

Bibliography on worlds and modality

All abstracts from the *Philosopher's Index* except SMALLCAPS abstracts/comments, which are by me.

Selected, topical bibliography

Overall: Kripke 1972; Lewis 1986

Actualism: Adams 1974, 1982; Plantinga 1976; Stalnaker 1976; Fine 1977a; McMichael 1983; Lewis 1986, chapter 3; Rosen 1990

De re modality and essence: Quine 1953b, 1953c; Lewis 1968, 1971, 1986 chapter 4; Burgess 1997; Fine 1994a

Necessity and a priority: Kripke 1972; Putnam 1975; Davies and Humberstone 1980

Overviews: Melia 2003, Sider 2003

Full bibliography

Abraham, William. 1972. "The Incompatibility of Individuals", *Noûs* 6: 1-13.

An analysis and defence of Leibniz's notion of compossibility and its fecundity in clarifying modality. Outlines a combinatorial treatment of possibility, necessity, contingency, impossibility. The impossibility of individuals is connected with the notion of a maximal consistent set of existential formulas, and with the analysis of an individual as an integral (not mere sum) of its properties, creating a new subject-predicate distinction.

Adams, Robert Merrihew. 1974. "Theories of Actuality", *Noûs* 8: 211-231. Reprinted in Loux 1979.

CLASSIC PAPER ON THE NATURE OF POSSIBLE WORLDS.

Adams, Robert Merrihew. 1981. "Actualism And Thisness", *Synthese* 49: 3-42.

The thesis of this essay is that all possibilities are purely qualitative except insofar as they involve individuals that actually exist. This thesis is expounded and defended, and some of its implications for modality are developed; the chief implication is that what modal facts "de re" there are depends on what individuals actually exist.

Alanen, Lilli K. 1999. "Logical Modality and Attitudes to Propositions" in *Actions, Norms, Values*, Meggle, Georg (ed) (de-Gruyter : Hawthorne).

In discussing the nature and foundation of logical necessity Georg Henrik von Wright fights against a tendency to mystify necessity which Wittgenstein was fighting in criticizing the prejudice of the "crystalline purity of logic" and the idea of the "hardness of the logical must". The necessity attributed to the principles or laws of logic is not founded on any preformed logical structure of the world but stems, von Wright argues, from an attitude we take to some propositions. This paper examines the view of logic and logical necessity that emerges from his paper on "Logical Modality" and some of its implications. It outlines some traditional conceptions of modality and compares von Wright's view more particularly to Descartes's radical view of modality as dependent on the divine will and also to some contemporary views Descartes has been seen as anticipation. It purports to show that von Wright's way of detranscendentalizing modality by relating necessity to our attitudes or ways of treating sentences does not commit him to conventionalism or subjectivism.

Almog, Joseph. 1991. "The What and the How", *Journal of Philosophy* ??: 225-244.

Armstrong, D. M. 1989. *A Combinatorial Theory of Possibility*. (New York: Cambridge University Press).

CLASSIC DEFENSE OF COMBINATORIALISM.

Armstrong, D. M. 1993. "Reply to Lycan's 'Armstrong's New Combinatorialist Theory...'", in John Bacon, Keith Campbell, and Lloyd Reinhardt, eds., *Ontology, Causality and Mind: Essays in Honour of D M Armstrong*, Bacon, John, eds., (New York: Cambridge University Press).

Lycan directs criticism of Armstrong's combinatorialist theory of possibility particularly at the fictionalist nature of the theory. In reply, Armstrong argues that the combinatorialism can be used to regiment the fiction, so that it can be a "useful" one, as, for instance, the physicist's phase-spaces are useful fictions.

Armstrong, D. M. 1997. *A World of States of Affairs*. (New York: Cambridge University Press).

In this study David Armstrong offers a comprehensive system of analytical metaphysics that synthesizes but also develops his thinking over the last twenty years. Armstrong's analysis, which acknowledges the logical atomism' of Russell and Wittgenstein, makes facts (or states of affairs, as the author calls them) the fundamental constituents of the world, examining properties, relations, numbers, classes, possibility and necessity, dispositions, causes and laws. All these, it is argued, find their place and can be understood inside a scheme of states of affairs. This is a comprehensive and rigorously this-worldly account of the most general features of reality, argued from a distinctive philosophical perspective, and it will appeal to a wide readership in analytical philosophy.

Ashby, R. W. 1963. "Entailment And Modality", *Proceedings of the Aristotelian Society* 63: 203-216.

Ayer, Alfred Jules. 1952. *Language, Truth and Logic* (2nd edition). (New York: Dover).

Bacon, John. 1965. "Entailment and the Modal Fallacy", *Review of Metaphysics* 18: 566-571

In his 1964 article, "A Question of Entailment," John O Nelson proposed a definition of entailment intended to support Anderson and Belnap's rejection of fallacies of modality in "The Pure Calculus of Entailment" (1962). However, the author argues here that Nelson misconstrued Anderson and Belnap's statement of the fallacies; that his explication of entailment is incompatible with theirs; and that his definition of entailment is, in any case, unacceptable.

Baldwin, Thomas. 1984. "Lowe on Modalities 'De Re'", *Mind* 93: 252-255

My aim is to discuss the thought that de re modalities are best understood through the use of predicate modal operators. I relate Lowe's account of de re modalities to this thought, as developed by Wiggins and myself, and argue that Lowe's position is unsatisfactory.

Baldwin, Thomas. 1998. "Modal Fictionalism and the Imagination", *Analysis* 58: 72-75.

Rosen's fictionalist' treatment of modality draws on the work of David Lewis, but seeks to neutralize any commitment to nonactual worlds by treating Lewis's description of other worlds as a fiction'. But Rosen has to be selective in his choice among modal fictions, and the question arises as to how he can justify any one choice without endorsing it as true'. He says that his choice is guided by the fact that his preferred fiction captures the principles that guide the imagination. But if this appeal to the imagination is sufficient to justify his choice, we may as well apply it generally to the understanding of possibility and omit the complexities of the fictionalist' strategy.

Baldwin, T. 1975. "The Philosophical Significance of Intensional Logic: Part 2", *Aristotelian Society* Supplementary volume 49: 67-80.

The philosophical significance of intensionality derives largely from its implications for semantic theories and thus for ontology. These implications are manifest in possible world theories of modality, and lead to a realist view of possible worlds. This view contrasts with a non-realist view of them as sets of sentences, but distinct from and more fundamental than the realist/non-realist issue is that of the choice between absolute and relational theories of possibility. The latter seems preferable, although it introduces modal concepts into the metalanguage. In the end, a realist relational theory that uses only non-maximal possible worlds is sketched.

Belnap, Nuel. 1961-62. "Tonk, Plonk and Plink", *Analysis* 22: 130-134.

Benardete, Jose A. 1962. "Is There a Problem About Logical Possibility?", *Mind* 71: 342-352.

Bennett, Jonathan. 1955. "Iterated Modalities", *Philosophical Quarterly* 5: 45-56.

Bennett, Jonathan. 1959. "Analytic-Synthetic", *Proceedings of the Aristotelian Society* 59: 163-88.

Bennett, Jonathan. 1994. "Descartes's Theory of Modality", *The Philosophical Review* 103: 639-667.

Descartes propounded the allegedly "strange", "peculiar", "curious" and "incoherent" doctrine that necessary truths are made true by God's voluntary act. It is generally held that this doctrine must be kept out of sight while other Cartesian topics are being discussed. This paper offers an interpretation of this Cartesian doctrine under which it comes out as reasonable, consistent with the rest of his philosophy, and possible even true. According to this interpretation--which is more respectful of and close to Descartes's text than is the customary one--Descartes equated the alethic modalities with facts about human intellectual limitations, somewhat in the manner of Wittgenstein. Thus, God created modalities creating humans in the way he did.

Bigelow, John. 1988. "Real Possibilities", *Philosophical Studies* 53: 37-64.

Bigelow, John and Robert Pargetter. 1987. "Beyond the Blank Stare", *Theoria* 53: 97-114.

Blackburn, Simon (ed.). 1975. *Meaning, Reference and Necessity: New Studies in Semantics*. (Cambridge: Cambridge University Press).

Blackburn, Simon. 1986. "Morals And Modals", in Graham Macdonald, ed., *Fact, Science And Morality* (Oxford: Blackwell), 119- 141.

This paper displays a “quasi-realist” theory of necessary truths, in which our propensity to attach modal values to propositions is compared with our propensity to moral attitudes. The theory offers an alternative to quinean scepticism to ‘as if’ theories, and to modal realism.

Blanche, Robert. 1952. “Quantity, Modality, And Other Kindred Systems of Categories”, *Mind* 61: 369-375.

Boghossian, Paul. 1996. “Analyticity Reconsidered”, *Noûs* 30: 360-391.

Boghossian, Paul. 1997. “Analyticity”, in Bob Hale and Crispin Wright (eds.), *A Companion to the Philosophy of Language* (Cambridge: Blackwell), pp. 331-368.

VERY USEFUL PAPER. LONGER VERSION OF BOGHOSSIAN 1996.

Bonjour, Lawrence. 1998. *In Defense of Pure Reason*. (Cambridge: Cambridge University Press).

THIS HAS GOOD STUFF ON CONVENTIONALISM, THOUGH HE’S INTERESTED IN THE EPISTEMOLOGICAL PROBLEM OF A PRIORI KNOWLEDGE RATHER THAN THE METAPHYSICS OF NECESSITY

Bremer, Manual. 2003. “Is there an Analytic Limit of Genuine Modal Realism?”, *Mind* 112: 79-82

Bricker, Phillip. 1987. “Reducing Possible Worlds to Language”, *Philosophical Studies* 52: 331-355.

Bricker, Phillip. 1991. “Plenitude of Possible Structures”, *Journal of Philosophy*: 607-619.

Which mathematical structures are possible, that is, instantiated by the concrete inhabitants of some possible world? Are there worlds with four-dimensional space? With infinite-dimensional space? Whence comes our knowledge of the possibility of structures? In this paper, I develop and defend a principle of plenitude according to which any mathematically natural generalization of possible structure is itself possible. I motivate the principle pragmatically by way of the role that logical possibility plays in our inquiry into the world.

Bricker, Phillip. 1996. “Isolation and Unification: The Realist Analysis of Possible Worlds”, *Philosophical Studies* 84: 225-238.

If realism about possible worlds is to succeed in eliminating primitive modality, it must provide an “analysis” of possible world: nonmodal criteria for demarcating one world from another. This David Lewis has done. Lewis holds, roughly, that worlds are maximal unified regions of logical space. So far, so good. But what Lewis means by unification’ is too narrow, I think, in two different ways. First, for Lewis, all worlds are (almost) “globally” unified: at any world, (almost) every part is directly linked to (almost) every other part. I hold instead that some worlds are “locally” unified: at some worlds, parts are directly linked only to “neighboring” parts. Second, for Lewis, each world is (analogically) “spatiotemporally” unified; every world is “spatiotemporally” isolated from every other. I hold instead: a world may be unified by nonspatiotemporal relations; every world is “absolutely” isolated from every other. If I am right, Lewis’s conception of logical space is impoverished: perfectly respectable worlds are missing.

Bricker, Phillip. 2001. "Island Universes and the Analysis of Modality", in Gerhard Preyer and Frank Siebelt, eds., *Reality and Humean Supervenience: Essays on the Philosophy of David Lewis* (Lanham, MD: Rowman & Littlefield), pp. 27-55.

Britton, Karl. 1947. "Are Necessary Truths True by Convention?", *Proceedings of the Aristotelian Society*, supplementary volume 21: 78-103.

Broad, C. D. 1936. "Are there Synthetic *A Priori* Truths?", *Aristotelian Society Supplementary Volume* 15: 102-117.

Brock, Stuart. 1993. "Modal Fictionalism: A Response to Rosen", *Mind* 102: 147-150.

Gideon Rosen, in his paper 'Modal Fictionalism' ("Mind", 1990) puts forward and defends what is intended to be an ontologically neutral alternative to modal realism. I argue that Rosen does not achieve this goal. His fictionalism entails realism about possible worlds. Moreover, any attempts to modify the analysis results in an undesirable multiplication of the modal primitives, a problem faced by those who take the standard modal operators as primitive.

Burgess, John P. 1997. "Quinus ab Omni Naevo Vindicatus", in Ali A. Kazmi, ed., *Meaning and Reference, Canadian Journal of Philosophy* Supplementary volume 23: 25-65.

USEFUL PAPER CLARIFYING QUINE'S ATTACK ON QUANTIFIED MODAL LOGIC.

Campbell, Richard. 1964. "Modality 'De Dicto' And 'De Re'", *Australasian Journal of Philosophy* 42: 345-358.

By proposing the distinction between two types of modal operators (de re and de dicto) the author shows that these different ways of applying the operators explain many puzzles, including metaphysical ones which cannot be solved by "a simple broadshot fired in the name of logic."

Carnap, Rudolf. 1937. *The Logical Syntax of Language*. (London: Routledge & Kegan Paul).

Carnap, Rudolf. 1947. *Meaning and Necessity, a Study in Semantics and Modal Logic*. (Chicago: University of Chicago Press).

