

Philosophy Faculty Reading List and Course Outline 2018-2019

PART II PAPER 08: PHILOSOPHICAL LOGIC

SYLLABUS

Philosophy of language:

- Understanding and truth-conditions; realism and anti-realism.
- Indeterminacy of meaning, rule-following.

Topics in logic:

- Conditionals.
- The logic of plurals

The nature of logic and mathematics:

- Logic: analytic versus empirical.
- Conventionalism about logic and mathematics.
- Logicism: traditional and contemporary.
- Intuitionism: traditional and contemporary.
- Structuralism and fictionalism.

COURSE OUTLINE

The course covers questions in (i) the philosophy of language (ii) logic (iii) the nature of logic and mathematics. These include: (i) Whether there could even be any such thing as linguistic meaning; (ii) Whether the standard logical apparatus can accommodate conditionals or plurals; (iii) What makes logical and mathematical statements both true and sometimes also knowable: are they products of human convention or descriptions of a wholly abstract world?—or something else?

Prerequisites

Some topics presuppose Part IA and/or Part IB Logic. Candidates who have not covered these may find it helpful to consult:

BLACKBURN, Simon, *Spreading the Word* (Oxford: Oxford University Press, 1984).
SMITH, Peter, *Introduction to Formal Logic* (Cambridge: Cambridge University Press, 2003).

Objectives

Students taking this paper will be expected to:

1. Study issues in philosophical logic and philosophy of language at an advanced level.

2. Acquire a sophisticated understanding of the scope, purpose and nature of logic.
3. Begin the study of the philosophy of mathematics.
4. Refine their powers of philosophical analysis and argument through study of these ideas.

Preliminary Reading

HART, W.D., ed., *Philosophy of Mathematics* (Oxford: Oxford University Press, 1996).
HOOKWAY, Christopher, *Quine* (Cambridge: Polity, 1988), chs. 8-10.
JACKSON, Frank, ed., *Conditionals* (Oxford: Oxford University Press, 1991).

READING LIST

An asterisk * indicates a classic item or one which provides a good route into a topic.

PHILOSOPHY OF LANGUAGE

Understanding and Truth-Conditions

- *DAVIDSON, Donald, *Inquiries into Truth and Interpretation* (Oxford: Oxford University Press, 1984), ch. 9 'Radical interpretation'. Also available online at: <http://doi.org/10.1093/0199246297.003.0009>
- *DAVIDSON, Donald, 'Reply to Foster', in G. Evans and J. McDowell, eds., *Truth and Meaning: Essays in Semantics* (Oxford: Oxford University Press, 1976), pp. 33-41. Reprinted in his *Inquiries into Truth and Interpretation* (Oxford: Oxford University Press, 1984). Also available online at: <http://doi.org/DOI:10.1093/0199246297.003.0012>
- *DAVIDSON, Donald, 'Truth and Meaning', *Synthese*, 17 (1967): 304-23. Reprinted in his *Inquiries into Truth and Interpretation* (Oxford: Oxford University Press, 1984). Available also online at: <http://doi.org/10.1093/0199246297.003.0002>
- *DUMMETT, Michael, 'What Is a Theory of Meaning? (II)', in G. Evans and J. McDowell, eds., *Truth and Meaning: Essays in Semantics* (Oxford: Oxford University Press, 1976), pp. 67-137. Also available online at: <http://lib.myilibrary.com/?id=81009>. Reprinted in his *The Seas of Language* (Oxford: Oxford University Press, 1993). Also available online at: <http://doi.org/10.1093/0198236212.003.0002>
- DAVIDSON, Donald, 'The Structure and Content of Truth', *Journal of Philosophy*, 87 (1990): 279-328. <http://www.jstor.org/stable/2026863>
- DUMMETT, Michael, *The Logical Basis of Metaphysics* (London: Duckworth, 1991), chs. 4, 5 & 14.
- EVNINE, Simon, *Donald Davidson* (Oxford: Polity, 1991), chs. 5-7.
- MCDOWELL, John, 'In Defence of Modesty', in B.M. Taylor, ed., *Michael Dummett: Contributions to Philosophy* (Dordrecht: Nijhoff, 1987), pp. 59-80. [See also Dummett's reply, in the same book, pp. 253-68]

