Philosophy Faculty Reading List and Course Outline 2018-2019

PART IB PAPER 02:
LOGIC

SYLLABUS

Meaning
What is the connection between the meaning of a sentence and (i) the meaning of its parts, (ii) its verification conditions?

Truth
Does truth have a nature? Or is talk of truth a redundant device that has no metaphysical implications?

Logical form
What is the interest in translating sentences of English into sentences of a formal logic? Are we uncovering the deep and hidden structure of the original English sentence?

Names and descriptions
How do names refer to their bearers? Is there a significant difference between names and descriptions? How are names and descriptions to be represented in a formal logic?

Modal logic
We like to classify truths as necessary and as contingent (true but possibly false) and we seem to accept some patterns of inference involving these modal notions as valid (necessarily P; so, P). So how might we go about constructing a modal logic (for example, should we accept as valid: necessarily P; so necessarily necessarily P? Or should we accept: P; so necessarily possibly P?).

Intuitionistic logic
Intuitionists refuse to regard the law of excluded middle as a law of logic. Likewise, they refuse to treat tertium non-datur, and double-negation elimination, as logical rules of inference. Are they right?

Theories
To construct a theory of a certain subject matter, such as arithmetic, geometry, psychological states or gravitational forces, is at least to offer true generalisations about it. But what more is needed? Should the theory be presented as a set of axioms from which the rest of theory can be deduced? Should the axioms be self-evident or certain? Can we be content with an informal theory or must a theory be made formal?

Metatheory of propositional calculus
In Part IA, we introduced the system TFL, also known as the propositional calculus. Now we explore its metatheory: that is, we show that the system has certain important properties.

Prerequisites
Some acquaintance with the formal logic in Part IA is essential for the course. If you do not have this background, you should first read an introductory logic text recommended on the IA Logic reading list.

Objectives
Students will be expected to:

1) Extend their knowledge of formal logic and the philosophical issues it raises.
2) Examine critically various issues in the philosophy of language.
3) Develop their powers of philosophical analysis and argument through study of these issues.

Preliminary Reading

Students will find it useful to look at some of the following:

HAACK, Susan, Philosophy of Logics (Cambridge: Cambridge University Press, 1978). Also available online at: http://doi.org/10.1017/CBO9780511812866
PRIEST, Graham, An Introduction to Non-Classical Logic: From If to Is. 2nd ed. (Cambridge: Cambridge University Press, 2008). Also available online at: https://doi.org/10.1017/CBO9780511801174
THEORIES OF MEANING

Compositionality of Meaning

The classic text on compositionality is:

DAVISON, Donald, *Inquiries into Truth and Interpretation* (Oxford: Oxford University Press, 1984), ch. 1 'Theories of meaning and learnable languages'. Also available online at: http://doi.org/10.1093/0198246297.003.0001

These offer some useful general background concerning meaning and truth:


PLATTS, Mark de Bretton, *Ways of Meaning* (London: Routledge & Kegan Paul, 1979), ch. 2 'Theories of truth and theories of meaning'.

After that, you should look at:


Verificationism

Two classic, early defences of verificationism are:


With early discussions by:


There is a wonderful (single paragraph!) criticism of Ayer in the following review:


And for a classic attack, see at least one of:


You might also find the following surveys helpful:


For further reading try:


Perhaps the most famous attack on logical empiricism, comes from Quine:


QUINE, W.V., *The Ways of Paradox* (Cambridge, MA: Harvard University Press, 1966), ch. 10 'Necessary truth'. Also available on Moodle. [A very short piece giving more of Quine's views]
Some useful context to these is provided by:


HOOKWAY, Christopher, Quine: Language, Experience and Reality (Cambridge: Polity Press, 1988), ch. 2 'Rules and rationality'.

Nonetheless, Quine's attack comes from within empiricism. And his (holistic) empiricist theory of meaning is a natural successor of verificationism. See:

DANCY, Jonathan, Introduction to Contemporary Epistemology (Oxford: Blackwell, 1985), ch. 6 'Empiricist theories of meaning'.

