

## Philosophy Faculty Reading List 2011-2012

### PART IA PAPER 03: LOGIC

#### SYLLABUS

The Part IA logic course is in two parts, one on *formal logic* and one on *philosophical logic*.

#### Section A: Formal Logic

- Basic concepts: formalized languages; object-language and metalanguage; use and mention; validity, implication and consistency.
- Propositional logic: truth-functions, tautologies, proof; soundness and completeness.
- Introduction to predicate logic: the language of quantifiers and variables; validity and counterexamples; elements of the logic of identity.
- Classes and relations.
- Elements of probability calculus.

#### Section B: Philosophical Logic

- Problems of translation between natural and formal languages.
- The elements of arguments: sentences, statements and propositions.
- The theory of descriptions.
- Necessity, analyticity and the a priori.
- Meaning and verification.

#### The way this reading list is structured

Think of work on a topic in philosophy as having two stages. (A) Getting a grounding in an area, doing exercises/writing a supervision essay, and getting feedback (to confirm that you have grasped the basics, and to suggest problems to think about, further lines to pursue etc.). (B) Additional reading and work on the topic (perhaps to be further discussed in Easter term additional supervisions, revision classes etc.). If you always get stuck at stage (A) you won't do well in tripos! So:

**Readings are divided into (A) and (B) lists below: some attempt is made to put material in the basic (A)-lists into a sensible reading order. (B)-lists are for dipping into (no-one expects you to read everything on the (B) list on a topic, but do read something).**

The divisions are of course somewhat arbitrary, and different supervisors will want to take different views about what is basic – needed to make a shot at a supervision essay – and what pushes on the debate rather further. Still, it is better to make some crude divisions than to present undifferentiated and perhaps daunting lists without any commentary.

## FORMAL LOGIC

### (1) Basic Concepts, Propositional Logic, Predicate Logic

(A) The textbook for this part of the course is:

SMITH, P., *An Introduction to Formal Logic* (Cambridge: Cambridge University Press, 2003: repr. with corrections 2009) [Omitting ch. 30.]

The book's website [[www.logicmatters.net](http://www.logicmatters.net)] gives answers to the exercises. Some further support materials can also be found there.

**NB** The corrected reprint has numerous improvements compared with the first printing, so you need to ensure that you get the right version. To tell the versions apart, look at the verso of the main title page and check that it says, half way down, "Reprinted with corrections 2009".

*IFL* is elementary: but here are two even more elementary books which might be life-savers if you start off a bit symbol-phobic:

GUTTENPLAN, S., *The Languages of Logic* (Oxford: Blackwell, 1986; 2nd ed.; 1997).

TOMASSI, P., *Logic* (London: Routledge, 1999).

The following is somewhat more advanced than those two, and particularly good on discussing the relationship between ordinary language constructions and the formal languages of logic:

LEPORE, E., *Meaning and Argument* (Oxford: Blackwell, 2000).

If you want parallel reading at a similar level to *IFL*:

HODGES, W., *Logic* (London: Penguin, 1977). [Like *IFL*, does logic 'by trees'. For decades, the textbook for the Oxford introductory logic course.]

TELLER, P., *A Modern Formal Logic Primer* (New Jersey: Prentice Hall, 1989). Now freely available online at <http://tellerprimer.ucdavis.edu> (though the scanned PDFs aren't of great quality). [Also very clearly written, particularly good on translating ordinary language into the language of predicate logic. Not only does 'logic by trees' but also covers so-called 'natural deduction'.]

(B) You ought to read a bit more about the basic notion of validity and logical consequence. See:

BEALL, J. and RESTALL, G., 'Logical Consequence', *Stanford Encyclopedia of Philosophy*. [<http://plato.stanford.edu/entries/logical-consequence>]

SMILEY, T., 'Consequence, conceptions of.' *Routledge Encyclopedia of Philosophy*. [[www.rep.routledge.com/article/Y022](http://www.rep.routledge.com/article/Y022)]

For more on use and mention, and quotation conventions of the kind introduced in an elementary way in *IFL* Ch. 10, see:

QUINE, W. V. O., *Mathematical Logic*. Rev. ed. (Cambridge, Mass.: Harvard University Press, 1951), §§ 4-6. [A classic discussion of matters to do with use and mention, introduces 'Quine quotes'.]