Carnap, Rudolf. 1950. "Empiricism, Semantics and Ontology", *Revue Internationale de Philosophie* 4: 20-40, reprinted as an appendix to the second edition of *Meaning and Necessity* (Chicago: University of Chicago Press, 1956).

Carnap, Rudolf. 1952. "Meaning Postulates", *Philosophical Studies* 3: 65-73. Reprinted as an appendix to the second edition of *Meaning and Necessity* (Chicago: University of Chicago Press, 1956).

Carter, William R., and John E. Bahde. 1998. "Magical Antirealism", *American Philosophical Quarterly* 35: 305-325.

The paper critically examines various forms of antirealism concerning modality and identity. It is argued that modal antirealism inevitably has identity as its corollary. Since identity antirealism entails objectual

antirealism, endorsements of modal antirealism commit us to an antirealist conception of what there is (what exists). All of which strikes us as indefensible. We argue for a realist position concerning the world and its inhabitants.

Castañeda, Hector-Neri. 1975. "Identity and Modality", *Philosophia* 5: 141-150.

Chalmers, David. 1996. *The Conscious Mind: In Search of a Fundamental Theory*. (Oxford: Oxford University Press.)

Chalmers, David. 1999. "Materialism and the Metaphysics of Modality", *Philosophy and Phenomenological Research* 59: 473-496.

Chihara, Charles. 1998. *The Worlds of Possibility : Modal Realism and the Semantics of Modal Logic*. (Oxford: Clarendon Press).

CONTAINS A LONG CRITICAL DISCUSSION OF LEWIS'S THEORY OF WORLDS.

Craig, E. 1975. "The Problem of Necessary Truth", in S. Blackburn, ed., *Meaning, Reference and Necessity* (Cambridge: Cambridge University Press).

Creath, Richard. 1992. "Carnap's Conventionalism", *Synthese* 93: 141-165.

Cresswell, M. J. 1972. "The World Is Everything That Is the Case", *Australasian Journal of Philosophy* 50: 1-13. Reprinted in Loux 1979.

DEFENDS COMBINATORIALISM ABOUT POSSIBLE WORLDS.

Cresswell, M. J. 1973. *Logics and Languages*. (London: Methuen).

Code, Alan. 1976 "Aristotle's Response to Quine's Objections to Modal Logic", *Journal of Philosophical Logic* 5: 159-186.

It is shown that some of the Quinean objections to modal logic can be transferred to the notions used to describe and account for temporal change, and then argued that Aristotle's predecessors had already formulated problems similar to the temporal puzzles so generated. The three most prominent reactions to Quine's puzzles were also anticipated by certain ancient Greek philosophers, and Aristotle's own reaction (as manifested in his analysis of the elements of change in "Physics" A7) can be seen to involve concepts which easily lend themselves to the kind of semantical analysis which has recently enhanced our understanding of modality.

Coffa, J. Alberto. 1991. *The Semantic Tradition from Kant to Carnap: To the Vienna Station*. (Cambridge: Cambridge University Press).

LANDMARK BOOK DESCRIBING THE HISTORY OF THOUGHT ABOUT A PRIORICITY AND NECESSITY AND ANALYTICITY, FROM KANT TO THE TWENTIETH-CENTURY LINGUISTIC PHILOSOPHERS (LIKE LOGICAL POSITIVISTS AND THE ORDINARY LANGUAGE PHILOSOPHERS)

Cover, J. A., and John Hawthorne. "Leibnizian Essentialism, Transworld Identity, and Counterparts", *History of Philosophy Quarterly* 9: 425-444.

The standard view of Leibnizian modality reckons Leibniz committed to supressentialism and to denying trans-world identity. We present historical and philosophical arguments against the standard view. In particular, we argue that Leibnizian essentialism is “consistent” with trans-world identity, and that his modal metaphysics allows for the possibility of a counterpart semantics for “de re” modal predication.

Davidson, Donald and Hintikka, Jaakko, Eds. 1969. *Words And Objections, Essays on The World of W. V. Quine*. (Dordrecht: Reidel).

Davies, Martin and Lloyd Humberstone. 1980. “Two Notions of Necessity”, *Philosophical Studies* 38: 1-30.

Dejnozka, Jan. 1999. *Bertrand Russell on Modality and Logical Relevance* (Ashgate).

Dejnozka, Jan. 1990. “The Ontological Foundation of Russell’s Theory of Modality”, *Erkenntnis* 32: 383-418.

Prominent thinkers such as Kripke and Rescher hold that Russell has no modal logic, even that Russell was indisposed toward modal logic. In Part I, I show that Russell had a modal logic which he repeatedly described and that Russell repeatedly endorsed Leibniz’s multiplicity of possible worlds. In Part II, I describe Russell’s theory as having three ontological levels. In Part III, I describe six Parmenidean theories of being Russell held, including: literal in 1903, universal in 1912, timeless in 1914, transcendental in 1918-1948. The transcendental theory underlies the primary level of Russell’s modal logic. In Part IV, I examine Rescher’s view that Russell and modal logic did not mix.

Divers, John. 1995. “Modal Fictionalism Cannot Deliver Possible Worlds Semantics”, *Analysis* 55: 81-88.

Divers, John. 1997. “The Analysis of Possibility and the Possibility of Analysis”, *Proceedings of the Aristotelian Society* 97: 141-160.

DEALS WITH MODAL REALISM.

Divers, John. 1999. “A Modal Fictionalist Result”, *Noûs* 33: 317-346.

In the first half of the paper, I offer new responses to the Brock-Rosen and Hale objections based on the claim that the fictionalist may, and ought to, hold that the hypothesis of the plurality of worlds is false but necessarily possible. In the second half of the paper, I state a consequence result that is crucial to the justification of the practice of modal logic by proxy. I then formulate a primitively modal version of the consequence result, before motivating and presenting a fictionalist proof of the result. Finally, I argue that while the fictionalist position that emerges has much in common with a traditional modalist conception of modality and possible worlds, there remain differences between the positions in respect of which the fictionalist might claim theoretical advantage.

Divers, John. 2002. *Possible Worlds*. (London: Routledge).

EXCELLENT AND COMPREHENSIVE SURVEY OF THE PHILOSOPHY OF POSSIBLE WORLDS

Divers, John. 2004. “Agnosticism About Other Worlds: A New Antirealist Programme in Modality”, *Philosophy and Phenomenological Research*.

Divers, John, and Joseph Melia. 2002. "The Analytic Limit of Genuine Modal Realism", *Mind* 111: 15-36.

INTERESTING PAPER ON THE QUESTION OF WHETHER LEWIS'S MODAL REALISM IS GENUINELY REDUCTIVE. RELATED TO, BUT MOVES BEYOND, ARGUMENTS GIVEN BY SHALKOWSKI 1994 AND MCGINN 2000.

Divers, John, and Joseph Melia. 2003. "Genuine Modal Realism Limited", *Mind* 112: 83-86.

Donnellan, Keith. 1962. "Necessity and Criteria", *Journal of Philosophy* 59: 647-658.

QUINE-LIKE DOUBTS ABOUT ANALYTICITY.

Downes, Stephen. "Models and Modality", *Eidos* 6: 37-52.

Elder, Crawford L. 1992. "An Epistemological Defence of Realism about Necessity", *Philosophical Quarterly* 42: 317-336.

Realists about necessity think there is a difference, independent of our habits of thought, between A's uniformly happening to have property P, and A's necessarily having P--or, again, between property F's merely "accompanying" property G, in A's, and its "causing" A's to have G. "What" differences? Existing answers make the differences seem "so" independent of our thought that we could neither detect them nor assert them. This paper shows that by avoiding the answer about the first difference that is offered by Lewis and "modal realists", and the answer about the second difference that is offered by Dretske, Tooley, and Armstrong, realists can meet these challenges.

Ewing, A. C. 1939-40. "The Linguistic Theory of A Priori Propositions", *Proceedings of the Aristotelian Society* 40: 207-244.

Field, Hartry. 1996. "The A Prioricity of Logic", *Proceedings of the Aristotelian Society* 96: 359-379.

Fine, Kit. 1977a. Postscript to *Worlds, Times and Selves*. (London: Duckworth).

IMPORTANT PAPER ON REDUCING TALK OF POSSIBILIA.

Fine, Kit. 1977b. "Properties, Propositions and Sets", *Journal of Philosophical Logic* 6: 135-191.

This paper presents a theory of extensional and intensional entities. It takes a possible-worlds account of these entities for granted and, in terms of that account, attempts to characterize and investigate various features of the entities. These features include existence in a world, being purely general or qualitative, being logical, having an individual as a constituent, and being essentially modal. The characterizations are given abstractly, in terms of a relevant notion of isomorphism, and linguistically, in terms of expressibility within an ideal language.

Fine, Kit. 1978a. "Model Theory for Modal Logic Part I: the "De Re/de Dicto" Distinction", *Journal of Philosophical Logic* 7: 125-156.

This series attempts to bring the methods of model theory closer to certain philosophical concerns in modal logic. In the first part, I deal with two related philosophical positions, "de re" scepticism and anti-haecceitism. The main result is that a sentence is equivalent to a "de dicto" one if and only if its truth-value does not turn on

the identity of individuals across possible worlds. However, there are also extensions of the result to different languages, different logics, and generalisations of the concept of “de dicto”.

Fine, Kit. 1978b. “Model Theory for Modal Logic Part II: the Elimination of ‘De Re’ Modality” *Journal of Philosophical Logic* 7: 277-306.

A modal theory is said to permit formula (sentence) eliminability if each formula (sentence) is equivalent, in the theory, to a “de dicto” formula. Various particular and general results on theories which permit eliminability are established. It is shown, for example, that no consistent theory with “de dicto” axioms permits sentence eliminability and that there is only one natural logic which permits formula eliminability.

Fine, Kit. 1980. “First-Order Modal Theories, Part II — Propositions”, *Studia Logica* 39: 159-202.

Fine, Kit. 1981. “First-Order Modal Theories, Part I — Sets”, *Noûs* 15: 117-206.

Fine, Kit. 1982. “First-Order Modal Theories, Part III — Facts”, *Synthese* 53: 43-122.

Fine, Kit. 1985. “Plantinga on the Reduction of Possibilist Discourse”, in J. Tomberlin and P van Inwagen (eds.) *Alvin Plantinga* (Dordrecht: D. Reidel): 145-186.

IMPORTANT PAPER ON REDUCTIONISM ABOUT POSSIBILIA, THE PROBLEM OF ALIENS, NECESSARY EXISTENCE OF ABSTRACTA, THE INNER-OUTER TRUTH DISTINCTION, ETC.

Fine, Kit. 1989. “The Problem of De Re Modality”, in Joseph Almog, John Perry and Howard Wettstein, eds., *Themes From Kaplan* (New York: Oxford University Press): 197-272.

This paper attempts to evaluate Quine’s arguments against quantifying into modal contexts and, as such, both complements and expands on my paper “Quine on Quantifying In”. Special attention is given to the conditions for quantification to be intelligible and the question of whether quantification must be referential.

Fine, Kit. 1990. “Quine on Quantifying In”, in ???, ed., *Propositional Attitudes: The Role of Content in Logic, Language, and Mind* (Stanford: CLSI).

The paper attempts to evaluate Quine’s argument against quantifying into modal contexts. Two versions of the argument are distinguished, one of a broadly logical sort and the other relating to the nature of necessity. The first version is seen to depend upon an assumption of linguistic uniformity, which may be reasonable for certain ideal formal languages but which is problematic for natural languages; and the second version is seen to have some force in application to a metaphysical conception of modality, but to have none in application to a logical or analytic conception of modality.

Fine, Kit. 1991. “A Study of Ontology”, *Noûs* ??: 263-294.

Fine, Kit. 1994a. “Essence and Modality” in James Tomberlin, ed., *Philosophical Perspectives*, 8: *Logic and Language*, (Atascadero, CA: Ridgeview Publishing).

Several objections are levelled against the modal conception of essence and an alternative conception is proposed.

Fine, Kit. 1994b. "Senses of Essence" in Walter Sinnott-Armstrong, ed., *Modality, Morality, and Belief* (New York: Cambridge University Press).

The notion of essence is clarified in an attempt to provide a firm foundation for the theory of essence.

Fine, Kit. 1994-95. "Ontological Dependence", *Proceedings of the Aristotelian Society* 95: 269-290.

The usual account of ontological dependence in terms of necessity is criticized; and an alternative account of terms of essence is proposed. Different notions of dependence are seen to correspond to different notions of essence.

Fine, Kit. 1995. "The Logic of Essence", *Journal of Philosophical Logic* 24: 241-273.

A constructional ontology is one which serves to construct complexes from simples. The paper is concerned with the general nature of such ontologies and with their study. It attempts to say how they are constituted and by what principles they are governed; and it also attempts to see how their study may lead one to adopt certain positions and to give certain definitions. In the course of making the framework precise, a certain approach to modality, in terms of the concept of requirement, is developed.

Fisher, Mark. 1963. "Category-absurdities", *Philosophy and Phenomenological Research* 24, 260-267.

It is maintained that to show a statement to be absurd, one shows that it can't be true, that it is necessarily false, for a particular kind of reason. Sometimes category-absurdities arise because linguistic rules are broken. The author holds that one can solve the problem of what makes category-mistakes mistakes without mentioning meaning at all. Then one can go on to discuss the different kind of error that arises when meaning rules are ignored.

