

# Selected and Annotated Bibliography of Richard Sylvan [*born* Richard Routley]

## Index of the Section: "The Rediscovery of Ontology in Contemporary Thought"

- [Table of Formal and Descriptivists Ontologists](#) (PDF - from Bernard Bolzano to present time)
- [Ontologists of the 19th and 20th Centuries](#) (a selection of critical judgments about some of the greatest philosophers of the recent past)
- [Living Ontologists](#) (a list of authors with an interest in ontology, with synthetic Bibliographies)

## Richard Sylvan [*born* Richard Routley] on Nonexistent Objects

### SELECTED LIST OF PUBLICATIONS

*This bibliography contains all the books authored or edited by Richard Sylvan and a selection of articles.*

N. B. *In 1983 Richard Routley changed his name in Richard Sylvan and Val Routley changed his name in Val Plumwood.*

1. "Mr. Rescher's reformulation of the ontological proof," *Australasian Journal of Philosophy* 38: 246-252 (1960).
2. "Contingency and non-contingency bases for normal modal logics," *Logique et Analyse* 9: 318-328 (1966).
3. "On a significance theory," *Australasian Journal of Philosophy* 44: 172-209 (1966).
4. "On the identity of sensations and physiological occurrences," *American Philosophical Quarterly* 3: 87-110 (1966).

Many objections to the hypothesis that sensations are physiological occurrences are based upon a theory of identity which would exclude a contingent identity holding between sensations as reported in ordinary language and sensations as described in scientific discourse. The main task of this paper is to sketch a theory of identity adequate to cope with the truth of such identities and their peculiar features. Two conditions must be satisfied by true theoretical identities. First, items identified should share all "extensional" properties which are "such that they are significant of both". These items do not have to be of the same logical type or category. Second, it is required that a theory about one of the items of a theoretical identity should "explain" features of the other item. Because the identity hypothesis, thus interpreted, is empirically equivalent to and compatible with various apparently rival hypotheses, such as the double aspect and causal theories, a synthesis of these hypotheses is affected.

5. "Some things do not exist," *Notre Dame Journal of Formal Logic* 7: 251-276 (1966).  
 "Several logics without existence assumptions are studied. First the meaning and semantics of the predicate 'exists' are discussed; then a basic logic with possibility quantifiers is designed in which the elementary logic of 'exists' is formulated. Free logic is mapped into the basic logic and semantics are provided for both. Extensions of the basic logic to admit impossible items are studied; and the cases of null and empty domains are distinguished and studied. With the introduction of the identity some implications are accomplished, and theories of Hintikka and of Leblanc-Hailperin are shown to be encompassed as special cases. A new theory of descriptions, with advantages over prevailing

theories, is applied to several problems. Finally Quine's criterion of ontological commitment is critically examined."

6. "Use, mention and quotation," *Australasian Journal of Philosophy* 44: 1-49 (1966).  
"It is shown that standard accounts of types, tokens and quotations are inadequate in many respects. An alternative account is developed which allows for much finer distinctions to be made: in particular, for the distinction between syntactic and semantic mentioning. The discussion is extended to the quotation of expressions containing variables and a quotation function is introduced for use in such contexts. It is suggested how the function might be used in an analysis of Godel's incompleteness proof for arithmetic."
7. "On systems containing Aristotle's thesis," *The Journal of Symbolic Logic* 33: 82-96 (1968).
8. "A fallacy of modality," *Nos* 3: 129-153 (1969).  
"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 criticize 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."
9. "A simple natural deduction system," *Logique et Analyse* 12: 129-152 (1969).  
"Natural deduction system 'ND' formalizes both ontologically neutral quantification logic and the logic of the choice operator 'ANY'. Addition of the choice operator to quantification logic - though it enriches quantification logic and facilitates the formulation of a very simple natural deduction system which avoids the common difficulties of natural deduction systems - yields, it is shown, only a conservative extension of the usual formalism of quantification logic. The syntax and semantics of 'ND' and related systems are presented in detail, proof techniques in ND' are illustrated, and the completeness of 'ND' is established"
10. "Categories. Expressions or things?," *Theoria* 35: 215-238 (1969).  
"Rival views on the composition of categories hold that categories are categories of things, that they are categories of expressions, or that they are both simultaneously. In view of the significance paradoxes-analogues of the modal paradoxes - here introduced, all these positions must be rejected, and two different sorts of meaninglessness distinguished. This distinction leads to the formulation of two distinct category theories, one apparently concerned with things, the other with descriptions. A case is made out for inclusive categories and against exclusive categories. Systematic ambiguity is attacked and shown to be tantamount to exclusiveness of categories. To allow for inclusive categories the usual notion of 'in the same category as' must be abandoned and replaced by a relative notion, except for certain sorts of categories - minimal categories. A definition of 'in the same category as' is proposed for minimal categories; and some aspects of Ryle's theory and Sommers's theory are examined in the light of these results."
11. "Existence and identity in quantified modal logics," *Notre Dame Journal of Formal Logic* 10: 113-149 (1969).  
"A way of overcoming objections to the development of a combined quantification and modal logic based on S5, and more generally objections to quantified intensional logics, is elaborated. problematic theses are appropriately qualified by basing the theory on an existence-neutral logic, with 'exists' as a primitive predicate. Problems of identity are resolved through a distinction between extensional and strict identity. Rival resolutions of the modal paradoxes are criticized, and Quine's objections to quantifying into modal contexts are shown to be unwarranted. A semantical analysis of systems used is provided, and some presuppositions of this analysis discussed. S5 is defended as providing the correct account of logical necessity. Kneale's and on Wright's attempts to eliminate

problematic 'de dicto' modalities are criticized."