BOOLOS, G., 'Quotational Ambiguity', in *On Quine*, ed. by P. Leonardi and M. Santambrogio (Cambridge: Cambridge University Press, 1995), pp. 283-96. Also in his *Logic, Logic and Logic* (Cambridge, Mass.: Harvard University Press, 1998), pp. 392-405. Also available on [Camtools](#). [Just for enthusiasts! But it shows that there are surprising difficulties in getting things straight about quotation.]

One of deepest ideas that we meet in elementary formal logic is the quantifier/variable treatment of quantifiers primarily due to Frege. Every logic book has an account of the technicalities of how this works, and you could also read:

HAACK, S., *Philosophy of Logics* (Cambridge: Cambridge University Press, 1978). [Ch. 4.]

But the modern classic discussion of the motivation for Frege's innovation is:

DUMMETT, M., *Frege: Philosophy of Language* (London: Duckworth, 1973; 2<sup>nd</sup> edn. 1981), Ch. 2. Reprinted in R.I.G. Hughes, ed., *A Philosophical Companion to First-Order Logic* (Indianapolis, IN: Hackett, 1993).

This is not easy (and not made easier by Dummett's habit of writing very long chapters with no section-breaks). But in fact you only really need to read pp. 9–22 to get the core idea: and for a helping hand breaking down the chapter into bite-sized chunks see:

SMITH, P., 'Reading notes on Dummett on Quantifiers', available at: [www.logicmatters.net/resources/pdfs/DummettNotes.pdf](http://www.logicmatters.net/resources/pdfs/DummettNotes.pdf).

Now turning to more general reading, for a very accessible, brief but wide-ranging, introduction to key logical ideas see:

PRIEST, G., *Logic: A Very Short Introduction* (Oxford: Oxford University Press, 2000).

Even if logic isn't your thing, you should get something out of Priest's little book. And for an even more fun read you could try:

SMULLYAN, R., *What is the Name of This Book?* (London: Penguin, 1981).

Raymond Smullyan has written a number of books of ingenious logic puzzles,

particular of the Knight/Knave variety. If you have a taste for that kind of thing, this is particularly instructive collection from which you can actually learn an amount of 'real' logic.

Finally, back to formal logic textbooks, here are two more:

JEFFREY, R., *Formal Logic: its Scope and Limits* (New York: McGraw-Hill, 1967; 4th rev. ed.: 2006).

CHISWELL, I and HODGES, W., *Mathematical Logic* (Oxford: Oxford University Press, 2007).

Jeffrey's book is a very elegant modern classic, covering the same ground as *IFL* and a bit more, but at half the length. This might therefore appeal to those who think *IFL* goes too slowly! And despite the title, Chiswell and Hodges in fact, is n't hugely more advanced than *IFL* either. But the style is very different indeed: it is by mathematicians for mathematicians. If you are mathematically minded, you could well enjoy this even at IA level.

## (2) Class and relations

(A) This part of the course introduces the notion of 'set' or 'class' and standard notation for talking about sets. It also expands the discussion of various kinds of relation, already touched on in *IFL* Ch. 32. The text is:

STEINHART, E., *More Precisely: The Math You Need to Do Philosophy* (Peterborough, Ont.: Broadview Press, 2009). [Ch.1 'Sets' & ch.2 'Relations'.]

The book's website is at [www.ericsteinhart.com/TOOLS/tools-resources.html](http://www.ericsteinhart.com/TOOLS/tools-resources.html). Some further support materials and exercises can be found there.

(B) Everyone could profit from looking at:

HODGES, W., *Logic* (London: Penguin, 1977). §§ 30-33. [Another introductory treatment of relations.]