Føllesdal, Dagfinn. 1968. Quine on Modality. *Synthese* 19: 147-157.

An appraisal of the current status of the modalities and of Quine's arguments against them. The author accepts "Quine's thesis," that one cannot quantify into referentially opaque contexts, and argues that nobody has succeeded in making sense of such quantification. However, it is shown that modal constructions, being constructions on general terms and sentences, can be referentially transparent and extensionally opaque and that consequently the collapse of modal distinctions warned against by Quine in "Word and Object" can be avoided. This combination of referential transparency and extensional opacity is just what Quine means by essentialism, and the author therefore agrees with Quine that quantified modal logic commits one to essentialism.

Forbes, Graeme. 1982. "Canonical Counterpart Theory", *Analysis* 42: 33-37.

The original counterpart theory of D K Lewis is modified in a fairly straightforward way using a 3-place counterpart relation. It is shown that the resulting system is free of the main technical drawbacks to the original theory of Lewis; in particular, contingent existence is no longer a problem. A class of 'natural' applications for counterpart theory is suggested, for which some philosophical objections to the theory lapse.

Forbes, Graham. 1985. *The Metaphysics of Modality*. (Oxford: Clarendon Press).

The book describes the logical background to recent work on problems about necessity, then discusses the "de re/de dicto" distinction and the ontological commitments of possible worlds semantics. The rest of the book provides a unified theory of the essential properties of various categories of entity.

Forbes, Graeme. 1992. "Melia on Modalism", *Philosophical Studies* 68: 57-63.

This paper is a brief reply to one in the same issue by Joseph Melia, which criticizes my defense of modalism that I gave in my book "Languages of Possibility". Modalism is the thesis that modal operators, not quantifiers over possibilities, are the fundamental means of expressing facts about what is and is not possible.

Forrest, Peter. 1986. "Ways Worlds Could Be", *Australasian Journal of Philosophy* 64: 15-24.

This paper proposes that suitable uninstantiated properties can be used as replacement for merely possible worlds, in a theory of modality. It discusses the operations on properties required if we are to have enough structural properties to provide a satisfactory theory. And it argues that the theory so obtained conserves more of our modal intuitions than its rivals, in particular than David Lewis's realism about possible worlds.

Gibbard, Allan. 1975. "Contingent Identity", *Journal of Philosophical Logic* 4: 187-221.

Griffin, Nicholas. 1995. "Modality and the 'Tractatus'", *Dialogue* 34: 807-814.

A review of R Bradley's "The Nature of All Being: A Study of Wittgenstein's Modal Atomism". Bradley argues that Wittgenstein's modal commitments in the "Tractatus" are more extensive than usually appreciated. I argue that, nonetheless, Bradley's attempt to see Wittgenstein as a major contributor to modal "logic" is hard to square with Wittgenstein's pervasive conflation of modal issues with significance ones.

Goodman, Nelson. 1978. *Ways of Worldmaking*. (Indianapolis: Hackett).

Grice, Paul and Peter Strawson. 1956. "In Defense of a Dogma", *Philosophical Review* 65: 141-158.

Hacking, Ian. 1975. "All Kinds of Possibility" *Philosophical Review* 84: 321-337.

Hale, Bob. 1995a. "Modal Fictionalism: A Simple Dilemma", *Analysis* 55: 63-67.

Hale, Bob. 1995b. "A Desperate Fix", *Analysis* 55: 74-81.

DEALS WITH ROSEN'S 1995 REPLY TO HALE'S 1995A.

Hale, Susan. 1991. "Modal Realism Without Counterparts", *Southwest Philosophy Review* 7: 77-86.

In "On the Plurality of Worlds" (Oxford: Basil Blackwell, 1986), David Lewis argues that modal realism needs counterpart theory, rather than transworld individuals, to make sense of our modal claims about ordinary individuals. I argue that transworld mereological sums, transworld individuals which exist at different worlds by having different parts at those worlds, can do this job just as well as counterparts can.

Hanson, William H. 1997. "The Concept of Logical Consequence", *Philosophical Review* 106: 365-409.

This article is concerned with our informal, pretheoretic notion of logical consequence and with the question of whether it is adequately represented by the standard model-theoretic account. The author argues that this pretheoretic notion should be seen as including elements of necessity, generality, and apriority. He also argues that in reconstructing this notion there is no need to recognize a special logical sense of necessity and that the choice of terms to serve as logical constants is ultimately a pragmatic matter. Finally, he shows that the informal

account of logical consequence that he has presented and defended coincides with the usual model-theoretic definition for certain limited ways of selecting logical constants. The article includes criticisms of some claims and arguments found in recent works of Gila Sher and John Etchemendy.

Harman, Gilbert. 1972. "Is Modal Logic Logic?", *Philosophia* 2: 75-84.

(1) modal logic is not needed, since there are alternative accounts of modality. (2) Modal logic does not function as logic even in the thinking of its advocates, as is revealed, e.g., when the semantics of modal logic is presented in an extensional metalanguage. Furthermore, (3) when a wider view is taken, one sees that modal logic treats as logical constants expressions that belong to a large and open syntactic class, unlike other logical constants. Finally, (4) modal logic treats as sentential operators devices that function in natural language as underlying predicates. The last two points also indicate that a theory of modality making use of modal predicates is to be preferred to an account that explains away modality in terms of quantification over possible worlds.

Harman, Gilbert. 1999. *Reasoning, Meaning and Mind*. (Oxford: Oxford University Press.)

SEE CHAPTERS 5-7

Hart, W. D. 1989. "The Price of Possibility", *Pacific Philosophical Quarterly* 70: 225-239.

Why is modality of philosophical interest? Objective modal truths should answer to possibilities independent of our conceptions of them. But then it is obscure how we might have epistemic access to such possibilities, especially given the natural analogy that sensuous imagination is to knowledge of mere possibility as perception is to knowledge of actuality. For actuality acts on us causally through perception, while it seems axiomatic that mere possibility be utterly inert to us. Yet the cost, both to philosophy itself and to our conception of deliberation among alternative courses of action, of ceasing to take possibility seriously seems very high.

Hartshorne, Charles. 1963. "Real Possibility", *Journal of Philosophy* 60: 593-605.

A described state of affairs is logically possible if the description makes sense and involves no contradiction. For the description to be really possible, the minimal further requirement is that it violate no universally valid law of nature. The theory put forward here is one of the ultimate coincidence of real and logical possibility. It is argued that it is only because of lack of clarity or definiteness that really impossible descriptions appear to us logically possible. If we had a perfect command of our ideas we should see the logical absurdity in any description that is really impossible.

Hawthorne, John. (O'Leary-Hawthorne) 1996. "The Epistemology of Possible Worlds: A Guided Tour", *Philosophical Studies* 84: 283-302.

Hazen, Allen. 1979. "Counterpart-Theoretic Semantics for Modal Logic", *Journal of Philosophy* 76: 319-338.

Hazen, Allen. 1984. "Modality as Many Metalinguistic Predicates", *Philosophical Studies* 46: 271-277.

Analogies between metalinguistic treatments of modality and the theory of truth predicates are stressed. A speculative interpretative hypothesis about Carnap's "Logische syntax" is suggested.

Heidelberger, Herbert and Stephens, G. Lynn. 1978. "Transparency and Modality", *Philosophy and Phenomenological Research* 38: 549.

Harold Morick claims that sentences of necessity and possibility “de re” are referentially transparent in the sense that replacement of rigid designators by co-designative rigid designators and non-rigid designators by co-designative non-rigid designators preserves truth value in every case. We offer a counter-example to the claim.

Heller, Mark. 1998. “Property Counterparts in Ersatz Worlds”, *The Journal of Philosophy* 95: 293-316.

Hempel, Carl G. 1945. “On the Nature of Mathematical Truth”, *The American Mathematical Monthly* 52: 543-556. Reprinted in Paul Benacerraf and Hilary Putnam, eds., *Philosophy of Mathematics* (Cambridge: Cambridge University Press, 1964), pp. 377-393.

CLEAR AND ACCESSIBLE PRESENTATION OF THE VIEW THAT MATHEMATICS IS ANALYTIC AND SO LACKS FACTUAL CONTENT BECAUSE IT IS REDUCIBLE TO LOGIC.

Hintikka, Jaakko. 1957. “Modality as Referential Multiplicity”, *Ajatus* 20: 49-64.

Hintikka, Jaakko. 1960. “Aristotle’s Different Possibilities”, *Inquiry* 3: 18-28.

The author analyzes Aristotle’s notion of possibility as well as two other closely connected modal notions, necessity and impossibility.

Hintikka, Jaakko. 1961. “Modality And Quantification”, *Theoria* 27: 119-128.

Hintikka, Jaakko. 1970. “The Semantics of Modal Notions and the Indeterminacy of Ontology”, *Synthese* 21: 408-424.

Quantification into modal contexts depends on cross-identifications of individuals between possible worlds, which in turn depends on the structure and interrelations of these worlds. There is hence no guarantee that cross-identification always succeeds. It will fail for the worlds needed for realistic applications of logical modalities, partly vindicating quine’s criticism of them. In general, world lines of individuals cannot always be extended from a world to others.

Hintikka, Jaakko. 1973. *Time and Necessity: Studies in Aristotle’s Theory of Modality*. (Oxford: Clarendon Press).

Hirsch, Eli. 1986. “Metaphysical Necessity and Conceptual Truth”, in P. French, T. Uehling, and H. Wettstein, eds., *Midwest Studies in Philosophy, XI* (Minneapolis: University of Minnesota Press), 243-256.

Hiz, Henry. 1961. “Modalities and Extended Systems”, *Journal of Philosophy* 58: 723-730.

Modal terms are interpreted meta-linguistically; necessity as consequence, possibility as consistency with a system. But often systems are not complete--not complete in the sense that not every sentence or its negation is provable, or else in the sense that one can add a nonprovable formula without obtaining as consequences all formulas. This makes modal terms nontrivial. Aristotle, and many other philosophers, did not consider noncomplete systems, and only for such systems are the modal terms interesting.

Hunter, Graeme. 1981. “The Discreet Charm of Counterpart Theory”, *Analysis* 41: 73-76.

Hymers, Michael. 1991. "Something Less Than Paradise: The Magic of Modal Realism", *Australasian Journal of Philosophy*: 251-263.

David Lewis defends his "genuine" modal realism against "ersatz" modal realisms, which try to explain modality with "linguistic," "pictorial" or "magical" versions of possible worlds. Each such attempt fails, because it assumes a primitive notion of modality. Thus, Lewis argues, possible worlds must be real physical systems, distinct from our own. Lewis's critique is sound, but his own position faces the same problem: it assumes what it tries to explain. "Lewis-worlds" are magical, intrinsically representational entities. Thus, modal notions cannot be explained by possible worlds of any sort.

Ibberson, John R. 1979. "Necessity by Convention", *Mind* 88: 554-571.

Ishiguro, Hide. 1980. "Possibility", *Proceedings of the Aristotelian Society*, supplementary volume 54: 73-87.

Jubien, Michael. Forthcoming. "Analyzing Modality". In Dean Zimmerman, ed., *Oxford Studies in Metaphysics*.

Kanger, Stig. 1957. "On The Characterization of Modalities", *Theoria* 23: 152-155.

Kaplan, David. 1994. "A Problem in Possible-World Semantics", in Walter Sinnott-Armstrong, ed., *Modality, Morality, and Belief* (New York: Cambridge University Press).

Kecskemeti, Paul. 1946. "On the Interpretation of Modalities", *Philosophy and Phenomenological Research* 7, 161-163.

Kidd, Robert. 1988. "In Search of Necessity", *Dialogue* 31: 11-17.

Kneale, William. 1947. "Are Necessary Truths True by Convention?", *Proceedings of the Aristotelian Society*, supplementary volume 21: 118-133.

COMMENTS ON KARL BRITTON'S PAPER BY THE SAME NAME.

Kratzer, Angelika. 1977. "What 'Must' and 'Can' Must and Can Mean", *Linguistics and Philosophy* 1: 337-355.

Kraut, Robert. 1980. "The Metaphysics of Counterpart Theory", *Australasian Journal of Philosophy* 58: 150-157.

The technical apparatus of modal semantics--possible worlds, world-lines, counterparts, etc.--continues to arouse suspicion among philosophers of various persuasions. A way to dispel at least some of the suspicion is to provide a naturalistic interpretation of the semantical machinery. My goal here is precisely that. More specifically, I provide a behavioristically acceptable interpretation of David Lewis' counterpart theory. Reference to worlds and counterparts is construed in sober, quinean terms. The result is a "metalinguistic" construal of counterpart semantics, and thus, of modality. Having shown that counterpart theory rests on no dubious philosophical assumptions, I briefly explore some of the metaphysical consequences of the resulting theory of modality.

Kripke, Saul. 1972. *Naming and Necessity*. (Cambridge: Harvard University Press).

Kroon, Frederick W. 1981. "Kant And Kripke on The Identifiability of Modal And Epistemic Notions", *Southern Journal of Philosophy* 19: 49-60.