Realism and Anti-Realism

(i) Dummett and His Critics

- *DUMMETT, Michael, 'The Reality of the Past', *Proceedings of the Aristotelian Society*, 69 (1969): 239-58. <http://www.jstor.org/stable/4544778>. Reprinted in his *Truth and Other Enigmas* (London: Duckworth, 1978), pp. 358-74.
- *DUMMETT, Michael, *The Seas of Language* (Oxford: Oxford University Press, 1993), ch. 20 'Realism and anti-realism'. Also available online at: <http://doi.org/10.1093/0198236212.003.0020>
- *DUMMETT, Michael, *Truth and Other Enigmas* (London: Duckworth, 1978), ch. 10 'Realism'.
- *EDGINGTON, Dorothy, 'Meaning, Bivalence, and Realism', *Proceedings of the Aristotelian Society*, 81 (1980-1): 153-73. <http://www.jstor.org/stable/4544971>
- CRAIG, Edward, 'Meaning, Use, and Privacy', *Mind*, 91 (1982): 541-64. <http://www.jstor.org/stable/2254369>
- DUMMETT, Michael, *The Logical Basis of Metaphysics* (London: Duckworth, 1991), Introduction & ch. 15 'Realism and the theory of meaning'.
- LOAR, Brian, 'Truth Beyond All Verification', in B. Taylor, ed., *Michael Dummett: Contributions to Philosophy* (Dordrecht: Nijhoff, 1987), pp. 81-116.
- MCDOWELL, John, 'On "The Reality of the Past"', in C. Hookway and P. Pettit, eds., *Action and Interpretation* (Cambridge: Cambridge University Press, 1978), pp. 127-44. Reprinted in his *Meaning, Knowledge and Reality* (Cambridge, MA: Harvard University Press, 1998), pp.295-313.
- PEACOCKE, Christopher, *Thoughts: An Essay on Content* (Oxford: Blackwell, 1986), Parts I & II.
- WRIGHT, Crispin, *Realism, Meaning, and Truth*. 2nd ed. (Oxford: Blackwell, 1993), 'Introduction'.

(ii) Putnam's Internal Realism

- BUTTON, Tim, *The Limits of Realism* (Oxford: Oxford University Press, 2013).
- LEWIS, David, 'Putnam's Paradox', *Australasian Journal of Philosophy*, 62 (1984): 221-36. <http://doi.org/10.1080/00048408412340013>
- PUTNAM, Hilary, 'Realism and Reason', *Proceedings and Addresses of the American Philosophical Association*, 50 (1977): 483-98. <http://www.jstor.org/stable/3129784>. Reprinted in his *Meaning and the Moral Sciences* (London: Routledge & Kegan Paul, 1978).
- PUTNAM, Hilary, *Reason, Truth, and History* (Cambridge: Cambridge University Press, 1981), chs. 2 & 3. Also available online at: <http://doi.org/10.1017/CBO9780511625398>

(iii) Relativism

- *DAVIDSON, Donald, *Inquiries into Truth and Interpretation* (Oxford: Oxford University Press, 1984), ch. 16 'The inscrutability of reference'. Also available online at: <http://doi.org/10.1093/0199246297.003.0016>

- *DAVIDSON, Donald, *Inquiries into Truth and Interpretation* (Oxford: Oxford University Press, 1984), ch. 13 'On the Very Idea of a Conceptual Scheme'. Also available online at: <http://doi.org/10.1093/0199246297.003.0013>
- BLACKBURN, Simon, 'Paradise Regained', *Proceedings of the Aristotelian Society Suppl. Vol.*, 79 (2005): 1-14. <http://dx.doi.org/10.1111/j.0309-7013.2005.00123.x>
- NAGEL, Thomas, *The View from Nowhere* (Oxford: Oxford University Press, 1986).
- QUINE, W.V., 'Ontological Relativity', *Journal of Philosophy*, 65 (1968). <http://www.jstor.org/stable/2024305>. Reprinted in his *Ontological Relativity and Other Essays* (New York: Columbia University Press, 1969), pp. 26-68.
- RORTY, Richard, *The Consequences of Pragmatism: Essays 1972-1980* (New York, NY: Harvester Wheatsheaf, 1982), 'Introduction'.

