & II. London & Chicago: University of Chicago Press
- Theodore Sider (2010). *Logic for Philosophy* Oxford: OUP
- Colin Howson (1997). *Logic With Trees: An Introduction to Symbolic Logic*. London & New York: Routledge
- There are myriads of elementary logic textbooks. If you find one you like, and it allows you to follow the notation(s) we're using in class, feel free to use it. Or consult me for advice.

Modal Logic

- G.E. Hughes & M.J. Cresswell (1996). *A New Introduction to Modal Logic*. London & New York: Routledge
- James Garson (2006). *Modal Logic for Philosophers*. Cambridge: Cambridge University Press
- Advanced modal logic textbooks: van Benthem (2010), Blackburn et al. (2001), Chellas (1980)

Conditionals

- Kai von Fintel (2011). 'Conditionals.' In K. von Heusinger, C. Maienborn and P. Portner (eds.). *Semantics: An International Handbook of Natural Language Meaning*. Berlin and New York: de Gruyter
- Dorothy Edgington (2006). 'Conditionals'. *Stanford Encyclopedia of Philosophy* <http://plato.stanford.edu/entries/conditionals/>
- Jonathan Bennett (2003). *A Philosophical Guide to Conditionals*. New York and Oxford: OUP

Linguistic Semantics

- Paul Portner (2009). *Modality*. Oxford: OUP
- Angelika Kratzer (2012). *Modals and Conditionals*. Oxford: OUP
- Kai von Fintel (2006). 'Modality and Language.' In D. Borchert (ed.). *Encyclopedia of Philosophy*. Detroit: Macmillan Reference
- Eric Swanson (2008). 'Modality in Language.' *Philosophy Compass* 3(6), 1193–1207

Philosophy of Logic

- Uwe Meiner (2008). *Modalität: Möglichkeit, Notwendigkeit, Essenzialismus*. Frankfurt am Main: Klostermann
- Stephen Read (1994). *Thinking about Logic*. Oxford: OUP
- Stewart Shapiro (ed.) (2005). *The Oxford Handbook of Philosophy of Mathematics and Logic*. Oxford: OUP

- W.V.O. Quine (1986). *Philosophy of Logic*. Cambridge, MA: Harvard University Press

Some Online Logic Resources

- Glossary of First-Order Logic: <http://legacy.earlham.edu/peters/courses/logsys/glossary.htm>
- Routledge Encyclopedia of Philosophy, Logic Glossary (restricted access): www.rep.routledge.com
- John MacFarlane's Truth Table Tutor: <http://johnmacfarlane.net/TruthTables.html>
- Online video lecture: *Introduction to Modal Logic* by Rajeev P. Goré. http://videlectures.net/ssl09_gore_1ml
- The Concise Oxford Dictionary of Mathematics: www.oxfordreference.com/view/10.1093/acref/9780199235940.001.0001/acref-9780199235940

Some Online Philosophy Resources

- The Stanford Encyclopedia of Philosophy: <http://plato.stanford.edu>
- The Routledge Encyclopedia of Philosophy (restricted access): www.rep.routledge.com
- The Internet Encyclopedia of Philosophy: www.iep.utm.edu
- Academic search machine: <http://scholar.google.at>
- PhilPapers (online directory of articles and books): <http://philpapers.org>
- Guidelines on writing a philosophy paper (J. Pryor): <http://courses.dce.harvard.edu/~phils4/ptyorguidelines.html>
- Jim Pryor's very useful advice on how to read & write philosophy papers: <http://courses.dce.harvard.edu/~phils4/howtoread.html>
- Women in Philosophy: www.womenofphilosophy.com, <http://feministphilosophers.wordpress.com>

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- Gamut, L. (1991). *Logic, Language, and Meaning. Volume I: Introduction to Logic*. Chicago and London: The University of Chicago Press.
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- Meixner, U. (2008). *Modalität: Möglichkeit, Notwendigkeit, Essenzialismus*. Frankfurt a.M.: Klostermann.
- Perry, J., Bratman, M., & Fischer, J. M. (Eds.). (2012). *Introduction to Philosophy: Classical and Contemporary Readings* (6th ed.). Oxford: Oxford University Press.
- Portner, P. (2009). *Modality*. Oxford: Oxford University Press.
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- Quine, W. (1986). *Philosophy of Logic* (2nd ed.). Cambridge, MA: Harvard University Press.
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- Sainsbury, R. (1995). *Paradoxes* (3rd ed.). Cambridge: Cambridge University Press.
- Shapiro, S. (Ed.). (2005). *The Oxford Handbook of Philosophy of Mathematics and Logic*. Oxford: Oxford University Press.
- Sider, T. (2010). *Logic for Philosophy*. Oxford: Oxford University Press.
- Stalnaker, R. C. (1975). Indicative conditionals. *Philosophia*, 5(3), 269–286.
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- van Benthem, J. (2010). *Modal Logic for Open Minds*. Stanford: CSLI Publications.
- von Fintel, K. (2006). Modality and language. In D. Borchert (Ed.), *Encyclopedia of Philosophy* (2nd ed.). Detroit: Macmillan Reference.
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