12. "The need for nonsense," *Australasian Journal of Philosophy* 47: 367-383 (1969).  
 "This paper is primarily a reply to Lambert's criticism of significance theory, Lambert taking the brief for the no-type position that non-significance (nonsense) is not needed as a further assertion value alongside truth and falsity. Lambert's points of criticism are answered, and an attack is made on the consistency and coherence of some specific developments and varieties of the no-type position, such as those of Drange, Prior and Quine. In the course of this some general points emerge about the difficulty of maintaining the no-type position once some attempt is made to go beyond the superficial plausibility of the position to a detailed development."
13. "Non-existence does not exist," *Notre Dame Journal of Formal Logic* 11: 289-320 (1970).  
 "The main topics considered are criteria for the identity of individuals, and criteria for the existence of properties and of propositions. Other topics treated incidentally include: an extended sentential logic designed to take care of certain semantical paradoxes and truth-value gaps by allowing for statement-incapable (non-truth valued) sentences; axiomatisations of second order quantified modal logics and their various commitments; the identity of propositions and of properties; and certain problems concerning the existence of relations. The theory of identity extends to second-order of the theory of contingent and strict identities. Some interpretational difficulties for the logical theory are sketched. a detailed but inconclusive assessment, both logical and philosophical, is made of rival criteria for the existence of properties."
14. "Conventionalist and contingency-oriented modal logics," *Notre Dame Journal of Formal Logic* 12: 131-152 (1971).  
 "We distinguish radical conventionalism according to which all assertions of modalities are contingent - a pervasive position in British empiricism - from other conventionalist positions. we examine critically defenses of radical conventionalism by Hume, Bentham and Mackie, and argue that they do not stand up. Finally we formalize, at the sentential level, a variety of contingency-oriented and conventionalist systems, show that radical conventionalism is inconsistent with all Lewis modal systems, prove the distinctness of our systems, and through a translation theorem establish decidability of various systems."
15. "Domainless semantics for free, quantification and significance logics," *Logique et Analyse* 14: 603-626 (1971).  
 "Domainless (or truth-valued) semantics are developed in detail and their many advantages emphasized; they are defended against various objections as to their intelligibility and their adequacy; and their logical adequacy is established in the cases of quantification and free quantification logics, both with and without identity, and of second-order significance logic. The semantics are applied, after distilling domains, to establish Skolem-Lowenheim theorems, and also to prove translation theorems connecting free logic (with identity) with quantification logic (with identity)."
16. "A semantical analysis of implicational system *I* and of the first degree of entailment," *Mathematische Annalen* 196: 58-84 (1972).
17. "The semantics of first degree entailment," *Nos* 6: 335-358 (1972).  
 "We present a semantics of the relevant implication system FD (the first degree of E), which differs from modal semantics in introducing inconsistent and tautologically incomplete situations, as well as the usual 'worlds'. We argue on the basis of the semantics that FD is superior to the first degree of strict implication (SFD) as an analysis of entailment, and unlike SFD satisfies the important requirements for valid argument that a entails b iff a states a logically sufficient condition for b, or, equivalently, that b can be deduced from a without suppression. The semantics also shows why disjunctive syllogism is not a valid argument viz. that it permits the illegitimate suppression of tautologies. FD unlike SFD associates harmoniously with the notions of relative possibility, inclusion of content, and propositional identity, and the distortion in the behavior of non-contingent propositions which occurs when these notions are defined over worlds is eliminated. Finally FD preserves the containment property traditionally ascribed to valid argument."
18. "Classical relevant logics I," *Studia Logica* 32: 51-68 (1973).
19. "Classical relevant logics II," *Studia Logica* 33: 183-194 (1973).
20. "Don't care was made to care," *Australasian Journal of Philosophy* 51: 211-225 (1973).

"The authors criticize some arguments which have recently been put forward against three-valued significance logic. There are six sections dealing with R. J. Haack's 'No need for nonsense', 'Australasian Journal of Philosophy,' volume 49 (1971), pp. 71-77 and there is one section dealing with E. Erwin's 'The concept of meaninglessness,' Johns Hopkins (1970). The authors show that all of Haack's arguments against three-valued significance logic are fallacious. They also show that the central argument of Erwin's book, i.e., the argument establishing that the 'so-called meaningless statements' are false, is question-begging."