Indeterminacy of Meaning

- *HOOKWAY, Christopher, *Quine: Language, Experience and Reality* (Cambridge: Polity, 1988), chs. 8-10.
- *QUINE, W.V., *Word and Object* (Cambridge, MA: MIT Press, 1960), ch. 2 'Translation and meaning'.
- DAVIDSON, Donald, *Inquiries into Truth and Interpretation* (Oxford: Oxford University Press, 1984), ch.16 'The inscrutability of reference'. Also available online at: <http://doi.org/10.1093/0199246297.003.0016>
- EVANS, Gareth, 'Identity and Predication', *Journal of Philosophy*, 72 (1975): 343-63. <http://www.jstor.org/stable/2025212>. Reprinted in his *Collected Papers* (Oxford: Oxford University Press, 1985).
- HEAL, Jane, *Fact and Meaning* (Oxford: Blackwell, 1989), chs. 2-4.
- LEWIS, David, *Philosophical Papers*. Vol. I (Oxford: Oxford University Press, 1983), ch. 8 'Radical Interpretation'. Also available online at: <http://doi.org/10.1093/0195032047.003.0008>
- MCGEE, Vann, 'Inscrutability and Its Discontent', *Noûs*, 39 (2005): 397-425. <http://onlinelibrary.wiley.com/doi/10.1111/j.0029-4624.2005.00507.x/epdf>
- QUINE, W.V., 'Ontological Relativity', in his *Ontological Relativity and Other Essays* (New York: Columbia University Press, 1969), pp. 26-68.
- QUINE, W.V., *Theories and Things* (Cambridge, MA: Harvard University Press, 1981), ch. 1 'Things and Their Place in Theories'.

Rule-Following

- *KRIPKE, Saul, *Wittgenstein on Rules and Private Language* (Oxford: Blackwell, 1982), chs. 1 & 2. Also available online at: <http://lib.myilibrary.com/?id=174146>
- *WITTGENSTEIN, Ludwig, *Philosophical Investigations*, translated by G.E.M. Anscombe (Oxford: Blackwell, 1958), sects. 143-242. Also available online at: <http://pm.nlx.com>
- AHMED, Arif, *Saul Kripke* (London: Continuum, 2007), ch. 4 'Rule-following'. Also available online at: <http://lib.myilibrary.com/?id=327232>
- BLACKBURN, Simon, 'The Individual Strikes Back', *Synthese*, 58 (1984): 281-302. <http://www.jstor.org/stable/20115970>

- BOGHOSSIAN, Paul, 'The Rule-Following Considerations', *Mind*, 98 (1989): 507-49. <http://www.jstor.org/stable/2255039>
- CRAIG, Edward, 'Privacy and Rule Following', in J. Butterfield, ed., *Language, Mind and Logic* (Cambridge: Cambridge University Press, 1986), pp. 169-86.
- MCDOWELL, John, 'Wittgenstein on Following a Rule', *Synthese*, 58 (1984): 325-63. <http://www.jstor.org/stable/20115972>. Reprinted in A.W. Moore, ed., *Meaning and Reference* (Oxford: Oxford University Press, 1993).
- STROUD, Barry, 'Wittgenstein and Logical Necessity', *Philosophical Review*, 74 (1965): 504-18. <http://www.jstor.org/stable/2183126>. Reprinted in E. Klemke, ed., *Essays on Wittgenstein* (Chicago, IL: University of Illinois Press, 1971); and also in P.K. Moser, ed., *A Priori Knowledge* (Oxford: Oxford University Press, 1987).
- WRIGHT, Crispin, 'Wittgenstein's Rule-Following Considerations and the Central Project of Theoretical Linguistics', in A. George, ed., *Reflections on Chomsky* (Oxford: Blackwell, 1989), pp. 233-64. Reprinted in his *Rails to Infinity* (Cambridge, MA: Harvard University Press, 2001).

TOPICS IN LOGIC

Conditionals

(i) Indicatives

- *BENNETT, Jonathan, *A Philosophical Guide to Conditionals* (Oxford: Clarendon Press, 2003), chs. 2 & 3. Also available online at: <http://lib.myilibrary.com/?id=200722>. [Also see chs. 4 & 5 for an introduction to Lewis's trivality result]
- *STALNAKER, Robert, 'Indicative Conditionals', *Philosophia* 5(1975): 269-86. Reprinted in F. Jackson, ed., *Conditionals* (Oxford: Oxford University Press, 1991). <http://doi.org/10.1007/BF02379021>
- EDGINGTON, Dorothy, 'On Conditionals', *Mind*, 104 (1995): 235-329. <http://www.jstor.org/stable/2254793>
- FINE, Kit, 'Counterfactuals without Possible Worlds', *Journal of Philosophy*, 109, no. 3 (2012): 221-46. <http://www.journalofphilosophy.org/articles/issues/109/3/1.pdf>
- JACKSON, Frank, *Conditionals* (Oxford: Blackwell, 1987), chs. 1, 2 & 5. [This book is other than the collection *Conditionals*, which he edited]
- KRATZER, Angelika, *Modals and Conditionals* (Oxford: Oxford University Press, 2012), ch. 4 'Conditionals'. Also available online at: <http://doi.org/10.1093/acprof:oso/9780199234684.003.0004>
- LEWIS, David, 'Probabilities of Conditionals and Conditional Probabilities', *Philosophical Review*, 85 (1976): 297-315. <http://www.jstor.org/stable/2184045>. Reprinted with a postscript, in F. Jackson, ed., *Conditionals* (Oxford: Oxford University Press, 1991).
- LEWIS, David, 'Probabilities of Conditionals and Conditional Probabilities (II)', *Philosophical Review*, 95 (1986): 581-89. <http://www.jstor.org/stable/2185051>. Reprinted in F. Jackson, ed., *Conditionals* (Oxford: Oxford University Press, 1991).
- MELLOR, D.H., 'How to Believe a Conditional', *Journal of Philosophy*, 90 (1993): 233-48. <http://www.jstor.org/stable/2940911>