It is sometimes claimed that Kripke's work in "Naming and Necessity" has demonstrated that Kant was "right" in his acceptance of the synthetic "a priori", even though perhaps "wrong" in his choice of examples. This article disputes such a claim by showing that, in accepting the identification of the empirically necessary and the "a priori", Kant's position is incompatible with an acceptance of the Kripkean synthetic "a priori" (as well as the Kripkean necessary "a posteriori").

Kvart, Igal. 1982. "Quine And Modalities De Re: a Way Out?", *Journal of Philosophy* 79: 295-328.

Johnson, David. 1991. "Induction and Modality", *Philosophical Review* ??: 399-430.

Langford, C. H. 1947. "On a Certain Modal Proposition", *Mind* 56: 348-349.

Lewis, C. I. 1918. *A Survey of Symbolic Logic*. (Berkeley: University of California Press).

Lewis, C. I. 1946. *An Analysis of Knowledge and Valuation*. (La Salle, IL: Open Court).

Lewis, C. I., and C. H. Langford. 1959. *Symbolic Logic*, 2nd ed. (New York: Dover). 1st edition published in 1932.

Lewis, David. 1968. "Counterpart Theory And Quantified Modal Logic", *Journal of Philosophy* 65: 113-126. Reprinted, with postscripts, in Lewis 1983.

Quantified modal logic can profitably be replaced by a theory, formulated extensionally, about possible worlds and their inhabitants. The crucial innovation is that things are never deemed literally identical from one world to another. Rather, something in one world may be a counterpart of something in another. The counterpart relation is a matter of similarity in important respects; unlike identity, it need not be presumed to be an equivalence relation. Modality 'de re' is vindicated: a property belongs to the real essence of a thing if every counterpart of the thing, in every possible world, has the property. The same treatment can be applied to physical, epistemic, deontic, and other modalities.

Lewis, David. 1970. "Anselm and Actuality", *Noûs* 4: 175-188. Reprinted, with postscripts, in Lewis 1983.

A version of Anselm's first ontological argument is symbolized in nonmodal logic with explicit reference to conceivable worlds and beings that exist therein. An ambiguity appears: one symbolization yields an invalid argument with credible premises while another symbolizations yields a valid argument with premises we have no good, non-circular reason to accept. The credibility of one premise of the second version turns on the nature of actuality; I propose that "actual" is an indexical term closely analogous to "present"

Lewis, David. 1971. "Counterparts of Persons And Their Bodies", *Journal of Philosophy* 68: 203-211. Reprinted in Lewis 1983.

It can be argued that persons and their bodies are not identical because something is true of a person but not of his body; that he could have been (or occupied) some other body. According to my "Counterpart Theory and

Quantified Modal Logic” (J. Phil. 1968) this argument is valid. But if my method of counterparts is modified to allow for a multiplicity of counterpart relations between things at different possible worlds, the argument fails.

Lewis, David. 1973. *Counterfactuals*. (Cambridge, MA: Harvard University Press).

Lewis, David. 1983. *Philosophical Papers, volume 1*. (New York: Oxford University Press).

Lewis, David. 1986. *On the Plurality of Worlds*. (Oxford: Basil Blackwell).

THE MOST IMPORTANT BOOK ON POSSIBLE WORLDS. DEFENDS A REALIST VIEW OF POSSIBLE WORLDS AND INDIVIDUALS, AND CRITICIZES REDUCTIVE THEORIES OF POSSIBILIA.

Lewis, David. 1992. “Critical Notice of D M Armstrong, *A Combinatorial Theory of Possibility*”, *Australasian Journal of Philosophy* 70: 211-224.

This critical notice discusses four questions: (1) Armstrong’s positive and negative views about the range of possibilities; (2) his principle that all truths require truthmakers; (3) whether he succeeds in avoiding primitive modal concepts; and (4) his fictionalism about possibilities.

Lewis, David. 1996. “Maudlin and Modal Mystery”, *Australasian Journal of Philosophy* 74: 683-684.

An alleged refutation of modal realism by Tim Maudlin relies upon an Aristotelian’ principle: whatever cannot be refuted is possibly true. If that principle is disambiguated in the way that meets the needs of Maudlin’s argument, it will engender contradiction in all manner of theories of modality, realist or not; wherefore it should be rejected.

Lewy, Casimir. 1940. “Logical Necessity”, *Philosophical Review* 49: 62-68.

Lewy, Casimir. 1976. *Meaning and Modality*. (Cambridge: Cambridge University Press).

The author considers what relations hold between the sentences “‘vixen’ means the same as ‘female fox,’” “‘vixen’ means ‘female fox,’” and “a vixen may be defined as a female fox.” he lays emphasis on the need to separate “the proposition that...” and “the proposition expressed by the sentence ‘...,’” and he draws other distinctions relevant to an understanding of propositions which generate problems involving reference and modality.

Linsky, Bernard. 1991. “Truth at a World is a Modality”, *Philosophia* ??: 387-394.

The Leibnizian notion that necessarily a is P if and only if a is P at all worlds does not succeed in reducing a modality to a relation between objects, properties and worlds. Nor does the analysis of ‘truth at a world’ as a metalinguistic relation allow one to avoid primitive modalities. David Lewis can analyze ‘a is P at W’ (as ‘a is P and a is in w’) but only at the cost of abandoning trans-world individuals. I argue that only by treating ‘at w’ as a modality like ‘necessarily’ is it possible to have transworld individuals and give an account of the Leibnizian notion.

Linsky, Bernard. 1994. “Truth Makers for Modal Propositions”, *Monist* 77: 192-206.

Truth Makers can be motivated as an integral part of a correspondence theory of truth, combining that notion in D M Armstrong’s work with the role of situations in situation theory. This paper investigates how possible worlds should be added to an ontology of facts to provide truth makers for modal propositions asserting the necessary or possible truth of other propositions. Various alternatives are considered and rejected, leading to a

final ontology including possible facts, worlds and a property of actuality. Comparisons with situation theory are made along the way.

Linsky, Bernard and Ed Zalta. 1994. "In Defense of the Simplest Quantified Modal Logic", *Philosophical Perspectives* 8: 431-458.

DEFENDS THE BARCAN FORMULA, AND THE NECESSARY EXISTENCE OF EVERYTHING.

Linsky, Bernard and Ed Zalta. 1996. "In Defense of the Contingently Nonconcrete", *Philosophical Studies* 84: 283-294.

Linsky, Leonard. 1969. "Reference Essentialism, And Modality", *Journal of Philosophy* 66: 687-700.

the article first presents Quine's arguments against quantified modal logic in a manner which gives them maximum clarity and force. The main consideration is that, from the point of view of the semantics of classical quantification theory, it makes no sense to quantify into referentially opaque contexts. Ways of overcoming Quine's arguments are considered. (1) Frege's recourse to intensions as values of the variables of quantified modal logic; (2) the recourse to descriptions, with their attendant scope differences, by Sulliy and Fitch; (3) the recourse to substitutional quantification by Ruth Barcan Marcus. Alternative (1) is not necessary. Alternatives (2) and (3) must be predicated upon a clear semantics for quantified modal logic. Kripke's semantics is considered for this role. It is argued that Kripke's semantics vindicates Quine's claim that quantified modal logic entails essentialism, but that this latter doctrine is intelligible.

Locke, Don. 1969. "The Necessity of Analytic Truths", *Philosophy* 44: 12-32.

Long, Peter. 1960. "Modality And Tautology", *Proceedings of the Aristotelian Society* 60: 27-34.

Loux, Michael J., Ed. 1979. *The Possible and the Actual*. (Ithaca: Cornell University Press).

ANTHOLOGY OF CLASSIC 60S-70S PAPERS ON POSSIBLE WORLDS.

Lycan, William. 1993. "Armstrong's New Combinatorialist Theory of Modality", in John Bacon, Keith Campbell, and Lloyd Reinhardt, eds., *Ontology, Causality and Mind: Essays in Honour of D M Armstrong*, Bacon, John, eds., (New York: Cambridge University Press).

Lycan, William, and Steward Shapiro. 1986. "Actuality And Essence", *Midwest Studies in Philosophy* 11: 343-377.

The authors construct an "ersatz" system of possible worlds taking "worlds" and "nonexistent individuals" to be complex sets of properties. A modal language is developed and given a formal model-theoretic semantics. The approach is then compared to competing metaphysical accounts of modality, and a version of essentialism is defended.

MacBride, Fraser. 1999. "Could Armstrong Have Been a Universal?", *Mind* 108: 471-501.

There cannot be a reductive theory of modality constructed from the concepts of sparse particular and sparse universal. These concepts are suffused with modal notions. I seek to establish this conclusion by tracing out the pattern of modal entanglements in which these concepts are involved. In order to appreciate the structure of

these entanglements a distinction must be drawn between the lower-order necessary connections in which particulars and universals apparently figure, and higher-order necessary connections.

Mackie, J. L. 1974. "De What re Is De re Modality?", *Journal of Philosophy* 71: 551-561.

This paper discusses such 'de re' modalities as those propounded by Kripke, in particular that a person or thing could not have had an origin different from whatever origin it actually had, but could have had a different subsequent career. It shows that these can be reconciled with empiricism, being a result of our ways of handling identity along with counterfactual possibility, and offers an explanation of why we think in those ways.

Malcolm, Norman. 1940. "Are Necessary Propositions Really Verbal?", *Mind* 49: 189-203.

Marcus, Ruth Barcan. 1961. "Modalities and Intensional Languages", *Synthese* 13: 303-322.

Marcus, Ruth Barcan and Others. 1962. "Discussion on The Paper of Ruth B Marcus", *Synthese* 14: 132-143.

Marcus, Ruth Barcan. 1990. "A Backward Look at Quine's Animadversions on Modalities", in Robert B. Barrett and Roger F. Gibson, eds., *Perspectives on Quine* (Cambridge, MA: Blackwell).

Quine's grounds for the rejection of modal logic are traced. He sees C I Lewis's original work as an outcome of use-mention confusions. Additional grounds for rejection are (1) supposed problems of quantifying into modal contexts in modal predicate logic as initiated by Barcan (later Marcus); (2) substitution and identity puzzles in modal contexts; (3) apparent commitment of modal logic to "intensional" entities; (4) an invidious commitment to "essentialism." It is shown that none of the criticisms has been sustained. However it is not supposed by the author that essentialism is an untenable metaphysical view.

Marti, Genova. 1997. "Rethinking Quine's Argument on the Collapse of Modal Distinctions", *Notre Dame Journal of Formal Logic* 38: 276-294.

This paper examines and discusses an argument for the collapse of modal distinctions offered by Quine in "Reference and Modality" and in "Word and Object" that relies exclusively on a version of the "principle of substitution". It is argued that the argument does not affect its historical targets: Carnap's treatment of modality, presented in "Meaning and Necessity", and Church's "Logic of Sense and Denotation", developed by Kaplan; nor does it affect a treatment of modality inspired in Frege's treatment of oblique contexts. It is argued, nevertheless, that the immunity of those systems to Quine's argument depends on the success of their rejection of the "principle of substitution" presupposed by Quine.

Martin, R. M. 1952. "On 'Analytic'", *Philosophical Studies* 3: 42-47.

Mason, Richard. "Explaining Necessity", *Metaphilosophy* ??: 382-390.

The aim is to show that The Problem of the Explanation of Necessary Truth arises from a particular context, or set of assumptions. We can make a *prima facie* distinction between necessary truth and necessity. The explanation of necessary truth poses further questions about truth and meaning. In a rationalist framework, to be necessary is to be explicable. Non-necessity may be seen as aberrant. The conclusion is not that we should become rationalists. It is that a logical notion uprooted from one context may not survive when transplanted to another.

Mayo, Bernard. 1983. "Conjectures and Modalities", *Analysis* 43: 221-224.

McCarthy, Timothy. 1986. "Platonism And Possibility", *Journal of Philosophy* 83: 275-290.

This paper argues, on a mixture of technical and philosophical grounds, that metalinguistic interpretations of modality are incompatible with modal interpretations of classical mathematics.

McCarthy, Timothy. 1987. "Modality, Invariance, and Logical Truth", *Journal of Philosophical Logic* 16: 423-443.

McGinn, Colin. 1976. "'A Priori' And 'A Posteriori' Knowledge", *Proceedings of the Aristotelian Society* 76: 195-208.

This paper proposes a criterion for distinguishing "a priori" from "a posteriori" knowledge in which causality plays the key part. The criterion is seen to be well-motivated and extensionally adequate by consideration of different areas of knowledge. Relations between this epistemic distinction and metaphysical modality are articulated, and some points of disagreement with Saul Kripke noted.

McGinn, Colin. 1981. "Modal Reality", in Richard Healey, ed., *Reduction, Time and Reality* (Cambridge: Cambridge University Press): 143-187.

Deals with the truth conditions for modal statements.

McGinn, Colin. 2000. "Necessity", in his *Logical Properties* (Oxford, Oxford University Press).

McKay, Thomas. 1975. "Essentialism in Quantified Modal Logic", *Journal of Philosophical Logic* 4: 423-438.