POLLOCK, J. L., *Technical Methods in Philosophy* (Boulder: Westview, 1990), Ch. 1, §§1–3. Freely downloadable from: <http://tinyurl.com/c7ogkc>. [An alternative to Steinhart.]

Mathematicians might prefer some brisker introduction to core concepts and notation of set theory. Many maths books (whether specifically on set theory or not) contain what you need. Try:

DEVLIN, K. *The Joy of Sets* (New York: Springer, 2<sup>nd</sup> ed. 1993) [ch. 1]

## (3) Elements of Probability Calculus

(A) This part of the course (re)introduces the probability calculus familiar to

many from school mathematics. The text is:

STEINHART, E., *More Precisely: The Math You Need to Do Philosophy* (Peterborough, Ont.: Broadview Press, 2009). [ch. 5]

**(B)** For alternative introductions to the calculus, two accessible treatments are:

HACKING, I., *Introduction to Probability and Inductive Logic* (Cambridge: Cambridge University Press, 2001), [especially the part 'How to Calculate Probabilities'.]

KYBURG, H. E., *Probability and Inductive Logic* (London: Macmillan, 1970) [ch. 2. Also in the Faculty Library Offprint Collection and on [Camtools](#)]

Although not strictly part of the IA syllabus, it is also worth having a quick look at something on the interpretations of the idea of probability. (We talk about objective chances, as in the probability of an atom decaying in a certain period; we talk about the probability of something's being the case, given some evidence; but also we talk about 'subjective probabilities', the degrees of belief we have in a proposition. What are the relations between these?) For discussion see any of:

GILLIES, D., *Philosophical Theories of Probability* (London: Routledge, 2001).

HAJEK, A., 'Interpretations of Probability', in *Stanford Encyclopedia of Philosophy*, at <http://plato.stanford.edu/entries/probability-interpret>.

MELLOR, D. H., *Probability: A Philosophical Introduction* (London: Routledge & Kegan Paul, 2005).

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## PHILOSOPHICAL LOGIC

### **(1) Problems of translation between natural and formal languages**

The issue of the interpretation of quantifiers in formal logic and ordinary language is a IB topic: so for IA we concentrate on questions about the relationship between the ordinary language propositional connectives and their formal logic counterparts, and in particular on the relation between 'if' and the material conditional ' $\supset$ '.

**(A)** For revision, and one story about the material conditional, see again:

SMITH, P., *An Introduction to Formal Logic* (Cambridge: Cambridge University Press, 2003/ 2009) [Chs. 7, 14 &15.]

And for more introductory remarks, see:

HAACK, S., *Philosophy of Logics* (Cambridge: Cambridge University Press, 1978),pp. 32–38.

For a much more expansive "textbook" survey of the issues, see:

SAINSBURY, R. M., *Logical Forms* (Oxford: Blackwell, 1991; 2nd rev. ed.: 2000) [Ch. 2, esp. §§ 4-8.]

A central theme in Sainsbury's discussion is the idea of a "conversational implicature", classically introduced in the must-read:

GRICE, H. P., *Studies in the Way of Words* (Cambridge, Massachusetts: Harvard University Press, 1989), Ch. 2 'Logic and Conversation'. Reprinted in Jackson, F., ed. *Conditionals* (Oxford: Oxford University Press, 1991). [Also in [Camtools](#)]

Grice's way of explaining away the seeming differences between 'if' and ' $\supset$ ' is exploited by:

JEFFREY, R., *Formal Logic: its Scope and Limits* (New York: McGraw-Hill, 1967; 4<sup>th</sup> rev. ed.: 2006). [ch. 4, esp. §§1, 2, 6 and 7]

But for some further discussion and possible reasons for preferring the account in *IFL* (due to Jackson) over that in Jeffrey (due to Grice) see:

SMITH, P., "If' and ' $\supset$ '".

Available at [www.logicmatters.net/resources/pdfs/Conditionals.pdf](http://www.logicmatters.net/resources/pdfs/Conditionals.pdf)

**(B)** For a further wide-ranging discussion of the relationship between the various connectives and their formal counterparts, see the relatively elementary

LEPORE, E., *Meaning and Argument* (Oxford: Blackwell, 2000) [Much more elementary. Read the fairly short chapters 3, 'Conjunction', 4, 'Negation', 6 'Disjunction', and the predictably longer 7, 'Conditionals'. The range of natural language constructions considered is much wider than usual.]