21. "Rehabilitating Meinong's theory of objects," *Revue Internationale de Philosophie* 27: 224-254 (1973).
22. "Ryle's 'reductio ad absurdum' argument," *Australasian Journal of Philosophy* 51: 125-138 (1973). "Ryle's 'reductio ad absurdum' principle, that if q follows from p and q is absurd then p is absurd, together with other principles to which Ryle is demonstrably committed leads to inconsistency. A similar argument shows that Hare's account of evaluativeness is, like Ryle's account of absurdity, inconsistent. Ryle's argument in 'The concept of mind' can however be repaired by replacing the 'reductio' argument (which confuses absurdity with impossibility) by a related correct argument. (The correct argument, while not a special philosophical argument, does lie however beyond the narrow confines of classical logic; it combines entailment and significance notions the amalgamated formal logic of which has yet to be worked out)."
23. *The fight for the forests: the takeover of Australian forests for pines, wood chips, and intensive forestry*. Canberra: Australian National University 1973.
24. *The logic of significance and context*. Edinburgh: Scottish Academic Press 1973. Contents of Volume 1 (the only published): Introduction 1; Part I: Context logic. 1. The semantic theory 21; 2. Elements of the sentential theory 44; 3. Elements of the predicate and quantification theory 120; Part II. The principles of significance. 4. Toward a logic of significance 219; 5. Sentential significance logics I: The matrix approach 256; 6. Sentential significance logics II: The axiomatic approach 368; 7. Intensional and quantified significance logics 431; Bibliography 637-641.

"In spite of the central role which the concept of significance has played in recent philosophy, very little has been done to produce a general theory in terms of which the various claims can be evaluated. Both Russell and Ryle go some way towards the development of particular significance theories which they then apply to the examination of philosophical theses, and Russell's theory of types is expressed partly in terms of formal criteria. But the two theories, though similar, are inconsistent with each other, and each is seriously incomplete. Both depend crucially on the acceptance of intuitive and unstated principles.

It is our purpose to develop a general formal theory of significance in terms of which significance claims, and arguments by means of which they are made, can be assessed. Thus we aim, eventually, to provide a logic, not previously developed, for much of modern philosophy.

This aim might be challenged in one of three ways. First, even though it is accepted that some sentences are nonsignificant, it might be thought that there is no need of a special logic to take account of them since the ordinary principles of classical two-valued logic can be applied to arguments in which they occur. Secondly, it might be said, given that there is a need for a special logic, the peculiar features of nonsignificant sentences make its development impossible. Thirdly, it has sometimes been suggested, nonsignificance can be wholly explained in terms of other well-understood concepts: in particular, it can either be identified with the ungrammatical, in which case nonsignificant sentences should be excluded from all arguments and the only logic which is necessary is the classical two-valued logic over significant sentences; or it can be identified with the necessarily false, and in this case significance claims and arguments can be handled within classical modal logic.

Consider the first objection. The point of and need for a general formal theory of significance can be justified on general grounds by appealing to the usual reasons for underpinning philosophical investigations by logical studies: namely the clarity and systematisation which result, and the fact that the philosophical theory can be tested for consistency and is generally more readily assessed and open to falsification. But it can also be justified on special grounds since, without it, the

assessment of particular significance theories, if not impossible, is at best intuitive. Unless general principles are formulated and justified, it remains obscure which critical arguments are valid within and against a particular theory. Thus, without some systematisation of significance principles, many philosophical arguments, such as those of Ryle and Strawson on the philosophy of mind, are impossible to assess.

As one example of the need to make explicit the principles which are assumed, and the need to evaluate them, consider Russell's assumption, which is nowhere justified, that the paradox argument evaporates and the conclusion no longer follows once it has been shown that the premisses are meaningless. This amounts to saying, in general, that a nonsignificant sentence has no implications. But if this is so, then Ryle's *reductio ad absurdum* technique, and Wittgenstein's declared aim, seem to be illogical. For here, the intention is to show that a given sentence is nonsignificant because it has implications which are nonsignificant. But if it is indeed nonsignificant, then it was so before the actual implications were drawn, and in terms of Russell's principle it cannot have these implications because it has none at all.

In order to resolve problems such as this, it is necessary to construct associated significance logics for particular theories of significance and to ask whether there is an internal inconsistency in either theory, whether there are general principles incompatible with either or both, and whether there is a general theory which can consistently include both. It may be, for example, that the apparent incompatibility of Russell's principle and Ryle's is not real. This would be so if they were adopting different implication connectives; in this case, both principles could consistently appear in the same general theory.