- ROTHSCHILD, Daniel, 'Do Indicative Conditionals Express Propositions?' *Noûs*, 47 (2013): 49-68. <http://doi.org/10.1111/j.1468-0068.2010.00825.x>

(ii) Counterfactuals

- *BENNETT, Jonathan, *A Philosophical Guide to Conditionals* (Oxford: Clarendon Press, 2003), chs. 10-13 (Possible worlds semantics), 18-19 (Direction of time). Also available online at: <http://lib.myilibrary.com/?id=200722>
- *LEWIS, David, *Counterfactuals* (Oxford: Blackwell, 1973; revised printing 1986), chs. 1 & 3. [Possible worlds semantics]
- EDGINGTON, Dorothy, 'Counterfactuals and the Benefit of Hindsight', in P. Dowe and P. Noordhof, eds., *Cause and Chance* (London: Routledge, 2004), pp. 12-27.
- LEWIS, David, 'Counterfactual Dependence and Time's Arrow', *Noûs*, 13 (1979): 455-76. Reprinted with postscripts in his *Philosophical Papers*. Vol. 2 (Oxford: Oxford University Press, 1986), ch.17. Also available online at: <http://doi.org/10.1093/0195036468.003.0002>. Also available without all the postscripts in F. Jackson, ed., *Conditionals* (Oxford: Oxford University Press, 1991).
- STALNAKER, Robert, 'A Theory of Conditionals', in E. Sosa, ed., *Causation and Conditionals* (Oxford: Oxford University Press, 1975), pp. 165-79. Reprinted in F. Jackson, ed., *Conditionals* (Oxford: Oxford University Press, 1991). Also available on [Moodle](#). [Possible worlds semantics]

The distinction assumed here between indicative and counterfactual conditional has itself provoked criticism, see e.g.:

- DUDMAN, Victor H., 'Indicative and Subjunctive Conditionals', *Analysis*, 48 (1988): 113-22. <http://www.jstor.org/stable/3328212>

And, for an overview:

- BENNETT, Jonathan, *A Philosophical Guide to Conditionals* (Oxford: Clarendon Press, 2003), ch.1 'Introduction'. Also available online at: <http://lib.myilibrary.com/?id=200722>

The Logic of Plurals

- *OLIVER, Alex, and Timothy SMILEY, *Plural Logic* (Oxford: Oxford University Press, 2013), ch. 1 (introductory), chs. 3-4 (singularist analyses), chs. 5-10 (pluralism developed), chs. 11-14 (formal systems).
- BOULOS, George, 'To Be Is to Be a Value of a Variable (or to Be Some Values of Some Variables)', *Journal of Philosophy*, 81 (1984): 430-49. <http://www.jstor.org/stable/2026308>. Reprinted in his *Logic, Logic, and Logic* (Cambridge, MA: Harvard University Press, 1998).
- DUMMETT, Michael, *Frege: Philosophy of Mathematics* (London: Duckworth, 1991).
- HAZEN, Allen P., 'Against Pluralism', *Australasian Journal of Philosophy*, 71 (1993): 132-44. <http://doi.org/10.1080/00048409312345142>

- LEWIS, David, *Parts of Classes* (Oxford: Blackwell, 1991), sect. 3.2.
- RAYO, Agustín, 'Word and Objects', *Noûs*, 36 (2002): 436-64.
<http://www.jstor.org/stable/3506075>
- SHARVY, Richard, 'A More General Theory of Definite Descriptions', *Philosophical Review*, 89 (1980): 607-24. <http://www.jstor.org/stable/3506075>
- SIMONS, Peter, 'Plural Reference and Set Theory', in B. Smith, ed., *Parts and Moments: Studies in Logic and Formal Ontology* (Munich: Philosophia, 1982).
- YI, Byeong-uk, 'Is Two a Property?' *Journal of Philosophy*, 96 (1999): 63-90.
<http://www.jstor.org/stable/2564701>