HAACK, Susan, Philosophy of Logics (Cambridge: Cambridge University Press, 1978), ch. 7 'Theories of truth'. Also available online at: http://doi.org/10.1017/CBO9780511812866.008

TRUTH

Here are two very helpful introductions, to be read before you embark on anything else:


Correspondence Theories of Truth

For an overview, read:


Then read the following exchange:


Deflationary Theories of Truth (and Their Successors)

This paper inspired the deflationary theory of truth:


Various theorists have attempted to develop the deflationary theory. Here are some nice overviews:


But fullest single defence of deflationary theory is:


This has attracted many interesting critical responses, including:


The Semantic Theory of Truth

Across this topic, you will find frequent references to the work of Tarski. A detailed knowledge of Tarski's technicalities is probably not necessary, since the technical semantic concepts can be set up in alternative ways. However, some familiarity with the basic idea is absolutely essential. Try:


Deflationary Theories of Truth (and Their Successors)

This paper inspired the deflationary theory of truth:


The Semantic Theory of Truth

Across this topic, you will find frequent references to the work of Tarski. A detailed knowledge of Tarski's technicalities is probably not necessary, since the technical semantic concepts can be set up in alternative ways. However, some familiarity with the basic idea is absolutely essential. Try:


Deflationary Theories of Truth (and Their Successors)

This paper inspired the deflationary theory of truth:

Coherence Theories of Truth

You should start with a beautiful pair of classics:


And then read the following critiques of anything with a coherentist flavour:

KIRKHAM, Richard, Theories of Truth (Cambridge, MA: MIT Press, 1992), ch. 3 'Nonrealist theories'.


Further interesting reflections are found in:


QUINE, W.V., Ways of Paradox and Other Essays. Rev. ed. (Cambridge, MA: Harvard University Press, 1976), ch. 6 'Logic As A Source of Syntactical Insights'.

And for a discussion of the kinds of inference we should be trying to capture with formal logic, and why, look at:


Logical Form and Grammatical Form

Start with an excellent introduction:

SAINSBURY, Mark, Logical Forms. 2nd ed. (Oxford: Blackwell, 1991), ch. 6 'The project of formalization'.

Then look at:


Davidson on Logical Form

DAVIDSON, Donald, Essays on Actions and Events (Oxford: Oxford University Press, 1980), ch. 6 'The Logical Form of Action Sentences'. Also available online at: http://doi.org/10.1093/0199246270.003.0006. [Read also the reply to Cargile, pp. 137-46]
Then consider the following:

OLIVER, Alex, 'The Matter of Form: Logic's Beginnings', in J. Lear and A. Oliver, eds., The Force of Argument (Abingdon: Routledge, 2010), pp. 165-85. [Section 12 engages particularly with Davidson]


For further reflections on Davidson's project, and his notion of logical form, look at:

http://dx.doi.org/10.1080/00201747008601603

DAVIDSON, Donald, Inquiries into Truth and Interpretation (Oxford: Oxford University Press, 1984), ch. 4 'Semantics for Natural Language'. Also available online at: http://doi.org/10.1093/0199246297.003.0004

http://www.jstor.org/stable/2214783


For an introduction to the historical setting, start with:


These articles discuss the Gray's Elegy argument. For more detailed discussion, including the question of whether it makes contact with Frege, see:

http://www.jstor.org/stable/3327496


Finally, for interesting dissent from Russell, look at:


Other Descriptivist Theories

First look at:

GEACH, Peter, Mental Acts (London: Routledge & Kegan Paul, 1957), ch. 16 'Judgments involving identifications'.


And then read:


Descriptive versus Causal Theories of Names

The causal theory of names is most famously advanced by Kripke:


At about the same time, Putnam also offers some attacks on descriptivism, although his arguments focus more closely on natural kind terms (e.g. "water") than proper names for individuals (e.g. "Aristotle"). Nonetheless, this paper is justly regarded as a classic:

PUTNAM, Hilary, Mind, Language, and Reality (Cambridge: Cambridge University Press, 1975), ch. 12 'The meaning of "meaning"'. Also available online at: http://doi.org/10.1017/CBO9780511625251

There are some excellent discussions of the causal theory of names, e.g.

AHMED, Arif. Saul Kripke (London: Continuum, 2007), ch. 2 'Names'. Also available online at: http://lib.mylibrary.com/?id=327232


MORRIS, Michael, An Introduction to the Philosophy of Language (Cambridge: Cambridge University Press, 2007), ch. 4 'Kripke on proper names'. Also available online at: http://lib.mylibrary.com/?id=239517

For further discussions, consider:


VARIANTS OF CLASSICAL LOGIC

Elements of Modal Logic

Three philosophically minded introductions to modal logic are:


MELIA, Joseph, Modality (London: Acumen, 2003), chs. 1 & 2. Also available online at: http://lib.mylibrary.com/?id=292135

SAINSBURY, Mark, Logical Forms. 2nd ed. (Oxford: Blackwell, 2001), ch. 5 'Necessity'.