For yet more on conditionals start with:

JACKSON, F., 'Indicative conditionals' *Routledge Encyclopedia of Philosophy*. [www.rep.routledge.com/article/X017](http://www.rep.routledge.com/article/X017). [A brief article which surveys some issues in an introductory way, but finishes by sketching Jackson's own theory.]

Then you could look at:

EDGINGTON, D., 'Conditionals' in *Stanford Encyclopedia of Philosophy*. <http://plato.stanford.edu/entries/conditionals>. [Not easy, but a wonderfully rich source of ideas about 'if', worth looking at if only to convince yourself that the issues here are difficult and non-trivial.]

JACKSON, F., 'On Assertion and Indicative Conditionals'. *Philosophical Review* 88 (1979): 565–589. Reprinted in Jackson, F., ed. *Conditionals* (Oxford: Oxford University Press, 1991) [This is the edited volume in the *Oxford Readings in Philosophy* series, not Jackson's monograph of the same title. Again not elementary, though accessibly written, and listed here as it is the source of the view tentatively endorsed in *IFL*.]

Other papers in Jackson's edited volume will give enthusiasts as much more to read about conditionals as they could possibly want!

## (2) The Elements of Arguments : Sentences, Statements and Propositions

(A) What kind of things are premises and conclusions? The kinds of things that can be true or false. But what kind of thing are *they*? A useful short introduction to some issues is:

ENGEL, P., Propositions, sentences and statements. *Routledge Encyclopedia of Philosophy*. [www.rep.routledge.com/article/X032](http://www.rep.routledge.com/article/X032).

But you have to be pretty wary of the terminology here, in particular pay attention to the use of "statement" vs. "proposition". Writers may agree there's a distinction, but differ about which side of the distinction they use "proposition" to mark. You have been warned! For a classic defence of "thoughts" ("propositions" in one sense) as abstract entities distinct from the sentences that express them see:

FREGE, G., 'The Thought', in *Philosophical Logic*, ed. by P. F. Strawson (Oxford: Oxford University Press, 1967). Also in P. Ludlow, ed., *Readings in the Philosophy of Language* (Cambridge, Mass.: MIT Press, 1997); and in A. P. Martinich & D. Sosa, eds., *Analytic Philosophy: An Anthology* (Oxford: Blackwell, 2001).

Quine is famous for rejecting propositions conceived Frege's way. For an elementary introduction to his arguments, see:

QUINE, W. V., *Philosophy of Logic* 2nd ed. (Cambridge, Massachusetts: Harvard University Press, 1986) [Ch. 1. Also available on [Camtools](http://Camtools)]

The debate continues in:

CARTWRIGHT, R., 'Propositions', in *Analytical Philosophy, vol. 1*, ed. by R. Butler (Oxford: Blackwell, 1962). Reprinted with addenda in R. Cartwright, *Philosophical Essays*, (Cambridge, Massachusetts: MIT Press, 1987).

GRANDY, R., 'What do 'Q' and 'R' stand for, anyway?' in *A Philosophical Companion to First-Order Logic*, ed. by R. I. G. Hughes (Cambridge, Massachusetts: Hackett, 1993).

STRAWSON, P.F., *Introduction to Logical Theory*, (London: Methuen, 1952). [Strawson's standard argument for taking statements to be the constituents of arguments. Esp. pp. 3-4, 9-12, 174-176]

LEMMON, E.J., 'Sentences, statements and propositions', in *British Analytical Philosophy*, edited by B. Williams and A. Montefiore, (London: Routledge & Kegan Paul, 1966), pp. 87-107. [Discusses Strawson's views on the topic]

GARNER, R., 'Lemmon on Sentences, Statements and Propositions', *Analysis* 30 (1970): 83-91. [Replies to Lemmon]