THE NATURE OF LOGIC AND MATHEMATICS

Logic: Analytic vs Empirical

- BOSTOCK, David, 'Logic and Empiricism', *Mind*, 99, no. 396, (1990): 571–82.
www.jstor.org/stable/2255021
- DUMMETT, Michael, *Truth and Other Enigmas* (London: Duckworth, 1978), ch. 16 'Is logic empirical?'
- HAZEN, Allen P., 'Logic and Analyticity', in A.C. Varzi, ed., *The Nature of Logic* (Stanford: Center for the Study of Language and Information, 1999).
- PUTNAM, Hilary, 'The Logic of Quantum Mechanics', in his *Philosophical Papers, Vol. I. Mathematics, Matter and Method* (Cambridge: Cambridge University Press, 1979), pp. 174-97. Also available online at:
<http://doi.org/10.1017/CBO9780511625268.012>
- SHAPIRO, Stewart, 'The Status of Logic', in P. Boghossian and C. Peacocke, eds., *New Essays on the a Priori* (Oxford: Oxford University Press, 2000), pp. 333-66. Also available online at: <http://doi.org/10.1093/0199241279.003.0014>

Conventionalism about Logic and Mathematics

- *QUINE, W.V., 'Carnap and Logical Truth', *Synthese*, 12 (1960): 350-74.
<http://www.jstor.org/stable/20114356>. Reprinted in his *The Ways of Paradox and Other Essays*. Rev. ed. (Cambridge, MA: Harvard University Press, 1976).
- *QUINE, W.V., 'Truth by Convention', in his *The Ways of Paradox and Other Essays*. Rev. ed. (Cambridge, MA: Harvard University Press, 1976), pp. 77-106. Reprinted in P. Benacerraf and H. Putnam, eds., *Philosophy of Mathematics: Selected Readings*. 1st ed. only (Oxford: Blackwell, 1964).
- ARNOLD, Jack, and Stewart SHAPIRO, 'Where in the (World Wide) Web of Belief Is the Law of Non-Contradiction', *Noûs*, 41, no. 2 (2007): 276-97.
<http://doi.org/10.1111/j.1468-0068.2007.00647.x>
- CRAIG, Edward, 'Arithmetic and Fact', in I. Hacking, ed., *Exercises in Analysis* (Cambridge: Cambridge University Press, 1985), pp. 89-112.
- CRAIG, Edward, 'The Problem of Necessary Truth', in S. Blackburn, ed., *Meaning, Reference and Necessity* (Cambridge: Cambridge University Press, 1975), pp. 1-31.

- DUMMETT, Michael, *The Seas of Language* (Oxford: Oxford University Press, 1993), ch. 19 'Wittgenstein on necessity: some reflections'. Also available online at:
<http://doi.org/10.1093/0198236212.003.0019>. Reprinted in P. Clark and B. Hale, eds., *Reading Putnam* (Oxford: Blackwell, 1994).
- DUMMETT, Michael, 'Wittgenstein's Philosophy of Mathematics', *Philosophical Review*, 68 (1959): 324-48. <http://www.jstor.org/stable/2182566>. Reprinted in his *Truth and Other Enigmas* (London: Duckworth, 1978), pp. 166-185; and in P. Benacerraf and H. Putnam, eds., *Philosophy of Mathematics: Selected Readings*. 1st ed. only (Oxford: Blackwell, 1964).
- GÖDEL, Kurt, *Collected Works*. Vol. 3 (Oxford: Oxford University Press, 1995), pp. 356-62 (Is mathematics syntax of language?).
- GOLDFARB, Warren, 'The Philosophy of Mathematics in Early Positivism', in R.N. Giere and A.W. Richardson, eds., *Origins of Logical Empiricism* (Minneapolis, MN: University of Minnesota Press, 1996), pp. 213-30.
- POTTER, Michael, *Reason's Nearest Kin* (Oxford: Oxford University Press, 2000), ch. 11 'Carnap'. Also available online at:
<http://doi.org/10.1093/acprof:oso/9780199252619.003.0012>
- WRIGHT, Crispin, 'Inventing Logical Necessity', in J. Butterfield, ed., *Language, Mind and Logic* (Cambridge: Cambridge University Press, 1986), pp. 187-209.

Logicism: Traditional and Contemporary

(i) Introductory

- GEORGE, Alexander, and Daniel J. VELLEMAN, *Philosophies of Mathematics* (Oxford: Blackwell, 2002), ch. 2.
- KÖRNER, Stephan, *The Philosophy of Mathematics* (London: Hutchinson, 1960), chs. 2 & 3.