Quine's thesis that quantified modal logic (QML) involves essentialism is examined within the framework of Kripke's semantics. It is shown that, despite parson's proof that anti-essentialist models for modal theories exist, there are important respects in which QML involves the commitments Quine alleges. Given any interpreted theory, quantifying in (de re modality) is eliminable if the interpretation is anti-essentialist. Thus, ineliminable uses of the characteristic resources of QML must involve essentialism. In addition, if Kripke's semantics is modified slightly, then for every QML formula a, there exists a formula b lacking quantifying in (lacking de re modality) such that a is necessarily equivalent to b with respect to all anti-essentialist models.

McKay, Thomas. 1986. "Lowe And Baldwin on Modalities", *Mind* 95: 499-505.

McMichael, Alan. 1983. "A Problem For Actualism About Possible Worlds", *Philosophical Review* 92: 49-66.

CLASSIC PAPER ON THE PROBLEM OF ALIENS FOR REDUCTIONISM ABOUT POSSIBILIA

McNamara, Paul. 1990. "Leibniz on Creation, Contingency and Per-Se Modality", *Studia Leibnitiana* 22: 48-68.

Leibniz's first problem with contingency stems from his doctrine of divine creation (not his later doctrine of truth) and is solved via his concepts of necessity per se, etc. (not via his later concept of infinite analysis). I scrutinize some of the earliest texts in which the first problem and its solution occur. I compare his "per se modal concepts" with his concept of analysis and with the traditional concept of metaphysical necessity. I then

identify and remove the main obstacle to Leibniz's employment of these concepts by reflecting on his concept of a world and comparing it with contemporary conceptions. Finally I sketch the place that this early problem and its solutions had in the context of his mature philosophy. A disagreement between Sleigh and Adams which hinges on the assumption that there is just one problem with competing solutions is seen to dissolve in this light.

Meixner, Uwe. 1992. "An Alternative Semantics for Modal Predicate-Logic", *Erkenntnis* 37: 377-400.

The semantical framework is fundamentally intensional: neither possible worlds nor sets as basic entities, but rather, besides individuals, propositions, properties and relations (in intension). Logical truth is defined in terms of logical form (without mentioning this notion) without employing sets of models and the concept of truth in a model. Truth itself is explicitly defined (without recursion); the truth-conditions for the logical constants of the object-language become theorems derivable from the axioms for "to intend"--the basic semantical relation.

Melia, Joseph. 1992. "Against Modalism", *Philosophical Studies* 68: 35-56.

I examine Modalism: the position that the modal sentences of ordinary language should not be analysed in terms of possible worlds, but should be analysed with operators such as the box and diamond. Notoriously, there are certain modal sentences not analyzable using only the box and diamond, so some philosophers have introduced new operators to analyse them. I argue that the operators hitherto introduced cannot be understood without taking them to refer to possible objects.

Melia, Joseph. 2001. "On Reducing Possibilities to Language", *Analysis* 61: 19-29.

Melia, Joseph. 2003. *Modality*. (Chesham: Acumen Press.)

EXCELLENT INTRO TO MODALITY

Menzies, Peter, and Philip Pettit. 1994. "In Defence of Fictionalism about Possible Worlds", *Analysis* 54: 27-36.

Modal functionalism is the view that talk about possible worlds should be construed as talk about fictional objects. The version of modal fictionalism originally presented by Gideon Rosen adopted a simple prefixing strategy for fictionalising possible worlds analyses of modal propositions. However, Stuart Brock and Rosen himself in a later article have independently advanced an objection that shows that the prefixing strategy cannot serve fictionalist purposes. In this paper we defend fictionalism about possible worlds by showing that there are other strategies besides the prefixing strategy for fictionalising talk about possible worlds, and that these strategies are proof against the objection advanced by Brock and Rosen.

Menzel, Christopher. 1990. "Actualism, Ontological Commitment, and Possible World Semantics", *Synthese* 85: 355-389.

Actualism is the doctrine that the only things there are, that have being in any sense, are the things that actually exist. In particular, actualism eschews possibilism, the doctrine that there are merely possible objects. It is widely held that one cannot both be an actualist and at the same time take possible world semantics seriously--that is, take it as the basis for a genuine theory of truth for modal languages, or look to it for insight into the modal structure of reality. For possible world semantics, it is supposed, commits one to possibilism. In this paper I take issue with this view. To the contrary, I argue that one can take possible world semantics seriously and yet remain in full compliance with actualist scruples.

Menzel, Christopher. 1991. "The True Modal Logic", *Journal of Philosophical Logic* 20: 331-374.

Menzel, Christopher. 1993. "Singular Propositions and Modal Logic", *Philosophical Topics* 21: 113-148.

Menzel, Christopher. 2008. "Actualism". Stanford Encyclopedia of Philosophy, <http://plato.stanford.edu/entries/actualism>.

Miller, Richard. 1989. "Dog Bites Man: A Defence of Modal Realism", *Australasian Journal of Philosophy* 67: 476-478.

The recent attempt by William Lycan to find fault with what he calls "Mad Dog Modal Realism" is compared to other recent criticism and examined in its own right. Lycan objects that Lewis cannot explicate the crucial notion of a world without implicitly invoking the notion of possibility, which it is meant to explain. It is admitted that this would be a grave, even fatal, flaw in any philosophical account of modality. But examination of Lewis's work shows that he can define "world" without modal notions while, ironically, Lycan is forced to admit that he cannot do so himself.

Millar, Richard. 1991. "Reply of a Mad Dog", *Analysis* ??: 50-54.

In this paper I seek to defend "Mad Dog Modal Realism" from an objection by Devitt and Sterelny. Devitt and Sterelny allege that explanations invoking possible worlds are not explanations because they are not causal explanations. Strange to say, Lewis agrees that possibilia cannot figure in any "explanations." He accepts this restriction on the use of "explanation" and prefers to call the benefits of possibilia "analyses." I then go on to show how Lewis's answer to the epistemological objections of Lycan, Richards, et al. can be reformulated to answer Devitt and Sterelny.

Miller, Richard. 1992. "Concern for Counterparts", *Philosophical Papers* 21: 133-140.

This paper refutes an old objection to genuine modal realism. The difficulty was first offered by Saul Kripke and has recently been reformulated by Simon Blackburn and Gideon Rosen. This problem alleges that an analysis of counterfactuals in terms of what is true of our counterparts can never adequately capture our sense of immediate and personal concern with the truth of counterfactuals about ourselves because we can never be concerned with what befalls others (our counterparts) the way we are concerned with what happens to ourselves. This objection fails because we have an immediate and personal concern that we should be happier than those to whom we compare ourselves, especially our counterparts. And the truth conditions for counterfactuals about ourselves involve just such comparisons of ourselves with others similar to us.

Millican, Peter. 1993. "Statements and Modality: Strawson, Quine and Wolfram", *International Journal of Moral and Social Studies* 8: 315-326.

Sybil Wolfram extended the Strawsonian tradition in *Philosophical Logic*, applying the sentence-statement distinction to a range of important issues. 1) One of her major concerns is to oppose Quine's Necessity Argument, which seems to show that statements cannot coherently be assigned a modal status based on the analyticity of the sentences which express them. 2) She does so by defining a necessary statement as one which "can be" expressed by an analytic sentence. 3) Unfortunately this encounters problems with Kripke's weak notion of necessity (true whenever the relevant objects exist), and 4) can be refuted by sentences which are guaranteed to express a truth (i.e., which are analytic), even though the statement expressed is manifestly contingent. 5) However this new category of the "contingent analytic" can be accommodated within a

Strawsonian framework, by simply defining a necessary statement as one necessarily true of the relevant objects. It even provides an argument in favor of some such multi-level framework of analysis.

Milmed, B. K. 1957. Counterfactual Statements And Logical Modality, *Mind* 66: 453-470.

A counterfactual conditional statement is interpreted as expressing a modal (logically necessary) implication, in a logical system that includes a physical axiom suitable to make the counterfactual statement tautological. The axiom is usually a physical law, because it is pointless to adopt an axiom that is true for only one occasion; but the means of justifying laws (i.e., induction) need not be considered in interpreting the counterfactuals that depend on them.

Mondadori, Fabrizio. 1976. "Modal Realism: The Poisoned Pawn", *Philosophical Review* 85: 3-20.

Montague, Richard. 1960. "Logical Necessity, Physical Necessity, Ethics And Quantifiers", *Inquiry* 3: 259-269. Reprinted in his *Formal Philosophy* (New Haven: Yale University Press, 1974.)

The author attempts to contribute to the problem of interpreting 'it is logically necessary that', 'it is physically necessary that', and 'it is obligatory that'.

Montague, Richard. 1963. "Syntactical Treatments of Modality, with Corollaries on Reflexion Principles and Finite Axiomatizability", *Acta Philosophica Fennica* 16: 153-167. Reprinted in his *Formal Philosophy* (New Haven: Yale University Press, 1974.)

SHOWS USING GODEL-STYLE REASONING THAT 'IS NECESSARY' CANNOT BOTH BE A PREDICATE OF SENTENCES AND ALSO OBEY STANDARD MODAL LOGIC.

Mormann, Thomas. 1994. "Accessibility, Kinds, and Laws: A Structural Explication", *Philosophy of Science* 61: 389-406.

"Accessibility" is a crucial concept of possible worlds semantics. The simplest approach to accessibility is the "magical theory" that construes this relation as analogous to spatial or temporal relations. In this paper I give a nonmagical structural account of the accessibility relation that can be used to give a necessitarian account of kinds and laws. Laws are characterized in a structural way as stable invariants of the world's gestalt. Finally, I point out how the structural approach can be embedded in a general representational theory of modality.

Neale, Stephen. 2000. "On a Milestone of Empiricism", in Alex Orenstein and Petr Kotatko, eds., *Knowledge, Language and Logic* (Dordrecht: Kluwer), pp. 237-346.

USEFUL DISCUSSION OF QUINE'S CRITICISMS OF QUANTIFIED MODAL LOGIC, AND ALSO CONTAINS A VALUABLE SURVEY OF THE HISTORY OF THE DEVELOPMENT OF MODAL LOGIC.

Nelson, John. O. 1964. "A Question of Entailment", *Review of Metaphysics* 18: 364-377.

A R Anderson and N D Belnap, Jr., maintained in their 1962 Article, "The Pure Calculus of Entailment," that necessary propositions can be entailed only by necessary propositions, and not by contingent ones. Against this R W Ashby offered an apparently conclusive counterexample in "Entailment and Modality" (1963). In support of Anderson and Belnap, the author of the present paper develops a definition of entailment and argues that contingent propositions never entail necessary ones. However, psychological factors may intervene in our

logical perceptions to produce an appearance or illusion of entailment between a contingent and a necessary proposition.

Nolan, Daniel. 1996. "Recombination Unbound", *Philosophical Studies* 84: 239-262.

GOOD PAPER ON THE FORREST-ARMSTRONG OBJECTION TO LEWIS'S MODAL REALISM

Nolan, Daniel. 1997. "Three Problems for "Strong" Modal Fictionalism", *Philosophical Studies* 87: 259-275.

Modal fictionalism, the theory that possible worlds do not literally exist but that our talk about them should be understood in the same way that we understand talk about fictional entities, is an increasingly popular approach to possible worlds. This paper will distinguish three versions of modal fictionalism and will show that the third, a version endorsed by some of the most prominent modal fictionalists, faces at least three serious objections: that it makes modality too artificial, the modal fiction does not have the representative resources it needs and the approach has trouble accounting for propositions.

Nolan, Daniel and John (O'Leary-) Hawthorne. 1996. "Reflexive Fictionalisms", *Analysis* 56: 23-32.

There is a class of fictionalist strategies (the reflexive fictionalisms) which appear to suffer from a common problem: the problem that the entities which are supposedly fictional turn out, by the lights of the fictionalist theory itself, to exist. The appropriate solution is to reject so-called strong fictionalism in each case: that is, to reject the variety of fictionalism which takes appeal to the domain of fictional entities to provide an explanation or analysis of the operators or predicates with which the objects are systematically correlated.

Nolt, John E. 1980. "Abstraction And Modality", *Philosophical Studies* 38: 111-127.

Abstraction is usually regarded as a property of certain objects--sets, numbers, propositions, properties, etc. this paper proposes that it be viewed instead as a feature of the languages or conceptual systems by means of which we conceive such objects--specifically, the property of being predicate-poor. Thus there are no abstract objects--only possible concrete ones understood in the terms of language of various degrees of abstraction.

Noonan, Harold. 1994. "In Defence of the Letter of Fictionalism", *Analysis* 54: 133-139.

Norton, Bryan G. 1980. "De re Modality, Generic Essences and Science", *Philosophia* 9: 167-186

Otte, Richard. 1982. "Modality as a Metalinguistic Predicate", *Philosophical Studies* 41: 153-160.

Pap, Arthur. 1955. "Strict Implication, Entailment, And Modal Iteration", *Philosophical Review* 64: 604-613.

Pap, Arthur. 1958. *Semantics and Necessary Truth*. (New Haven: Yale University Press).

OLD CLASSIC ON THE "CONVENTIONALIST" ACCOUNT OF MODALITY.

Pargetter, Robert and Barbara Davidson. 1980. "Possible Worlds and a Theory of Meaning for Modal Language", *Australasian Journal of Philosophy* 58: 380-387.