GOLDFARB, W., *Deductive Logic*, (Indianapolis, IN: Hackett, 2003). [More on what we should take as the truth-bearers from a student of Quine's]

QUINE, W.V.O., *Methods of Logic*, (New York: Holt, 1950; 3<sup>rd</sup> ed.; Routledge & Kegan Paul, 1972) [Introduction; Quine on what we should take as the truth-bearers]

## (B)

DUMMETT, M., 'Of What Kind of Thing is Truth a Property?' in *Truth*, ed. by S. Blackburn and K. Simmons (Oxford: Oxford University Press, 1999), pp. 264-81. [Also available on [Camtools](http://Camtools)]

GRAYLING, A., *An Introduction to Philosophical Logic* (Oxford: Blackwell, 3<sup>rd</sup> edn. 1997), ch. 2 'The Proposition'. [Another useful textbook treatment.]

LOUX, M., *Metaphysics: A Contemporary Introduction* (London: Routledge, 1998), Ch. 4 'Propositions and Their Neighbours'. [The issue of the status of propositions is as much a matter for metaphysics as for the philosophy of logic: this chapter more explicitly draws some metaphysical connections.]

MCGRATH, M., 'Propositions', *Stanford Encyclopedia of Philosophy*, <http://plato.stanford.edu/entries/propositions>. [Difficult: worth just glancing at, however, to get a sense of the range and complexity of the issues here.]

QUINE, W. V., *Word and Object* (Cambridge, Massachusetts: MIT Press, 1960, ch. 6. [For a more detailed elaboration of Quine's position.]

## (3) The Theory of Descriptions

(A) For a reminder of the formal basics see:

SMITH, P., *An Introduction to Formal Logic* (Cambridge: Cambridge University Press, 2003/ 2009), §§34.1, 34.2.

Russell famously first presented his Theory of Descriptions in 'On Denoting' (*Mind* 1905). But there's a much more accessible explanation in:

RUSSELL, B., *Introduction to Mathematical Philosophy* (London: Allen and Unwin, 1919). ch.16. Repr. in P. Ludlow, ed., *Readings in the Philosophy of Language* (Cambridge, Massachusetts: MIT Press, 1997); and in G. Ostertag, ed., *Definite Descriptions: A Reader* (Cambridge, Mass.: MIT

Press, 1998), ch.3; and in A.P. Martinich, ed., *The Philosophy of Language* (Oxford: Oxford University Press, 1990).

A classical debate you need to know about starts with:

STRAWSON, P. F., 'On Referring', *Mind*, 59 (1950), 320-44. Repr. in his *Logico-Linguistic Papers* (London: Methuen, 1971); in G. Ostertag ed., *Definite Descriptions: A Reader* (Cambridge, Massachusetts: MIT Press, 1998); and in A. P. Martinich & David Sosa, eds, *Analytic Philosophy: An Anthology* (Oxford: Blackwell, 2001).

Partially in response, the following argues (to put it at its crudest) that Russell is right about some uses of definite descriptions, Strawson about others:

DONNELLAN, K. S., 'Reference and Definite Description', *Philosophical Review*, 75 (1966), 281-304. Also in P. Ludlow, ed., *Readings in the Philosophy of Language* (Cambridge, Massachusetts: MIT Press, 1997); and in G. Ostertag, ed., *Definite Descriptions: A Reader* (Cambridge, Massachusetts: MIT Press, 1998); and in A. P. Martinich, ed., *The Philosophy of Language* (Oxford: Oxford University Press, 1990).

At this point read:

LUDLOW, P., 'Descriptions', in the *Stanford Encyclopedia of Philosophy*, <http://plato.stanford.edu/entries/descriptions>.

for helpful orientation, and for an introduction to another modern classic (which also links in with Grice's work on conversational implicature), though this is stretching at IA level:

KRIPKE, S., 'Speaker's Reference and Semantic Reference', in *Readings in the Philosophy of Language*, ed. by P. Ludlow (Cambridge, Massachusetts: MIT Press, 1997). Reprinted in G. Ostertag, ed., *Definite Descriptions: A Reader* (Cambridge, MA: MIT Press, 1998); and in A. P. Martinich, ed., *The Philosophy of Language* (Oxford: Oxford University Press, 1990).