(ii) Fregean Logicism

- *FREGE, Gottlob, *The Foundations of Arithmetic*, translated by J.L. Austin (Oxford: Blackwell, 1950). [In German: *Die Grundlagen der Arithmetik*]
- *PARSONS, Charles, 'Frege's Theory of Number', in his *Mathematics in Philosophy: Selected Essays* (Ithaca, NY: Cornell University Press, 1983), pp. 150-75. Also available on [Moodle](http://moodle.org)
- BOOLOS, George, 'The Consistency of Frege's Foundations of Arithmetic', in W.D. Hart, ed., *The Philosophy of Mathematics* (Oxford: Oxford University Press, 1996), pp. 185-202.
- GILLIES, Donald, *Frege, Dedekind and Peano on the Foundations of Arithmetic* (Assen: Van Gorsum, 1982). [Clear exposition of the main ideas of the *Grundlagen*]
- POTTER, Michael, *Reason's Nearest Kin* (Oxford: Oxford University Press, 2000), chs. 2 & 4. Also available online at:
<http://doi.org/10.1093/acprof:oso/9780199252619.001.0001>

(iii) The Context Principle

- DUMMETT, Michael, *Frege: Philosophy of Language* (London: Duckworth, 1973), ch. 14.

- DUMMETT, Michael, *Frege: Philosophy of Mathematics* (London: Duckworth, 1991), chs. 16-18.
- FIELD, Hartry H., 'Critical Notice: Frege's Conception of Numbers as Objects by Crispin Wright', *Canadian Journal of Philosophy*, 14 (1984): 637-62.
<http://www.jstor.org/stable/40231394>. Reprinted as 'Platonism for Cheap? Crispin Wright on Frege's Context Principle', in his *Realism, Mathematics and Modality* (Oxford: Blackwell, 1989), pp. 147-70.

(iv) Neo-Fregean Logicism

- *HALE, Bob, and Crispin WRIGHT, *The Reason's Proper Study* (Oxford: Oxford University Press, 2001), Introduction. Also available online at:
<http://doi.org/10.1093/0198236395.001.0001>
- HALE, Bob, 'Dummett's Critique of Wright's Attempt to Resuscitate Frege', *Philosophia Mathematica*, 2 (1994): 122-47. <http://doi.org/10.1093/philmat/2.2.122>
- SULLIVAN, Peter, and Michael POTTER, 'Hale on Caesar', *Philosophia Mathematica*, 5 (1997): 135-52. <http://philmat.oxfordjournals.org/content/5/2/135.full.pdf+html>
- WRIGHT, Crispin, *Frege's Conception of Numbers as Objects* (Aberdeen: Aberdeen University Press, 1983).

(v) Russellian Logicism

- *RUSSELL, Bertrand, *Introduction to Mathematical Philosophy* (London: Allen & Unwin, 1919).
- GÖDEL, Kurt, 'Russell's Mathematical Logic', in P.A. Schilpp, ed., *The Philosophy of Bertrand Russell* (Evanston, Chicago: Northwestern University, 1944), pp. 125-53. Reprinted in P. Benacerraf and H. Putnam, eds, *Philosophy of Mathematics: Selected Readings* (Oxford: Blackwell, 1964); 2nd ed. (Cambridge: Cambridge University Press, 1983); and in Gödel's *Collected Works*. Vol. 2 (Oxford: Oxford University Press, 1990).
- POTTER, Michael, *Reason's Nearest Kin* (Oxford: Oxford University Press, 2000), chs. 5-8. Also available online at:
<http://doi.org/10.1093/acprof:oso/9780199252619.001.0001>
- RAMSEY, Frank P., 'The Foundations of Mathematics', in his *The Foundations of Mathematics and Other Logical Essays* (London: Routledge, 2000), pp. 1-61. Reprinted in his *Philosophical Papers*, edited by D.H. Mellor (Cambridge: Cambridge University Press, 1990), pp. 164-224.

Intuitionism: Traditional and Contemporary

(i) The Nature of Mathematical Intuition

- DUMMETT, Michael, *The Seas of Language* (Oxford: Oxford University Press, 1993), ch. 18 'What is mathematics about?' Also available online at:
<http://doi.org/10.1093/0198236212.003.0018>. Reprinted in A. George, ed., *Mathematics and Mind* (Oxford: Oxford University Press, 1994).
- ISAACSON, Daniel, 'Mathematical Intuition and Objectivity', in A. George, ed., *Mathematics and Mind* (Oxford: Oxford University Press, 1994), pp. 118-40.

- PARSONS, Charles, 'Intuition and Number', in A. George, ed., *Mathematics and Mind* (Oxford: Oxford University Press, 1994), pp. 141-57.
- PARSONS, Charles, 'Mathematical Intuition', *Proceedings of the Aristotelian Society*, 80 (1980): 145-68. <http://www.jstor.org/stable/4544956>. Reprinted in P. Yourgrau, ed., *Demonstratives* (Oxford: Oxford University Press, 1990).