Possible world semantics has been seen by some as providing a plausible account of the meaning of modal expressions in language. This account has been rejected by many philosophers because of ontological worries about possible world. They claim either that the concept of a possible world is incomprehensible or that there are no possible world other than the actual world. The possible world semantics is defended against such claims. Comprehensibility is demonstrated by providing individuation and identity criteria for possible world. Further, it is argued that the success of the possible world semantics, plus the absence of any preferable alternative theory, constitutes evidence for the existence of (merely) possible worlds. Thus those who would reject the possible world semantics as an account of the modalities in language must either provide grounds other than those relating to the ontological commitments of the semantics for so doing, or develop a preferable alternative theory.

Parsons, Terence. 1967. "Grades of Essentialism in Quantified Modal Logic", *Noûs* 1: 181-191.

REJECTS QUINE'S CLAIM THAT QML REQUIRES ESSENTIALISM.

Peacocke, Christopher. 1978. "Necessity and Truth Theories", *Journal of Philosophical Logic* 7: 473-500.

DISCUSSES GIVING A TRUTH-THEORETIC, RATHER THAN MODEL-THEORETIC, SEMANTIC THEORY FOR MODALITY.

Peacocke, Christopher. 1980. "Causal Modalities and Realism" in Mark Platts, ed., *Reference, Truth and Reality* (London: Routledge and Paul): 41-68.

Peacocke, Christopher, 1997. "Metaphysical Necessity: Understanding, Truth and Epistemology", *Mind* 106: 521-574.

This paper presents an account of the understanding of statements involving metaphysical modality, together with dovetailing theories of their truth conditions and epistemology. The account makes modal truth an objective matter, whilst avoiding both Lewisian modal realism and mind-dependent or expressivist treatments of the truth conditions of modal sentences. The theory proceeds by formulating constraints a world-description must meet if it is to represent a genuine possibility. Modal truth is fixed by the totality of the constraints. To understand modal discourse is to have tacit knowledge of the body of information stated in these constraints. Modal knowledge is attained by evaluating modal statements in accordance with the constraints. The question of the general relations between modal truth and knowability is also addressed. The paper includes a discussion of which modal logic is supported by the presented theory of truth conditions for modal statements.

Peacocke, Christopher. 1998. "The Principle-Based Conception of Modality: Sullivan's Question Addressed", *Mind* 107: 847-849.

Peacocke, Christopher. 1999. *Being Known*. (Oxford: Clarendon Press).

Peacocke, Christopher. 2002a. "Principles for Possibilia", *Noûs* 36: 486-508. Also appeared in *Philosophy* 51 (Supp., 2002): 119-145.

UPDATES THE ACCOUNT IN PEACOCKE 1997 AND 1999 TO ACCOUNT FOR ALIEN POSSIBILITIES

Peacocke Christopher. 2002b. "Précis of *Being Known*" and "Replies to Critics", *Philosophy and Phenomenological Research* 64: 636-640, 663-679.

Percival, Philip. 1992. "Thank Goodness That's Non-Actual", *Philosophical Papers* 21: 191-213.

In contrast to Lewis at one extreme, and Prior at the other, Mellor treats time and modality disanalogously by spatialising' the former but not the latter. This asymmetrical position requires an argument for not spatialising modality the temporal analogue of which isn't equally persuasive. I consider whether the modal analogue of Prior's Thank goodness' argument--which seems to be akin to an argument against Lewis by Adams--is one such. I argue that it isn't. I consider various means of resisting this argument, and show that all are no less cogent than their analogues resisting Prior's original temporal argument. Of these alternatives, the one which refines ideas of Evans is defended in both the temporal and modal cases.

Perszyk, Kenneth J. 1993. "Against Extended Modal Realism", *Journal of Philosophical Logic* 22: 205-214.

Extended modal realism is David Lewis's realism about possible worlds and their inhabitants. Takashi Yagisawa has given the most serious defence in print of the conditional thesis that if Lewisian modal realism is to be accepted, then extended modal realism is to be accepted. He has two (main) arguments for this thesis, what I shall call the Parallel-Case Argument' and the Theoretical-Benefits Argument'. A central issue in the metaphysics of modality is whether Yagisawa's thesis is right. My aim in this paper is to reject his thesis by rebutting his two arguments in support of it.

Place, Ullin T. 1997. "De re' Modality without Possible Worlds", *Acta-Analytica*: 129-143.

A distinction is drawn between "de dicto" modality which is a matter of which propositions can, cannot and must be "true", given the laws of logic, and "de re" modality which is a matter of which situations (events or states of affairs) can, cannot and must "exist", given the laws of nature. It is argued that Kripke's "de re" modality, defined in terms of what is true in some possible world, no possible world and all possible worlds, is an unsatisfactory amalgam of the two.

Plantinga, Alvin. 1961. "It's Actual, So It Must Be Possible", *Philosophical Studies* 12: 61-64.

In an earlier paper Norwood Hanson argues that the following two propositions are inconsistent: (a) if p is true, then p is logically possible and b. if p is logically contingent, then p entails no necessary propositions. They are inconsistent, says hanson, for it can be demonstrated that: c. if p is logically contingent, then "p is logically possible" is necessary. Further, he argues, by the first principle p entails "p is possible," while by principle c, "p is possible" is necessary; hence a necessary proposition is entailed by a contingent one, which contradicts principle b. the author argues that what Hanson has actually shown is that the conjunction of "p is contingent" with "p is logically impossible" is contradictory, which, he says, is quite different from what he claims to prove.

Plantinga, Alvin. 1969. "De re et De Dicto", *Noûs* 3: 235-258. Reprinted in Plantinga 2003.

This paper considers and rejects some objections to the idea of modality de re and shows how to find, for any proposition expressing modality de re an equivalent proposition expressing modality de dicto but not modality de re .

Plantinga, Alvin. 1974. *The Nature of Necessity*. (Oxford: Clarendon).

This book, one of the first full-length studies of the modalities to emerge from the debate to which Saul Kripke, David Lewis, Ruth Marcus and others have contributed, is an exploration and defence of the notion of modality de re, the idea that objects have both essential and accidental properties. The argument is developed by means of the notion of possible worlds and ranges over key problems including the nature of essence, trans-world identity, negative existential propositions, and the existence of unactual objects in other possible worlds. In the

final chapter the author applies his logical theories to the elucidation of two problems in the philosophy of religion: the problem of evil and the ontological argument. The first of these, the problem of reconciling the moral perfection and omnipotence of God with the existence of evil, can, he concludes, be resolved, and the second given a sound formulation. The book ends with an appendix on Quine's objection to quantified modal logic.

Plantinga, Alvin. 1976. "Actualism and Possible Worlds", *Theoria* 42: 139-160. Reprinted in Loux 1979 and Plantinga 2003.

REDUCES POSSIBLE WORLDS TO ABSTRACT ENTITIES — STATES OF AFFAIRS.

Plantinga, Alvin. 1987. "Two Concepts of Modality: Modal Realism and Modal Reductionism", In James Tomberlin, ed., *Philosophical Perspectives* (Atascadero, CA: Ridgeview) 189-231.

Plantinga, Alvin. 2003. *Essays in the Metaphysics of Modality*. Edited by Matthew Davidson. (New York: Oxford University Press).

Prakel, Judith. 1977. "Some Preliminary Suggestions for the Mirroring of Non-metaphysical Modalities in Lesniewski's Ontology", *Studia Logica* 36: 363-376.

Priest, Graham. 1976. "Modality as a Meta-concept", *Notre Dame Journal of Formal Logic* 17: 401-414.

The paper argues that logical necessity is a meta-linguistic feature of a given language, in the sense that truth is, and that normal modal logics are therefore linguistically muddled, since they contain both modal and non-modal theses; it shows how, given any system of analytic sentences in a language O, to construct a meta-language G, of sufficient power to talk about the modalities of sentences of O. by semantic considerations, it is proved that taking O to be the 2-valued propositional calculus, the meta-language G, generated, bears a striking resemblance to the standard modal logics T, S4, and S5.

Priest, Graham. 1977. "A Refoundation of Modal Logic", *Notre Dame Journal of Formal Logic* 18: 340-354.

The paper provides a new foundation for modal logic. It argues that, as presently conceived, modal logic is ill-founded and that it is precisely for this reason that present modal predicate logics appear so unsatisfactory. Necessary truth, like truth, is a semantic concept and should be treated as such. The paper therefore sets up and examines a formal system for modal logic, as conceived in this way. It then considers the semantics for such languages, and constructs some new modal semantics appropriate to this conception of modality. Some completeness results are proved, and a few interesting corollaries inferred. The last part of the paper shows how most of the philosophical problems associated with quantified modal logics vanish if modality is interpreted in this way. It is shown that this conception clarifies the nature of identity in modal systems, and the nature of intensional objects, and resolves quine's 'paradoxes'. This supports the final claim that this conception of modality is the most natural one.

Prior, A. N. 1960. "The Runabout Inference Ticket", *Analysis* 21: 38-39.

Przelecki, M. 1976. "On Possibility And Possible Worlds", *Poznan Studies in the Philosophy of the Sciences and Humanities* 2: 1-11.

The paper is an attempt to show that model theoretic explications of modal concepts do not grasp the traditional philosophical content of modal notions. Within that approach, "possible worlds" are nothing else but different possible interpretations of a given language, and possibility defined as "truth in some possible world" simply

amounts to truth under some possible interpretation of the language. Being different from the actual one, that possible interpretation assigns to a given statement some meaning different from its usual sense, which seems to disagree with traditional philosophical intuitions of modality.

Putnam, Hilary. 1962. "It Ain't Necessarily So", *Journal of Philosophy* 59: 658-671.

Putnam, Hilary. 1973. "Meaning and Reference", *Journal of Philosophy* 70: 699-711.

Putnam, Hilary. 1975. "The Meaning of 'Meaning'", in K. Gunderson (ed.), *Language, Mind and Knowledge, Minnesota Studies in the Philosophy of Science* 7 (Minneapolis, University of Minnesota Press), reprinted in Hilary Putnam, *Mind, Language and Reality: Philosophical Papers, volume 2* (Cambridge: Cambridge University Press, 1975).

Quine, W. V. O. 1936. "Truth by Convention", in O. H. Lee, ed., *Philosophical Essays for A. N. Whitehead* (New York: Longmans). Reprinted in W. V. O. Quine, *The Ways of Paradox* (New York: Random House, 1966).

Quine, W. V. O. 1947. "The Problem of Interpreting Modal Logic", *Journal of Symbolic Logic* 12: 43-48.

Quine, W. V. O. 1951. "Two Dogmas of Empiricism", *Philosophical Review* 60: 20-43, reprinted in Quine 1953a.

Quine, W. V. O. 1953a. *From a Logical Point of View*. (Cambridge: Harvard University Press).

Quine, W. V. O. 1953b. "Three Grades of Modal Involvement", *Proceedings of the XIth International Congress of Philosophy, Brussels, Volume 14* (Amsterdam: North-Holland Publishing Co.), reprinted in Quine 1966.

Quine, W. V. O. 1953c. "Reference and Modality", in Quine 1953a, pp. 139-159.

Quine, W. V. O. 1960a. *Word and Object*. (Cambridge: MIT Press).

This is Quine's most ambitious semantical undertaking in which concessions to the material object language accompany a stimulus-behavioral account of verbal meaning. He further shores up favorite theses of the past, including difficulties in the way of synonymy claims and the advantages for scientific communication of formalizing ordinary discourse.

Quine, W. V. O. 1960b. "Carnap and Logical Truth", in *Synthese* 12. Reprinted in Quine 1966.

Quine, W. V. O. 1966. *The Ways of Paradox*. (New York: Random House.)

Quine, W. V. O. 1970. *Philosophy of Logic*. (Englewood: Prentice-Hall).

This book offers a survey of the central topics in the philosophy of logic. There are chapters on "meaning and truth," "grammar," "truth," "logical truth," "the scope of logic," "deviant logics," and "the ground of logical truth." some of the topics discussed are the status and elimination of propositions, tarski's definition of truth and

the notion of satisfaction, the relation of logic to set theory, and the question of the viability of alternative logics.

Quine, W. V. O. 1976. "Worlds Away", *Journal of Philosophy* 73: 859-863.

The analogy between identifying an object from world to possible world and identifying it from moment to moment has been offered to justify quantifying over objects across worlds. It is no justification, because the problem raised by so quantifying is not that of identifying objects across worlds, but that of interpreting predicates across worlds. It reduces to deciding what properties are essential to an object, or, equivalently, what designators are rigid. In the logic of belief it reduces to deciding what one knows when one knows who someone or what something is. But this makes sense only relative to situations.

Ray, Greg. 1996. "Ontology-Free Modal Semantics", *Journal of Philosophical Logic* 25: 333-361.

I offer a purely extensional, representational account and prove that it does all the work that Menzel's account does. The result of this endeavor is an account of model-theoretic semantics for modal languages requiring nothing but pure sets and the actual objects of discourse. Since ontologically beyond what is *prima facie* presupposed by the model theory itself. Thus, the result is truly an ontology-free model-theoretic semantics for modal languages. That is to say, getting genuine modal semantics out of the model theory is ontologically cost-free. Since my extensional account is demonstrably no less adequate, and yet is at the same time more ontologically frugal, it is certainly to be preferred.