None of these questions can be settled using only a classical two-valued logic, however, since what is in issue is just which relations hold between truth-valued sentences, on the one hand, and nonsignificant sentences, on the other. Similarly, it is inadmissible to evaluate positivist criteria of significance using principles of two-valued logic alone since, given that some sentences are nonsignificant, such a logic cannot hold generally. But the mere recognition that at least a three-valued logic is necessary is of itself inadequate. For unless the *relevant* three-valued logic is specified, the criteria are still not fully assessable." pp. 5-7

25. "A rival account of logical consequence," *Reports on Mathematical Logic*: 41-51 (1974).  
"The received metalinguistic explanation of logical consequence has serious shortcomings; in particular it is defective as an account of logical consequence for much the same reasons that its systemic analogue, strict implication, is defective as an explication of systemic entailment, most strikingly because of the well-known paradoxes admitted under the explication. It is shown however, that the received account may be improved upon -- in much the same way that the semantics of first degree strict implication is improved on by the corresponding semantics for entailment. The new account is not flawless, but the further faults of the metalinguistic account of logical consequence (whether improved or not) are largely faults that can be ascribed to the theory of levels of languages: they are not peculiar to logical consequence but equally infect metalinguistic theories of propositional notions such as truth, necessity, probability, intention, and possibility. Some of the restrictions and peculiarities that a levels theory enforces are discussed."
26. "Choice and descriptions in enriched intensional languages I," *Journal of Philosophical Logic* 3: 292-316 (1974).  
"It is suggested that Church's formulation of type theory, supplemented by Henkin's semantics, can be reinterpreted as a categorial grammar and as such provides a more satisfactory basis for a logic of natural language than standard quantification theory. However, it still requires extension in a number of directions to provide for nonsignificance, context-dependence and intensionality. The problem of intensionality is examined in more detail with particular reference to the role of descriptors. Various formal principles are proposed and an indication is given of the semantics."
27. "The role of inconsistent and incomplete theories in the logic of belief," *Communication and Cognition* 8: 185-235 (1975).
28. "Towards a general semantical theory of implication and conditionals (First part)," *Reports on Mathematical Logic* 19: 67-89 (1975).
29. "Universal semantics?," *Journal of Philosophical Logic* 4: 327-356 (1975).  
"It is shown that every logic in a (free) "L"-categorial language has a two-valued worlds semantics,

and hence that every "L"-categorical language has such a semantics. Among the corollaries is Carnap's thesis of extensionality. The obstacles in the way of regarding the main result as establishing that every logic on every language (and hence every language) has a two-valued worlds semantics are discussed in detail, and various methods for removing these restrictions are investigated, notably the removal of constraints of the basic logic, the freeing of categories, the abolition of transformations, and allowing for context dependence."

30. "Algebraic semantics for S2 and necessitated extensions," *Notre Dame Journal of Formal Logic* 17: 44-58 (1976).
31. "Dialectical logic, classical logic, and the consistency of the world," *Studies in East European Thought* 16: 1-25 (1976).
32. "The durability of impossible objects," *Inquiry* 19: 247-253 (1976).  
 "Meinong's theory of impossible objects is defended against a number of objections, in particular against Karel Lambert's argument (see *Impossible objects*, *Inquiry*, volume 17, 1974, pages 303-314) that no objects are impossible."
33. "The semantical metamorphosis of metaphysics," *Australasian Journal of Philosophy* 54: 187-205 (1976).  
 "The paper reports on the impact of recent semantical investigations on what wisdom has called 'the metamorphosis of metaphysics', and indicates how these investigations can round out wisdom's new approach to philosophy and reconcile it with Carnap's later philosophy. The synthesis is achieved by a crucial shift from syntactical analysis (through translations, logical constructions, etc.) to semantical analysis (leading features of which are sketched). The main theses argued are that "many" philosophically influential "reductive positions", though false when narrowly, ordinarily construed, "furnish, when widely construed", "semantical analyses whose correctness can be demonstratively established". The "wide reductions", taken as semantical analyses, "are analytically true", "and" thus "reconcilable with transcendental positions" (which are separated from wisdom's realist positions by their ontological neutrality). The theses are elucidated and supported by way of the following examples: those of extensional reduction programs, denotative theories of meaning, verificationism and the empiricist reduction formula, cause as constant conjunction, reality as appearance and appearance through reality."
34. "Meaning as semantical superstructure: a universal theory of meaning, truth and denotation," *Philosophica (Belgium)* 19: 33-67 (1977).  
 "Several problems for theories of meaning and denotation, and in particular for universal theories, are outlined. Previous approaches to these problems are criticized in detail, and new semantical solutions are proposed through a two-tier theory built on an already constructed universal semantics. The problems tackled include those of providing model-independent definitions of truth, denotation, logical necessity, entailment, synonymy and content, of vindicating a denotative theory of meaning as correct but seriously incomplete, and of reinstating the program of universal semantics. The main characterizations of semantical notions given diverge from the intensional generalizations, also given, of the orthodox Kemeny-Tarski definitions of such notions as truth and analyticity: for the latter characterizations incorporate an analytic form of conventionalism to the effect that every theory is correct according to its own lights, whereas what is true according to a theory may not be true. Finally a start is made on the semantical investigation of dynamic languages and logics, of systems which change in a controlled way over time."
35. "Towards a general semantical theory of implication and conditionals. II: Improved negation theory and propositional identity," *Reports on Mathematical Logic* 21: 47-62 (1977).
36. "Alternative semantics for quantified first degree relevant logic," *Studia Logica* 38: 211-231 (1979).  
 "A system "FDQ" of first degree entailment with quantification, extending classical quantification logic "Q" by an entailment connective, is axiomatised, and the choice of axioms defended and also, from another viewpoint, criticized. The system proves to be the equivalent to the first degree part of the quantified entailment system "EQ" studied by Anderson and Belnap; accordingly the semantics furnished are alternative to those provided for the first degree of "EQ" by Belnap. A worlds semantics for "FDQ" is presented, and the soundness and completeness of "FDQ" proved, the main work of the paper going into the proof of completeness. The adequacy result is applied to

yield, as well as the usual corollaries, weak relevance of "FDQ" and the fact that "FDQ" is the common first degree of a wide variety of (constant domain) quantified relevant logics. Finally much unfinished business at the first degree is discussed."