**(B)** For further discussion see:

LYCAN, W. G., *Philosophy of Language* (London: Routledge & Kegan Paul, 2000). [Ch.2. An elementary textbook overview, if you get lost.]

SAINSBURY, R.M., 'Descriptions', §2 of his essay 'Philosophical Logic' in A. Grayling, ed., *Philosophy: A Guide Through the Subject* (Oxford, Oxford University Press, 1995). [A particularly clear discussion – indeed you could well find it helpful to *start* by reading this.]

SAINSBURY, R. M., *Russell* (London: Routledge & Kegan Paul, 1979) [Ch. 4.]

SMITH, P., 'Russell's Theory of Descriptions' at:

[www.logicmatters.net/resources/pdfs/Conditionals.pdf](http://www.logicmatters.net/resources/pdfs/Conditionals.pdf)

#### **(4) Necessity, Analyticity and the *a Priori***

**(A)** There are three distinctions here that need to be distinguished! For an introduction see:

SMITH, P., *An Introduction to Formal Logic* (Cambridge: Cambridge University Press, 2003/ 2009), §12.5.

The classic empiricist view is that the necessary truths and the propositions that we can know *a priori* are just the trivial 'verbal', 'true-by-definition', analytic propositions. For a defense see:

AYER, A. J., 'The *A Priori*', in *Language, Truth and Logic* (London: Gollancz, 1946, 2nd ed.). Reprinted in P. K. Moser, ed., *A Priori Knowledge* (Oxford: Oxford University Press, 1987).

This idea is famously attacked (from the 'left', so to speak) by Quine, who argues that the empiricist attempt to demystify the notions of necessity and the *a priori* fails because the notion of the analytic is not in good shape either:

QUINE, W. V., 'Two Dogmas of Empiricism', *Philosophical Review* 60 (1951): 20-43. Reprinted in *From a Logical Point of View* (Cambridge, Massachusetts: Harvard University Press, 1953; 2nd ed.: 1963).

QUINE, W. V., 'Necessary Truth', in *The Ways of Paradox* (Cambridge, Massachusetts: Harvard University Press, 1966). [A very short piece giving more of Quine's views. Also available on [Camtools](#)]

Quine's attack on the analytic/synthetic distinction has generated a huge literature. A good place to start for a bit of orientation is:

REY, G., 'The Analytic/Synthetic Distinction', *Stanford Encyclopedia of Philosophy*, <http://plato.stanford.edu/entries/analytic-synthetic> [Read just §§1–3.]

And for some richly suggestive discussions (not easy, but which make clear some of the wider issues in the area) see at least one of:

PUTNAM, H., 'The Analytic and the Synthetic', in *Mind, Language and Reality, Philosophical Papers, Vol. 2* (Cambridge: Cambridge University Press, 1975).

CHURCHLAND, P., *Scientific Realism and the Plasticity of Mind* (Cambridge: Cambridge University Press, 1979). [§§7, 8 'The Analytic/Synthetic Distinction', 'Meaning and Understanding'.]

**(B)** But where next? The possibilities are almost endless, depending on what interests you most about the debate. If you have historical interests, then you will want to look at Kant's original deployment of some of the key notions.

KANT, I., *Critique of Pure Reason*, the 'Introduction'. [Various translations are available, but there are two modern translations which aim to be particularly accessible and which are freely available online. Visit <http://tinyurl.com/dc3odm> for a straight translation by G. MacDonald Ross. Or try [www.earlymoderntexts.com/pdfbits/kc11.pdf](http://www.earlymoderntexts.com/pdfbits/kc11.pdf) (start at p.17 for a rather looser "tidied up" version by Jonathan Bennett)]

And for later history, to see how Quine was responding to Carnap (one of the Vienna Circle who so influenced Ayer), read:

HOOKEYWAY, C., *Quine: Language, Experience and Reality* (Oxford: Polity Press, 1988) [Ch. 2.]