Reichenbach, Hans. 1976. *Laws, Modalities, and Counterfactuals*. (Berkeley: University of California Press).

Reinhardt, William N. 1980. "Necessity Predicates And Operators", *Journal of Philosophical Logic* 9: 437-450.

Many authors have suggested defining modal operators such as necessity as predicates of sentences. This paper explains why observations of Godel-Lob-Montague show that such an analysis does not work. The purpose of the paper is to point out the nature of the error so that the relevant issues may be addressed more adequately. Among these are the question whether there is a translation procedure or a reduction of statements with operators to statements with predicates only. The conclusion is that this is possible only in a weak sense. The paper includes some suggestions for further work in this area.

Rescher, Nicholas. 1974. *Studies in Modality* (Oxford: Blackwell).

Rescher, Nicholas. 1964. "A Quantificational Treatment of Modality", *Logique et Analyse* 7: 34-42.

Rescher, Nicholas. 1962. Modality Conceived as a Status, *Logique et Analyse* 5: 81-89.

Rescher, Nicholas. 1960. "Identity, Substitution, And Modality", *Review of Metaphysics* 14: 159-167.

Rosen, Gideon. 1990. "Modal Fictionalism", *Mind* 99: 327-354.

This paper develops an ontologically innocent alternative to Lewis's modal realism. Statements of the form 'There is a world at which P' are read as elliptical for 'According to the hypothesis of a plurality of worlds, there is a world at which P', the latter being no more ontological loaded than 'According to Frege's theory, there is a set of all sets'. An analysis of modal discourse employing this fictionalist paraphrase is sketched--

roughly: 'Possibly P' is true iff according to the hypothesis of a plurality of worlds, there is a world at which P-- and compared with Lewis's realist construal of possible worlds talk.

Rosen, Gideon. 1993. "A Problem for Fictionalism About Possible Worlds", *Analysis* 53: 71-81.

Fictionalism about possible worlds is the view that talk about worlds in the analysis of modality is to be construed as ontologically innocent discourse about the content of a fiction. Versions of the view have been defended by D M Armstrong (in "A Combinatorial Theory of Possibility") and by myself (in "Modal Fictionalism", "Mind" 99, July 1990). The present note argues that fictionalist accounts of modality (both Armstrong's version and my own) fail to serve the fictionalist's ontological purposes because they imply that as a matter of necessity there exist many worlds.

Rosen, Gideon. 1995. "Modal Fictionalism Fixed", *Analysis* 55: 67-73.

REPLY TO HALE 1995A.

Rosen, Gideon. 2002. "Peacocke on Modality", *Philosophy and Phenomenological Research* 64: 641-648.

PART OF A SYMPOSIUM ON PEACOCKE 1999.

Ross, James. 1989. "The Crash of Modal Metaphysics", *Review of Metaphysics* 43: 251-279.

"Possible Worlds" metaphysics is bankrupt. This is a series of arguments to display that no "genuine semantics" for quantified modal logic is true. Even the formalizations themselves, understood extensionally, revise what we mean and commit us to realities we repudiate. Moreover, principles like "whatever is possible is necessarily possible," and "whatever is necessary is necessarily necessary," are demonstrably false. The merely possible, unrooted in the actual, cannot be brought within the range of reference. Whatever might have been, wholly other than what is ever actual, is logically inaccessible because it is without content.

Routley, R. and Routley, V. 1969. "A Fallacy of Modality", *Noûs* 3:129-153.

The ancient principle of distributivity of necessity (DN), that necessary propositions only entail necessary propositions, has acquired an upstart companion, the distributivity of contingency (DC), which threatens to borrow some plausibility from DN; violations of these principles are sometimes lumped together as "fallacies of modality". The DC principle, according to which contingent statements only entail contingent statements, has played a specially important role in the discussion of entailment. DC also deserves attention because of the importance it appears to be assigned in many philosophies, as the principle that facts, contingent matters such as relations of solid bodies or linguistic data, can't tell one anything about logic or mathematics, more precisely that contingent statements can't have any logically necessary consequences. This thesis has often been taken (erroneously) to be very reasonable. In this guise DC has frequently been used to criticise linguistic theories of logical necessity and empiricist conceptions of mathematics. We contend, however, that the DC principle, and minor modifications of it, are false; and accordingly that criticisms based on it carry no weight.

Routley, R. and Routley, V. 1979. "Some Bad Arguments for and against Conventionalism", *International Logic Review* 10: 84-90.

Roy, Tony. 1993. "Worlds and Modality", *The Philosophical Review* 102: 335-362.

What is it in virtue of which metaphysically modal statements are true or false? Some appeal to quantification over possible worlds. But I suggest that there are reasons to wonder whether possible worlds (as developed by Lewis and by Plantinga) are even relevant to modal truth. I then argue that there is a sense in which possible worlds of a certain sort may be seen as relevant to modality. The “worlds” represent combinations allowable under fixed constraints. On my account, for metaphysical modality, the important constraints have to do with the actual structures of non-modal properties.

Roy, Tony. 1995. “In Defense of Linguistic Ersatzism”, *Philosophical Studies* 80: 217-242.

David Lewis admits that his modal realism is often met with an “incredulous stare”. As an alternative, say a “world-story” is a maximal consistent set of sentences, and modal notions are analyzed in terms of them. Lewis argues that “ersatz” accounts of this sort are both circular and incorrect: circular because the analysis of consistency depends on modality; incorrect because world-stories fail to represent every way the world can be. Further, Patrick Grim and others argue that there are no maximal sets of sentences in the sort of language required. I respond that there are ways to resist these objections.

Ryle, Gilbert. 1949. “Meaning and Necessity”, *Philosophy* 24: 69-76.

Salmon, Nathan. 1993. “Analyticity and Apriority”, *Philosophical Perspectives* 7: 125-133.

Schweizer, Paul, 1987. “Necessity Viewed as a Semantical Predicate”, *Philosophical Studies* 52: 33-47.

The primary goal of the paper is to construct several infinite metalinguistic hierarchies in which necessity is treated as a predicate of sentences rather than as an operator. The salient feature of these languages is that the formation rules do not place any special restrictions on the naming function, so that quotational names of sentences behave as ordinary singular terms. But the diagonal lemma still fails, and Montague’s inconsistency is thereby averted. The necessity predicate can attach to names of open formulas, but quantification into modal contexts is treated as vacuous, while the non-modal logic remains first order.

Schweizer, Paul. 1992. “A Syntactical Approach to Modality”, *Journal of Philosophical Logic* 21: 1-31.

The purpose of the work is to provide two closely related formalizations of propositional modal logic, where the necessity device is treated as a predicate of syntactical expressions. The basic strategy for addressing Montague’s inconsistency results is to require that the extension of the modal predicate be defined with respect to a grounded hierarchy of formulas. In the first system this is achieved by using structurally primitive quotation names, and in the second by restricting the axiom schemas to the corresponding grounded sublanguage. Both these approaches allow operator modal logic to be embedded in a first-order setting, and hence possible worlds are not used as model-theoretic primitives.

Seddon, George. 1972. “Logical Possibility”, *Mind* 81: 481-494.

Sellars, Wilfred. 1953. “Inference And Meaning”, *Mind* 62: 313-338.

This discussion is focused on the notions of inference in enthymeme expressions. This is presented as problematic in that in a given enthymeme, one must admit that the inference is based on a non-logical or material necessity. The contention is that there are material rules of inference as regarding the strictly formal rules of logical inference, but they are remanded to second-class status in that, unlike formal rules, they are not necessarily conditions of the very existence of terms or concepts. Also, their authority is purely derivative.

Shalkowski, Scott A. 1992. "Supervenience and Causal Necessity", *Synthese* 90: 55-87.

Causal necessity typically receives only oblique attention. Causal relations, laws of nature, counterfactual conditionals, or dispositions are usually the immediate subject(s) of interest. All of these, however, have a common feature. In some way, they involve the causal modality, some form of natural or physical necessity. In this paper, causal necessity is discussed with the purpose of determining whether a completely general empiricist theory can account for the causal in terms of the noncausal. Based on an examination of causal relations, laws of nature, counterfactual conditionals, and dispositions, it is argued that no reductive program devoid of essentialist commitments can account for all the phenomena that involve causal necessity. Hence, neo-Humean empiricism fails to provide a framework adequate for understanding causal necessity.

Shalkowski, Scott. 1994. "The Ontological Ground of the Alethic Modality", *The Philosophical Review* 103: 669-688.

This paper is concerned with the wholly metaphysical question of whether necessity and possibility rest on nonmodal foundations--whether the truth conditions for modal statements are, in the final analysis, nonmodal. It is argued that Lewis's modal realism is either arbitrary and stipulative or else it is circular. Even if there were Lewisian possible worlds, they could not provide the grounds for modality. D M Armstrong's combinatorial approach to possibility suffers from similar defects. Since more traditional reductions to cognitive or linguistic facts suffer similar fates, the conclusion that the alethic modality is primitive and incapable of reduction is offered.

Shalkowski, Scott. 1996. "Conventions, Cognitivism, and Necessity", *American Philosophical Quarterly* 33: 375-392.

The major question of this paper is "Is there a viable reduction of necessity in terms of linguistic phenomena"? Substantival accounts, standard conventionalism and latter-day modal noncognitivism are examined. It is argued that all reductive approaches are deficient because they confront a fatal dilemma: either the reductive base is modally unconstrained and the proposal is arbitrary or the reductive base is modally constrained and the proposal is circular. Common mistakes about necessity, which make linguistic theories attractive and which hinder progress in the epistemology of modality, are noted and discussed.

Shalkowski, Scott. 2004. "Logic and Absolute Necessity", *Journal of Philosophy* 101: 55-82.

Shapiro, Stewart 1993. "Modality and Ontology", *Mind* 102: 455-481.

This paper concerns the relationship between ideology and ontology. The starting point is a series of recent programs whose strategy is to reduce ontology in mathematics by invoking some ideology, typically a modal operator. In each case, there are straightforward, often trivial, translations from the set-theoretic language of the realist to the proposed language with added ideology, and vice-versa. The contention is that, because of these translations, neither system can claim a major epistemological advantage over the other. The prima facie intractability of knowledge of abstract objects indicates an intractability concerning knowledge of the "new" notions. The prevailing criterion of ontological commitment, due to Quine, is that the ontology of a theory is the range of its bound variables; but recall that Quine insists on a fixed, and very austere ideology. It is proposed here that, when this constraint is relaxed, the Quinean criterion is flawed, and an alternative, in structuralist terms, is developed.

Shaw, J. L. 1980. "Some Reflections of Kripke", *Logique et Analyse* 23: 345-363.

The aim of this paper is to discuss the view of Kripke as formulated in his articles on 'Naming and necessity' and 'Identity and necessity'. In this context Kripke's criticism of philosophers like Frege, Russell, Wittgenstein, Searle, and Strawson have been discussed. It is also claimed that Kripke's criticism of the sense theory of Frege

is wide of the mark. Following Frege one might develop three different types of sense of a designator. Kripke's distinction between proper names and descriptions in modal contexts has also been dismissed. Kripke's causal chain theory of proper names cannot be considered as a substitute for Frege's sense theory of proper names. Kripke's method of providing a contingent "a priori" truth is not justifiable. As regards the meaning of "a posteriori" truths it is claimed that some of his examples do not represent this type of truth, and some other examples can be substantiated by extending Russell's thesis on this topic. Finally it has been pointed out that the concept of necessity can be distinguished from the concept of universality.

Shoemaker, Sydney. 1998. "Causal and Metaphysical Necessity", *Pacific Philosophical Quarterly* 79: 59-77.

Shope, Robert K. 1988. "Powers, Causation, and Modality", *Erkenntnis* 28: 321-362.

A complex theory concerning powers, natures, and causal necessity has emerged from the writing of P. H. Hare, E. H. Madden, and R. Harre. In the course of rebutting objections that other critics have raised to the "power account of causation", I correct three of its genuine difficulties: its attempt to analyze power attributions in terms of conditional statements; its characterization of the relation between something's powers and its nature; and its doctrines concerning conceptual necessity. The resulting interpretation of causal modalities is then subsumed under a more general "power account of modality", related at a number of points to considerations concerning powers, and further illustrating their philosophical importance.

Sidelle, Alan. 1989. *Necessity, Essence, and Individuation: a Defense of Conventionalism*. (Ithaca: Cornell University Press).

Recent philosophical work has been deeply influenced by a realistic understanding of modality, essence and individuation suggested by the discovery of necessary "a posteriori" truths. The present book argues that the necessary "a posteriori" and associated phenomena can be given a conventionalist account, and that on epistemological, metaphysical and semantic grounds, this account is superior to that of the realist. The legitimacy and need for appeals to analyticity is defended, and a semantic approach is sketched which, while acknowledging the important insights of causal theorists of reference, incorporates the semantic structure needed to ground modality and individuation. Overall, the book is a contemporary defense of empiricist metaphysics and semantics.

Sider, Theodore. 2002. "The Ersatz Pluriverse", *Journal of Philosophy* 99: 279-315.