37. "Dialectical logic, semantics and metamathematics," *Erkenntnis* 14: 301-331 (1979).  
 "Dialectical logic opens the way both to novel theories and to the reinstatement of older discarded, though often intuitive, theories, in a "wide" range of areas and disciplines. There is a major impact, for example, on argumentation, reasoning and standards of rationality, since consistency is not (any longer) a prerequisite of rationality. More detailed illustrations focus on set and attribute theories -- parts of mathematics and physics, and on the formalization of natural languages. finally, a fairly detailed critique of orthodox metamathematics break down beyond an assumed classical (or intuitionistic) setting. Dialectical theory is not so limited."
38. "Repairing proofs of Arrow's general impossibility theorem and enlarging the scope of the theorem," *Notre Dame Journal of Formal Logic* 20: 879-890 (1979).
39. "Some bad arguments for and against conventionalism," *International Logic Review* 10: 84-90 (1979).
40. "The (logical) importance of not existing," *Dialogue* 18: 129-165 (1979).
41. "The theory of objects as commonsense," *Grazer Philosophische Studien* 9: 1-22 (1979).  
 "It is beginning to be appreciated that the Meinong of the mainstream philosophical literature is a mythological figure, that Meinong's philosophy has in fact been presented in an unfair fashion (perhaps even by largely sympathetic expositors such as Findlay [2]), and that the theory of objects in particular has been either widely misunderstood or else deliberately misrepresented. What has not been much appreciated is that Meinong's theory of objects represents an important alternative to standard (Russellian) logical theory.' Whereas the entrenched theory is both reductionist and logico-empiricist in spirit, the alternative is nonreductionist, antiverificationist, and commonsense. Since the theory of objects has often - there are, however, important exceptions - been taken to be the very antithesis of commonsense, there is some explaining to be done. The problems are compounded by the fact that it is not at all easy to say what commonsense amounts to, and even more difficult to show that a philosophical theory is a commonsense one." p. 1
42. "Towards a logic of relative identity," *Logique et Analyse* 22: 65-83 (1979).
43. *Environmental philosophy*. Edited by Routley Richard, Mannison D.S., and McRobbie M.A. Canberra: Australian National University 1980.
44. *Exploring Meinong's jungle and beyond. An investigation of noneism and the theory of items*. Canberra: Research School of Social Sciences, Australian National University 1980.  
 Contents: Preface and acknowledgements I-VIII;  
 Part I. Older essays revised.  
 1. Exploring Meinong's jungle and beyond. I Items and descriptions 1; 2. Exploring Meinong's jungle and beyond. Existence and identity when time change 361;  
 Part II. Newer essays.  
 3. On what there isn't 411; 4. Further objections to the theory of items disarmed 427; 5. Three Meinongs 489; 6. The theory of objects as commonsense 519; 7. The problems of fiction and fictions 537 8. The importance of not existing 607; 9. The meaning of existence 697; 10. The importance of nonexistent objects and of intensionality in mathematics and the theoretical sciences 769; 11. Rudiments of noneist philosophies of mathematics and science 791; 12. How the theory elaborated differs from other theories of objects in its these and objectives 833;  
 Preface to the Appendix 892;  
 Appendix I: Ultralogic as universal? 893;  
 Bibliography: Works referred to in the text 963; Supplementary bibliography: On Meinong and the Theory of Objects 983;  
 Index 991-1035.

"A fundamental error is seldom expelled from philosophy by a single victory. It retreats slowly, defends every inch of ground, and often, after it has been driven from the open country, retains a footing in some remote fastness (Mill *A system of logic*, pp. 73-4).

The fundamental philosophical error, common to empiricism and idealism and materialism and

incorporated in orthodox (classical) logic, is the Reference Theory and its elaborations. It is this theory (according to which truth and meaning are functions just of reference), and its damaging consequences, such as the Theory of Ideas (as Reid explained it), that noneism - in effect, the theory of objects - aims to combat and supplant. But like Wittgenstein (in *Philosophical Investigations*, and unlike Mill, noneists expect no victories against such a pervasive and treacherous enemy as the Reference Theory. Though noneists take it for granted that 'Truth is on their side', and reason too, the evidence that 'Truth and reason will out' is exceedingly disappointing. Nor do they expect the enemy to vanish, even from open country: fundamental error will no doubt persist, to the detriment of philosophy, and of every theoretical and practical subject it touches. For there is great resistance to changing the framework (to amending the paradigm); so there is an attempt to handle everything within the prevailing philosophical frame. There is no need, it is thought, to change the framework, all problems can eventually be solved within the basic referential scheme - at worst by some concessions (1) which absorb some nonreferential fragments, and thereby decrease both the level of dissatisfaction with the going frame, and the prospects for perception of its real character.