(ii) Kant

- *KANT, Immanuel, *Critique of Pure Reason*. [Consult index for sections on 'arithmetic', 'geometry' or 'mathematics']
- *PARSONS, Charles, 'Kant's Philosophy of Arithmetic', in his *Mathematics in Philosophy: Selected Essays* (Ithaca, NY: Cornell University Press, 1983), pp. 110-49. Reprinted in C.J. Posy, ed., *Kant's Philosophy of Mathematics* (Dordrecht: Kluwer, 1992), pp. 43-79.
- PARSONS, Charles, 'Arithmetic and the Categories', *Topoi*, 3 (1984): 109-21. Reprinted in C.J. Posy, ed., *Kant's Philosophy of Mathematics* (Dordrecht: Kluwer, 1992), pp. 135-58. <http://doi.org/10.1007/BF00149783>
- POTTER, Michael, *Reason's Nearest Kin* (Oxford: Oxford University Press, 2000), ch.1 'Kant'. Also available online at:
<http://doi.org/10.1093/acprof:oso/9780199252619.003.0002>

(iii) Brouwerian Intuitionism

- *GEORGE, Alexander, and Daniel J. VELLEMAN, *Philosophies of Mathematics* (Oxford: Blackwell, 2002), ch. 4 'Intuitionism'.
- BROUWER, Luitzen E.J., 'Intuitionism and Formalism', *Bulletin of the American Mathematical Society*, 20 (1913): 81-96. Also available online at:
<http://projecteuclid.org/euclid.bams/1183422499>
- DETLEFSEN, Michael, 'Brouwerian Intuitionism', *Mind*, 99 (1990): 501-34.
<http://www.jstor.org/stable/2255018>. Reprinted in M. Detlefsen, ed., *Proof and Knowledge in Mathematics* (London: Routledge, 1992); and in D. Jacquette, ed., *The Philosophy of Mathematics: An Anthology* (Oxford: Blackwell, 2001).
- HEYTING, Arend, 'The Intuitionist Foundations of Mathematics', in P. Benacerraf and H. Putnam, eds., *Philosophy of Mathematics: Selected Readings* (Oxford: Blackwell, 1964), pp. 52-61. Also available in a 2nd ed. (Cambridge: Cambridge University Press, 1983) and also in D. Jacquette, ed., *The Philosophy of Mathematics: An Anthology* (Oxford: Blackwell, 2001).
- KÖRNER, Stephan, *The Philosophy of Mathematics* (London: Hutchinson, 1960), chs. 6 & 7.
- MOORE, Adrian W., 'A Problem for Intuitionism: the Apparent Possibility of Performing Infinitely Many Tasks in a Finite Time', *Proceedings of the Aristotelian Society* 90 (1989): 17-34. <http://www.jstor.org/stable/4545106>. Reprinted in D. Jacquette, ed., *The Philosophy of Mathematics: An Anthology* (Oxford: Blackwell, 2001).

(iv) Dummettian Intuitionism

- *DUMMETT, Michael, *Truth and Other Enigmas* (London: Duckworth, 1978), ch. 14 'The philosophical basis of intuitionistic logic'. Reprinted in H. Putnam and P. Benacerraf, eds., *Philosophy of Mathematics: Selected Readings*. 2nd ed. (Cambridge: Cambridge University Press, 1983); and in W. D. Hart, ed., *The Philosophy of Mathematics* (Oxford: Oxford University Press, 1996).
- BURGESS, John, 'Dummett's Case for Intuitionism', *History and Philosophy of Logic*, 5 (1984): 177-94. <http://doi.org/10.1080/01445348408837069>
- DUMMETT, Michael, *Elements of Intuitionism* (Oxford: Oxford University Press, 1977; 2nd ed. 2000), Introductory remarks and chs. 1 & 7.
- DUMMETT, Michael, *Frege: Philosophy of Mathematics* (London: Duckworth, 1991), ch. 24 'The problem of mathematical objects'.
- PRAWITZ, Dag, 'Meaning and Proofs: On the Conflict between Classical and Intuitionistic Logic', *Theoria*, 43, no. 1 (1977): 2-40. <http://onlinelibrary.wiley.com/doi/10.1111/j.1755-2567.1977.tb00776.x/epdf>