Quine's arguments met an early response from the influential Oxford philosophers Strawson and Grice, which in turn met with a rather tart response from Bennett (then a Cambridge lecturer). The exchange is still very illuminating.

GRICE, H. P., and P. F. STRAWSON, 'In Defense of a Dogma', *Philosophical Review*, 65 (1956), pp. 141-58.

BENNETT, J., 'Analytic-Synthetic', *Proc. of the Aristotelian Society* 59 (1958-9): 163-88. [Available online at: [www.earlymoderntexts.com/jfb/ansyn.pdf](http://www.earlymoderntexts.com/jfb/ansyn.pdf)]

See also:

GRAYLING, A., *An Introduction to Philosophical Logic*, 3<sup>rd</sup> edn. (Oxford: Blackwell, 1997), Ch. 3 'Necessity, Analyticity and the *A Priori*'. [A wide-ranging textbook treatment.]

KRIPKE, 'A Priori Knowledge, Necessity, and Contingency', excerpts from his *Naming and Necessity* in P. K. Moser, ed., *A Priori Knowledge* (Oxford: Oxford University Press, 1987).

PRIEST, G., 'Two Dogmas of Quineanism', *Philosophical Quarterly* 29 (1979), pp. 289-301 (Omit §7).

PUTNAM, H., "'Two Dogmas" revisited', in *Realism and Reason, Philosophical Papers*, vol. 3 (Cambridge: Cambridge University Press, 1983).

## (5) Meaning and Verification

(A) For general orientation see:

HART, W.D., 'Meaning and Verification' in *Routledge Encyclopedia of Philosophy*. [[www.rep.routledge.com/article/X025](http://www.rep.routledge.com/article/X025)].

For classic defenses of a tie between meaningfulness and the possibility of verification see:

AYER, A. J., *Language, Truth and Logic*, 2nd ed. (London: Gollancz, 1946) [Introduction and Ch.1.]

SCHLICK, M., 'Meaning and Verification', *Philosophical Review*, 45 (1936), pp. 339-369. Reprinted in *Readings in Philosophical Analysis*, edited by H. Feigl and W. Sellars (New York: Appleton-Century-Crofts, 1949).

For early discussion, read:

BERLIN, I., 'Verification', *Proceedings of the Aristotelian Society* 39 (1938-39): 225-48. Reprinted in G. Parkinson, ed., *The Theory of Meaning* (London: Oxford University Press, 1968).

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

HEMPEL, C.G., 'Problems and Changes in the Empiricist Criterion of Meaning', *Revue Internationale de Philosophie* (1950): 41-63. Reprinted in L. Linsky (ed.) *Semantics and the Philosophy of Language*, (Urbana, IL: University of Illinois Press, 1952). [Also available <http://tinyurl.com/r6y5kl>]

HEMPEL, C. G., 'The Empiricist Criterion of Meaning', in *Logical Positivism*, ed. by A. J. Ayer (London: Allen & Unwin, 1959).

But a powerful idea often makes a come-back in response to criticism in a different form: in this case, Quine's holistic empiricist theory of meaning can be seen as a natural inheritor. For explanation of the connection, see:

DANCY, J., *Introduction to Contemporary Epistemology* (Oxford: Blackwell, 1985). [Ch. 6.]

## (B)

FOSTER, J., *Ayer* (London: Routledge & Kegan Paul, 1985) [Part I.]

HACKING, I., *Why Does Language Matter to Philosophy?* (Cambridge: Cambridge University Press, 1975) [ch. 9].

MISAK, C., *Verificationism* (London: Routledge, 1995). [Book-length treatment, worth dipping into.]

SOAMES, S., *Philosophical Analysis in the Twentieth Century, Vol. 1 The Dawn of Analysis* (Princeton: Princeton University Press, 2003) [Ch. 13, 'The Rise and Fall of the Empiricist Criterion of Meaning']. Also available in the Faculty Library offprint collection and in [Camtools](http://Camtools)