The faith that the Reference Theory (and its forms such as extensionalism and empiricism) will find a way out of its impasses, a way to deal adequately with nonexistence and intensionality, is like the faith that technology will find *a way* to deal with social problems, especially with all the problems it creates (the faith is deeply embedded in the Technocratic Ideology). As with the Technocratic Ideology so with the Reference Theory, the Great Breakthrough which will resolve these problems, (patently) not soluble within the technological or referential framework, is always just around the corner, no matter how discouraging the record of failures in the past. The problems, difficulties, and failings of the Theory are not recognised as reasons for rejecting it and adopting a different theoretical-and ideological framework, but are presented as 'challenges', which further work and technology will doubtless find a way to resolve. And as with Technocracy the 'solution' of a problem in one area is liable to create a rash of new problems in other areas (e.g. increasing energy supply at the expense of increased pollution, forest destruction, etc.), which can, however, for a time at least, be conveniently overlooked in the presentation of the 'solution' as yet another triumph for the theory and its ideology. That is, the procedure is to trade in one problem for another, and hope that nobody notices.

The basic failings of the Reference Theory are at the logical level. The Reference Theory yields classical logic, and directly only classical

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The basic failings of the Reference Theory at the logical level.

The Reference Theory yields classical logic, and directly only classical logic: in this sense classical logic is the logic of the Reference Theory. An important group of elaborations of the Reference Theory correspond in the same way to logics in the Fregean mode. Accordingly with the breakdown of the Reference Theory and its elaborations all these logics fail; and so, as with the breakdown of modern energy supplies, substantial adjustment and reconstruction is required. In fact no less than the effects of a logical revolution are called for (see *Relevant logics and their rivals*), though the aim of these essays is to achieve such results in a more evolutionary way, to take advantage of the classical superstructure, to build the new logic in part on what there is. The logical areas where change and improved treatment are especially, and desperately, needed are these:

nonexistence and impossibility;  
intensionality;  
conditionality, implication and deducibility;  
significance; and context.

It is on the first two overlapping areas, the very shabby treatment of which is a direct outcome of the Reference Theory, that the essays which follow concentrate. (The remaining areas - which are, as will become quite evident, far from independent - are treated, still in a preliminary way, in two companion volumes to this work, *Relevant logics and their rivals* and *The logic of significance and context*, and in other essays.) When the Reference Theory and its elaborations (such as Multiple Reference Theories) are abandoned the role of logic changes - its importance need not however

diminish."

(1) An example of theoretical cooption is the (somewhat grudging) toleration of lower grades of modality and intensionality - which can however be referentially accounted for, more or less.

45. Problems, solutions semantics quantified relevant logics. In *Mathematical logic in Latin America*. Edited by Arruda Ayda Ignez, da Costa Newton C.A., and da Chaqui Rolando Basim. Amsterdam: North-Holland 1980. pp. 305-340  
Proceedings of the IV Latin American Symposium on Mathematical Logic held in Santiago, December 1978
46. "The choice of logical foundations," *Studia Logica* 39: 77-98 (1980).
47. Necessary limits to knowledge: unknowable truths. In *Essays in scientific philosophy. Dedicated to Paul Weingartner / Philosophie als Wissenschaft. Paul Weingartner gewidmet*. Edited by Morscher Edgar, Neumaier Otto, and Zecha Gerhard. Bad Reichenhall: Comes Verlag 1981. pp. 97-118
48. "How disjunctive syllogism can be seen as a fallacy of relevance," *Bulletin of the Section of Logic. Polish Academy of Sciences* 10: 144-151 (1982).
49. "Lessons from Pseudo-Scotus," *Philosophical Studies* 42: 189-199 (1982).  
"The medieval logician "Pseudo Scotus" produced a counter-example to the claim that entailment is strict implication. The paper argues that "pace" recent commentators, this example succeeds. Moreover it also shows that the Anderson-Belnap account of entailment is wrong too, and in particular that the assertion principle (which leads to Curry paradoxes) is incorrect. The example is compatible with the account of entailment provided by depth relevant logics."
50. "On the philosophical bases of relevant logic semantics," *Journal of Non-Classical Logic* 1: 71-107 (1982).
51. "On what there is not," *Philosophy and Phenomenological Research* 43: 151-177 (1982).
52. *Relevant logics and their rivals. Vol. 1: The basic philosophical and semantical theory*. Atascadero: Ridgeview 1982.  
Contents: Introduction X; 1. The implication connection, and the ensuing inadequacy of irrelevant logics such as classical and modal logics 1; 2. Derivability, deducibility, and the core of entailment 69; 3. The shape of the first degree logical and semantical theory, and competing profiles for higher degree logics 170; 3. The semantics of entailment and sufficiency conditionals, relevant affixing systems with normal conjunction, disjunction and negation, and their extensions 284; 5. Further investigation of relevant affixing systems and their parts 348; Appendix i. The semantics of entailment IV: E, II' and II" 407; Appendix 2. The pure calculus of entailment is the pure calculus of entailment 425; Postscript to the Appendices 430; References 435 Index (by Jean Norman) 452-460.