Structuralism

(i) General

- *BENACERRAF, Paul, 'What Numbers Could Not Be', *Philosophical Review*, 74 (1965): 47-73. <http://www.jstor.org/stable/2183530>. Reprinted in P. Benacerraf and H. Putnam, eds., *Philosophy of Mathematics: Selected Readings*. 2nd ed. only (Cambridge: Cambridge University Press, 1983).
- *SHAPIRO, Stewart, *Philosophy of Mathematics: Structure and Ontology* (Oxford: Oxford University Press, 1997), ch. 3 'Structure'. Also available online at: <http://doi.org/10.1093/0195139305.003.0004>
- DEDEKIND, Richard, *Essays on the Theory of Numbers* (New York: Dover, 1963), 'The nature and meaning of numbers', only Preface, pp. 31-43. Also available on [Moodle](#)
- PARSONS, Charles, 'The Structuralist View of Mathematical Objects', *Synthese*, 84 (1990): 303-46. <http://www.jstor.org/stable/20116823>. Reprinted in W. D. Hart, ed., *The Philosophy of Mathematics* (Oxford: Oxford University Press, 1996).
- POTTER, Michael, *Reason's Nearest Kin* (Oxford: Oxford University Press, 2000), ch. 3 'Dedekind'. Also available online at: <http://doi.org/10.1093/acprof:oso/9780199252619.003.0004>

(ii) Modal Structuralism

- HELLMAN, Geoffrey, 'Modal-Structural Mathematics', in A.D. Irvine, ed., *Physicalism in Mathematics* (Dordrecht: Kluwer, 1990), pp. 307-30. Or see his *Mathematics without Numbers* (Oxford: Oxford University Press, 1989), pp. 1-44. Also available online at: <http://doi.org/10.1093/0198240341.001.0001>
- PUTNAM, Hilary, 'Mathematics without Foundations', in P. Benacerraf and H. Putnam, eds., *Philosophy of Mathematics: Selected Readings*. Only 2nd ed. (Cambridge: Cambridge University Press, 1983), pp. 295-311. Reprinted in W. D. Hart, ed., *The Philosophy of Mathematics* (Oxford: Oxford University Press, 1996).

Fictionalism

(i) Benacerraf's Problem

- *BENACERRAF, Paul, 'Mathematical Truth', *Journal of Philosophy*, 70 (1973): 661-79. <http://www.jstor.org/stable/2025075>. Reprinted in P. Benacerraf and H. Putnam, eds., *Philosophy of Mathematics: Selected Readings*. 2nd ed. only (Cambridge: Cambridge University Press, 1983).
- BELL, D. and W.D. HART, 'The Epistemology of Abstract Objects', *Aristotelian Society Suppl. Vol.*, 53 (1979): 135-65. <http://www.jstor.org/stable/4106809>. Reprinted in W.D. Hart, ed., *The Philosophy of Mathematics* (Oxford: Oxford University Press, 1996).
- HEMPEL, Carl, 'On the Nature of Mathematical Truth', *The American Mathematical Monthly*, 52 (1945): 543-56. <http://www.jstor.org/stable/2306103>. Reprinted in P. Benacerraf and H. Putnam *Philosophy of Mathematics: Selected Readings* (Oxford: Blackwell, 1964; 2nd ed. 1983).
- MADDY, Penelope, *Realism in Mathematics* (Oxford: Oxford University Press, 1990), chs. 1-3. Also available online at: <http://doi.org/10.1093/019824035X.001.0001>

(ii) The Indispensability Argument

- *COLYVAN, Mark, *The Indispensability of Mathematics* (Oxford: Oxford University Press, 2001), chs. 1 & 2. Also available online at: <http://doi.org/10.1093/019513754X.001.0001>
- BURGESS, John, 'Why I Am Not a Nominalist', *Notre Dame Journal of Formal Logic*, 24 (1983): 93-105. Also available online at: <http://projecteuclid.org/euclid.ndjfl/1093870223>
- FIELD, Hartry H., *Realism, Mathematics, and Modality* (Oxford: Blackwell, 1989), Introduction.
- LENG, Mary, *Mathematics and Reality* (Oxford: Oxford University Press, 2010), chs. 3-5. Also available online at: <http://doi.org/10.1093/acprof:oso/9780199280797.001.0001>
- PUTNAM, Hilary, *Philosophy of Logic* (New York: Harper & Row, 1971).

(iii) The Dispensability Argument

- *FIELD, Hartry H., *Science without Numbers* (Oxford: Blackwell, 1980), preliminary remarks and chs. 1-5.
- MACBRIDE, Fraser, 'Listening to Fictions: A Study of Fieldian Nominalism', *British Journal of Philosophy of Science*, 50 (1999): 431-55. <http://www.jstor.org/stable/40072241>
- SHAPIRO, Stewart, 'Conservativeness and Incompleteness', *Journal of Philosophy*, 80, no. 9 (1983): 521-31. <http://doi.org/10.2307/2026112>

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