The topic is unavoidably technical. At some point, you need to gain some mastery of different modal systems and their semantics. In the end, you need to find a text book that works for you. Here are some recommendations. (Note that these textbooks typically go well beyond what is covered in the syllabus):


GARSON, James W., Modal Logic for Philosophers (Cambridge: Cambridge University Press, 2006).


Kripke was instrumental in offering a semantics for modal logics; the following paper is important, but hard-going, and you might find it easier to read it alongside Loux's article:

PRIEST, Graham, An Introduction to Non-Classical Logic, 2nd ed. (Cambridge: Cambridge University Press, 2008), chs. 2 & 3. Also available online at: https://doi.org/10.1017/CBO9780511801174

Finally, if you have a hankering for quantified modal logic, consider:


Intuitionistic Logic: Introduction

From a technical point of view, the key thing to remember is simple: intuitionistic (propositional) logic is obtained from the natural deduction system you learned in part IA by deleting both the (basic) rule TND (tertium non datur), and the (derived) rule DNE (double-negation elimination). Without these rules, you cannot prove the Law of Excluded Middle; so \( P \lor \neg P \) is not a theorem of intuitionistic logic.

For more technical details, including a Kripke-style semantics for intuitionistic logic (i.e. something which looks a lot like modal logic), you might want to look at:


PRIEST, Graham, *An Introduction to Non-Classical Logic An Introduction to Non-Classical Logic*, 2nd ed. (Cambridge: Cambridge University Press, 2008), ch. 6. Also available online at: https://doi.org/10.1017/CBO9780511801174

But our primary concern is with philosophical motivations for intuitionism. See:


Intuitionistic Logic: Elimination Rules

One might think that you can stipulate a logical connective into existence by laying down any introduction / elimination rules. But this natural thought hits a famous problem:


The link to intuitionism is drawn thus: tonk is bad because it is not "harmonious"; and classical negation is not "harmonious" either; but intuitionistic negation is "harmonious". The following is an advanced, but very thorough, treatment of this line of thought:


Intuitionistic Logic: Link with Verificationism

Michael Dummett was the foremost proponent of intuitionistic logic in recent times. His work is always linked to verificationism, and a nice introduction to this is offered by:


You should also look at the last few sections from:


Having read these, it might help to read one of Dummett's earliest statements, where the connection with verificationism is fairly clear. The article really starts to connect with intuitionism, from the point where Dummett starts to discuss "or":


This is discussed, in difficult but rewarding detail, here:


Intuitionistic Logic: Paradox of Knowability

Dummett's arguments for intuitionism seem to trade on an objection to the idea of utterly unknowable truths. But a famous argument, first presented by Fitch, suggests that we cannot maintain that all truths are knowable. You should start by reading:

And then consider two follow-up articles:


How, though, should the intuitionist react? Dummett changed his mind:


A very thorough survey of the paradox, and possible responses, is offered by:


**THEORIES**

The received understanding of (formal) theories is nicely articulated in:


This could be read alongside this accessible history to the rise of axiomatics approaches:


See also:


However, many of the most interesting philosophical questions about theories are raised and explored in a fascinating exchange of letters between Frege and Hilbert:


For commentary on this debate, read:


The Frege-Hilbert debate took place against the background of work in non-Euclidean geometries, for which you might want to read:


Finally, take a look at:


**METATHEORY OF PROPOSITIONAL CALCULUS**

The main textbook for the course is available online:


For a very brief, but very clear, discussion of proofs by induction on complexity of the sort this topic requires, look at:

PRIEST, Graham, *An Introduction to Non-Classical Logic: From If to Is*. 2nd ed. (Cambridge: Cambridge University Press, 2008), sect. 0.2. [https://doi.org/10.1017/CBO9780511801174](https://doi.org/10.1017/CBO9780511801174)
For alternative textbook treatments of similar terrain, try:


http://tellerprimer.ucdavis.edu

We welcome your suggestions for further readings that will improve and diversify our reading lists, to reflect the best recent research, and important work by members of under-represented groups. Please email your suggestions to phillib@hermes.cam.ac.uk including the relevant part and paper number. For information on how we handle your personal data when you submit a suggestion please see https://www.information-compliance.admin.cam.ac.uk/data-protection/general-data.