"This volume is primarily a logical and semantical investigation of an extensive class of zero-order intensional logics, i.e. of intensional logics which do not include variable binding devices such as abstraction operators, descriptors, quantifiers or their equivalents. The effect of adding variable binding devices will have to be reserved for another volume. Many of the philosophical investigations and issues which are presupposed by or arise from this predominantly formal study will, we still hope, appear in yet other publications (e.g. *Beyond the Possible*, long in preparation). The separation of these matters is admittedly deplorable (whether the proposed multiplication of book-entities is also deplorable will be left for readers to decide). The exclusion of quantifiers and descriptors deprives the logics of some of their interest and usefulness in the analysis of natural languages and philosophical and other argumentation, and the partial exclusion of intimately connected and motivating philosophical issues is artificial and weakens the case for such a detailed study of particular intensional logics. However this volume is evidently long enough already. *Relevant and irrelevant logics*. We focus on those intensional logics that, satisfying weak relevance principles, have become known as relevant logics. The class of sentential logics that satisfy weak principles of relevance is however wide and includes many logics which are, in principle, rivals to the position(s) we shall be advancing.

We want it to emerge with stark clarity, however, that our main concern is not really relevance at all - the appropriate sort of relevance is a byproduct of any good implication relation, which comes out

in the wash. Only one weak necessary condition for relevance features in what follows: that is all'. A study of relevance, of the sorts of relevance, of sufficient conditions for relevance, ... - all these matters are philosophically interesting, and some of them are important, especially for the logics of evidence and probability - but they are not our present concern. For this reason the name 'relevant logics', or 'relevance logic', is not entirely satisfactory - perhaps even, to lodge a much stronger claim, unfortunate - since the name tends to suggest, wrongly, that relevance is of the essence, instead of being a peripheral concern. Nonetheless the name has a point, and it is a little late to change it.

What our concern is with is implication and its varieties, and in particular with genuine implication in the sense that amounts to total sufficiency. Thus our concern is, in the first place, with sufficiency, or, as it is otherwise equivalently put in the logical case, with complete logical dependence, with total inclusion of logical content, and so on. Implication is not confined however to logical implication or deducibility; we are very much interested in having our systems apply to other sorts of sufficiency, physical or law-like sufficiency in particular, and to provide the bases, in enthymematic ways, for analyses of partial sufficiency, for instance for insufficiency conditionals - for conditionals, for example, which are obtained from genuine sufficiency conditionals by suppression of true or necessary antecedents (or, symmetrically, of false or impossible consequents). This will take us back through the usual logics of the textbooks, to intuitionistic logic and modal logics, and, in the extreme case, to classical two-valued logic. p. X

53. "Relevant logics and their semantics remain viable and undamaged by Lewis's equivocation charge," *Topoi* 2: 205-216 (1983).
54. "Semantical foundations for value theory," *Nos* 17: 441-456 (1983).
55. *On paraconsistency*. Canberra: Research School of Social Sciences, Australian National University 1984.  
Reprinted as the introductory chapter of *Paraconsistent Logic*
56. "Relevantism, material detachment, and the disjunctive syllogism argument," *Canadian Journal of Philosophy* 14: 167-188 (1984).
57. "The American plan completed: alternative classical-style semantics, without stars, for relevant and paraconsistent logics," *Studia Logica* 43: 131-158 (1984).  
" American-plan semantics with 4 values 1, 0, { {1, 0} } { {} }, interpretable as True, False, Both and Neither, are furnished for a range of logics, including relevant affixing systems. The evaluation rules for extensional connectives take a classical form: so eliminating the star function \*, on which much criticism of relevant logic semantics has focussed. The cost of these classical features is a further relation (or operation), required in evaluating falsity assignments of implication formulae. Two styles of 4 valued relational semantics are developed; firstly a semantics using notions of double truth and double validity for basic relevant systemB and some extensions of it; and secondly, since the first semantics makes heavy weather of validating negation principles such as Contraposition, a reduced semantics using more complex implicational rules for relevant systemC and various of its extensions. To deal satisfactorily with elite systemsR,E andT, however, further complication is inevitable; and a relation of mateship (suggested by the Australian plan) is introduced to permit cross-over from 1 to 0 values and vice versa."
58. "Introducing polylogue theory," *Philosophica (Belgium)* 35: 89-112 (1985).  
"Polylogues are a natural generalisation of dialogues, important for communication theory and with applications in epistemology and political theory. polylogues are illustrated, described -- essentially as systems of network-linked participants together with an output record -- and given canonical form. Various logical representations of the basic output unit are investigated; Different forms tie in with different extant logical and linguistic formalisations. the 4-valued (relevant) logic of normal polylogues is studied, before turning to the logic and semantics of more anarchistic general polylogue theory. then the classes of rules under which types of polylogues may be closed are looked at; as well as logical, procedural and commitment rules."
59. "Towards an improved cosmo-logical synthesis," *Grazer Philosophische Studien* 25/26: 135-179 (1986).  
"The proposed synthesis is set within general object-theory. The underlying idea of the synthesis is that the alternative worlds semantics - arrived at in pursuit of a universal semantics (a general