REDUCTIONISTS ABOUT POSSIBILIA — POSSIBLE WORLDS AND POSSIBLE INDIVIDUALS — HAVE TROUBLE REDUCING TALK OF ALIEN POSSIBLE ENTITIES, I.E., ENTITIES THAT ARE NOT MERELY REARRANGEMENTS OF ACTUAL ENTITIES. THIS PAPER PROPOSES A SOLUTION TO THIS PROBLEM.

Sider, Theodore. 2003. "Reductive Theories of Modality", in Michael J. Loux and Dean W. Zimmerman, eds., *The Oxford Handbook of Metaphysics* (Oxford: Oxford University Press), pp. 180-208.

SURVEYS STRATEGIES FOR REDUCING POSSIBILITY AND NECESSITY, INCLUDING: (LEWIS'S) MODAL REALISM, COMBINATORIALISM, ABSTRACTIONISM ABOUT POSSIBLE WORLDS, MODAL FICTIONALISM, AND CONVENTIONALISM.

Sider, Theodore. 2005. "Another Look at Armstrong's Combinatorialism", *Noûs* 39: 680-696

Simons, Peter. "Lewy on C. I. Lewis And Entailment", *Analysis* 38: 126-129.

In "Meaning and Modality" Lewy claims the only ground for rejecting disjunctive syllogism as acceptable for entailment is rejection of bivalence. Examining Lewis's 'proofs' of the paradoxes of strict implication he suggests the proof of 'if a then (b or not-b)' suppresses a premiss, restoration of which blocks the paradox, whereas the proof of 'if (a and not-a) then b' cannot be so blocked. But the paradoxes are dual, so he should have treated them dually by restoring a suppressed disjunct in the consequent of the second. When this is done, the second paradox is blocked and disjunctive syllogism fares no better than the principle Lewy discarded.

Skorupski, John. 1980. "Possibility", *Proceedings of the Aristotelian Society*, supplementary volume 54: 89-104.

Skyrms, Brian. 1978. "An Immaculate Conception of Modality", *Journal of Philosophy* 75: 368-387.

A natural metalinguistic interpretation is developed for both S-4 and S-5. It is shown that purported proofs that this cannot be done prove something less. The semantics of Kripke can be reinterpreted according to the lights of Quine, Carnap, and Lewis. <Reply to Montague>

Slovan, Aaron. 1968. "Explaining Logical Necessity", *Proceedings of the Aristotelian Society* 69: 33-50.

Smart, J. J. C. 1959. "Incompatible Colors", *Philosophical Studies* 10: 39-42.

DEALS WITH CONVENTION AND MODALITY.

Soames, Scott. 2003a. *Philosophical Analysis in the Twentieth Century: Volume 1, The Dawn of Analysis*. (Princeton: Princeton University Press).

Soames, Scott. 2003b. *Philosophical Analysis in the Twentieth Century: Volume 2, The Age of Meaning*. (Princeton: Princeton University Press).

Stalnaker, Robert. 1976. "Possible Worlds", *Noûs* 10: 65-75. Reprinted in Loux 1979.

CLASSIC PAPER DEFENDING A BRAND OF ABSTRACTIONISM ABOUT POSSIBLE WORLDS.

Stalnaker, Robert. 1978. "Assertion", *Syntax and Semantics* 9: ?? . Reprinted in Robert Stalnaker, *Context and Content* (Oxford: Oxford University Press, 1999), 78-95.

Stalnaker, Robert. 1986. "Counterparts and Identity", in French, Uehling, and Wettstein, eds. *Midwest Studies in Philosophy, XI* (Minneapolis: University of Minnesota): 121-140.

Stenius, Erik. 1960. *Wittgenstein's "Tractatus": a Critical Exposition of Its Main Lines of Thought*. (Oxford: Blackwell).

The author describes himself as "trying to fill in the spaces of meaning left out between (Wittgenstein's) aphorisms."

Sullivan, Peter M. 1998. "The 'Modal Extension Principle': A Question About Peacocke's Approach to Modality", *Mind* 107: 653-660.

Peacocke has proposed a principles-based' elucidation of modal notions, according to which implicitly known principles reflecting the identities of thing, properties, and concepts constrain which among the categorially suitable assignments to an expression or concept are admissible', that is, reflect genuine possibilities. Central among those constraining principles is his Modal Extension Principle, which restricts admissible assignments to a concept (or expression) to those that, in some sense, are true to its being the concept it is (or meaning what it does). The paper argues, first, that this principle, as formulated by Peacocke, allows only the actual state of affairs to be possible; and secondly, that revision of the principle to avoid this consequence introduces a circularity to Peacocke's account.

Tannsjo,-Torbjorn. 1991. "Morality and Modality", *Philosophical Papers* 20: 139-153.

Various different theories about possible worlds are examined and rejected. It is conjectured that, when doing moral philosophy, we ought to give up the ambition to "reduce" modal notions to talk about possible worlds. Instead we ought to adopt a realistic stance to modal notions. When we say to a person that he can act otherwise than the way he actually does, we ascribe a theoretical property to him. There is a wide variety of possible evidence for this statement, but no item in particular is decisive. Ascriptions of capability are underdetermined by the evidence at hand.

Tennant, Neil. 1987. "Conventional Necessity and the Contingency of Convention", *Dialectica* 41: 79-95.

Abstract: I defend a conventionalist view of logical and (some) mathematical truths against the criticisms of Quine and Stroud. Conventionalism is best formulated by appealing to sense-conferring rules governing important logical and mathematical expressions. Conventional necessity can be understood as arising from these rules in a way that is immune to Quine's and Stroud's criticisms of the earlier formulation of conventionalism, in which stress was incorrectly laid on axiomatic systems of logic.

REPLY TO QUINE'S "TRUTH BY CONVENTION" THAT MAKES USE OF NATURAL DEDUCTION STUFF.

Thomas, Holly. 1996. "Combinatorialism and Primitive Modality", *Philosophical Studies* 83: 231-252.

Thomas, Holly. 1995. "The Principle of Recombination and the Principle of Distinctness: A Puzzle for Armstrong's Theory of Modality", *Australasian Journal of Philosophy* 73: 444-457.

Thomas, Holly. 1993. "Modal Realism and Inductive Scepticism", *Noûs* 27: 331-354.

Thomason, Richmond and Stalnaker, Robert. 1968. "Modality And Reference", *Noûs* 2: 359-372.

This paper deals with a problem concerning the behavior of singular terms in modal and intensional contexts. To deal with this problem we introduce an abstraction operator into first-order modal logic and present informally its semantic interpretation. This allows us to give a formal account of the difference between what have been called the attributive and the referential uses of definite descriptions, and to give a general explanation of the distinction between "de dicto" and "de re" modality. After introducing and explaining our semantic apparatus we apply it to some traditional puzzles arising with epistemic, deontic and tense logic, and counterfactual conditionals.

Thomason, Richmond H. 1980. "A Note on Syntactical Treatments of Modality", *Synthese* 44: 391-396.

Thornton, M. T. 1969. "Rundle on Referential Opacity", *Analysis* 29: 125-128.

In this article I discuss Rundle's treatment (in 'analytical philosophy', second series, ed. R.j. Butler, Oxford, 1965) of Quine's views on referential opacity. I show that his two key arguments have the consequence that contingent identities collapse into necessary identities. Rundle's thesis is that necessity is a trait of what is referred to, while Quine holds that it depends on the manner of referring. I argue, with Rundle, that Quine's treatment of arithmetical propositions is question-begging, and, with Quine, that Rundle's treatment of other necessary statements is defective.

Urmson, J. O. 1947. "Are Necessary Truths True by Convention?", *Proceedings of the Aristotelian Society*, supplementary volume 21: 104-117.

COMMENTS ON KARL BRITTON'S PAPER BY THE SAME NAME.

Van Fraassen, Bas. 1969. "Meaning Relations and Modalities", *Noûs* 3: 155-167.

This paper aims to present a certain philosophical perspective on the basic concepts of modal logic. It is argued that the view that 'necessarily, a' is true exactly if 'a' is true due to meaning relations among its terms ("ex vi terminorum") is adequate only in a special case. It is clearly not adequate for physical or tense modality, nor for alethic modality understood in a strict sense. We argue also however that there is an intimate relation between truth conditions for modal statements and truth or falsity ex vi terminorum. Since our approach is explicitly ametaphysical, it has implications for the current debate about essentialism in modal logic. We argue that this debate has left us, so far, with the dilemma of accepting essentialism or rejecting the completeness proofs for certain standard modal logics. But this is, in our view, a false dilemma, and we argue that on our interpretation no statement formulable in the language of modal logic commits us to essentialism.

Van Fraassen, Bas. 1977. "The Only Necessity Is Verbal Necessity", *Journal of Philosophy* 74: 71-85.

van Inwagen, Peter. 1986. "Two Concepts of Possible Worlds", in P. French, T. Uehling, and H. Wettstein, eds., *Midwest Studies in Philosophy, XI* (Minneapolis: University of Minnesota Press), pp. 185-213.

Van Inwagen, Peter. 1990. "Indexicality And Actuality", *Philosophical Review* 89: 403-426.

David Lewis maintains that "actual," as this term is used in philosophical discussions of modality, is an indexical term. I discuss several possible interpretations of this thesis and show that each has unacceptable consequences. On one interpretation, for example, it has the consequence that "all" terms are indexical. On another, it entails the collapse of all modal distinctions, I conclude that on no known interpretation is Lewis's thesis a plausible one.

von-Wright, Georg. 1984. *Truth, Knowledge, and Modality: Philosophical Papers*. (Oxford: Blackwell).

A major part of the material in this volume has not been published before. Two essays on truth discuss logical systems which allow truth-value gaps and truth-value overlaps. Frege's treatment is given to Aristotle's problem of the sea-battle and to his dictum that everything which is necessary and to the medieval problem of whether God's omniscience is compatible with human freedom of action. Three essays on modality exploit a distinction between a synchronic and a diachronic conception of possibility and necessity.

Weiss, Paul. 1962. "Twenty-two Reasons for Continuing as Before", *Philosophical Studies* 13: 65-67.

Weiss, Paul. 1955. "The Paradox of Necessary Truth", *Philosophical Studies* 6: 31-32.

Weiss, Paul. 1956. "The Paradox of Necessary Truth, Once More", *Philosophical Studies* 7: 88.

Wertheimer, Roger. 1972. *The Significance of Sense: Meaning, Modality and Morality*. (Ithaca: Cornell University Press).

The subtitle suggests that this is a study in ethical theory, but the author's aim is to consider certain linguistic questions about modal terms. His first chapter examines philosophic uses of 'good', 'right' and 'ought'--and the following four chapters study univocity as applied to each of these terms. He is insistent that there is no distinctive moral usage for good and right. Yet he concludes that "ethics is the most important study" and further that the moral philosopher "will learn no more about it [morality] by studying the word 'right' than he would by studying the word 'true': nothing."

White, Alan Richard. 1975. *Modal Thinking*. (Oxford: Blackwell).

The author selects as the basic modal notions those expressed by the modal auxiliaries 'can', 'may', 'must', 'ought', and 'need', together with such related notions as those of possibility, ability, power, probability, certainty, necessity and obligation.

Williamson, Timothy. 1998. "Bare Possibilia", *Erkenntnis* 48: 257-273.

Williamson, Timothy. 2002a. "Necessary Existents", *Philosophy* 51 (Supp.): 233-251.

Williamson, Timothy. 2002b. "Peacocke's Theory of Modality", *Philosophy and Phenomenological Research* 64: 649-654.
PART OF A SYMPOSIUM ON PEACOCKE 1999.

Wilson, N. L. 1961. "Reply to Professor Rescher's "Identity, Substitution, And Modality", *Review of Metaphysics* 14: 714-720.

In his 1960 review article, "identity, substitution, and modality," nicholas rescher wrote that the primary aim of n l wilson's book, "the concept of language" (toronto, 1959), was an attack on the logic of modality on the ground of its clash with leibniz's rule. He further professed to find a lack of fundamental or thematic unity in the book. The author responds to these and other charges by tracing the logical development of his chapters, discussing his notion of propositions, and clarifying his views, in opposition to rescher's, on modal logic.

Wilson, N. L. 1965. "Modality and Identity: a Defense", *Journal of Philosophy* 62: 471-476.

Wittgenstein, Ludwig. 1921. *Tractatus Logico-Philosophicus*. Paperback English translation by D. F. Pears and B. F. McGuinness. (London: Routledge & Kegan Paul, 1974).

Wright, Crispin. 1984. "Inventing Logical Necessity", in J. Butterfield, ed., *Language, Mind and Logic* (Cambridge: Cambridge University Press).

Wright, Crispin. 2002. "On Knowing What Is Necessary: Three Limitations of Peacocke's Account", *Philosophy and Phenomenological Research* 64: 655-662.

PART OF A SYMPOSIUM ON PEACOCKE 1999.

Wolterstorff, Nicholas. 1987. "Are Concept-users World-makers" in James Tomberlin, ed., *Philosophical Perspectives* (Atascadero, CA: Ridgeview), 233-267.

Yablo, Stephen. 1992. "Review of Alan Sidelle, *Necessity, Essence and Individuation*". *Philosophical Review* **101**: 878-881.