semantics for all languages, including relevant ones) and, connectedly, as part of a comprehensive object-theory - be applied also in fundamental physics, most importantly to the matter of the origin, history, and physical features of the cosmos, but as well, again connectedly, elsewhere, in particular in the interpretation of quantum theory. The universal semantics is a many worlds - a many *nonexistent* worlds - theory. The point of applying such an interpretation in cosmology also is explained by way of examples, concerning the understanding of the contingency of existence and the improbability of present arrangements. A resolution of the basic question, "Why does anything at all exist?" is sketched, leading to the further question why the fundamental constants of physics have the particular surprisingly sensitive values they appear to have. Chauvinistic answers through anthropic principles are critically rejected, in favour of resolution by way of world selection."

60. "Language, thought and representation of "the" world," *Revue Internationale de Philosophie* 41: 64-96 (1987).  
 "In this article the main work goes into establishing a straightforward representational theory of language and of thought, along object-theoretic lines. In passing, an associated way of reversing the Cartesian "revolution" is outlined; a way of reintegrating of choice and representation (or will and idea) -- disastrously separated since Kant pushed humpty dumpty off the philosophical wall -- is explained. The flight from metaphysics shared by Hume and Wittgenstein is critically deplored, and that from realism in Australian intellectual culture applauded"
61. *Metaphysics and morality: essays in honour of J. J. C. Smart*. Edited by Sylvan Richard, Pettit Philip, and Norman Jean. Oxford: Basil Blackwell 1987.  
 Contents: D.M. Armstrong: Smart and the secondary qualities; L. Jonathan Cohen: Laws, coincidences, and relations between universals; Donald Davidson: Problems in the explanation of action; Brian Ellis: The ontology of scientific realism; R.M. Hare: Why moral language?; Frank Jackson: Group morality; D.H. Mellor: The singularly affecting facts of causation; Hilary Putnam: The diversity of the sciences; Peter Singer: Life's uncertain voyage; J.J.C. Smart: Replies.
62. "Cause as an implication," *Studia Logica* 47: 413-427 (1988).  
 "An appropriately unprejudiced logical investigation of causation as a type of implication relation is undertaken. The implication delineated is bounded syntactically. The developing argument then leads to a very natural process analysis, which demonstrably captures the established syntactical features. Next relevantly-based semantics for the resulting logical theory are adduced, and requisite adequacy results delivered. At the end of the tour, further improvements are pointed out, and the attractive terrain beyond present developments is glimpsed."
63. *Directions in relevant logic*. Edited by Sylvan Richard and Norman Jean. Dordrecht: Kluwer 1989.
64. *Paraconsistent logic: essays on the inconsistent*. Mnchen: Philosophia 1989.
65. "Related semantics for all Lewis, Lemmon and Feys' modal logics," *Journal of Non-Classical Logic*: 19-40 (1989).
66. "On making a coherence theory of truth true," *Philosophica (Belgium)*: 77-105 (1990).
67. "Grim tales retold: how to maintain ordinary discourse about -- and despite -- logically embarrassing notions and totalities," *Logique et Analyse* 35: 349-374 (1992).
68. "On interpreting truth tables and relevant truth table logic," *Notre Dame Journal of Formal Logic* 33: 207-215 (1992).  
 "Contrary to common mythology, the two-valued truth tables do not yield classical logic. Many contestable assumptions are required to reach classical logic. Indeed some assumptions are required to get anywhere logically. In between, and in other directions, lie several other logics. For, even logically, there are many ways in which the truth tables can themselves be interpreted."
69. "Process and action: relevant theory and logics," *Studia Logica* 51: 379-437 (1992).  
 "Logical components from a properly expanded Humean model of action are supplied with relevant logics and semantics, in particular "doing, trying" and "striving, intention" and "motivation". The difficult question of formalizing practical inference is then addressed. Relevant dynamic logics, paralleling modal developments, are built up piece by piece, relevant theory change is considered within a dynamic framework and work on relevant temporal and process logics of programming cast, including functors such as "before, during" and "throughout", is initiated. The present state of logical play is assessed."
70. "Significant moments in the development of Australian logic: in critical appreciation of Leonard

Goddard's major contribution," *Logique et Analyse* 45: 5-44 (1992).

71. "Simplified semantics for basic relevant logics," *Journal of Philosophical Logic* 21: 217-232 (1992).

"The paper gives a semantics for the basic positive affixing relevant logic, B\*, which is a simplification of the usual ternary relation semantics. In particular, it disposes with "all" the conditions on the ternary relation, including the heredity condition. These simplifications are carried over into the basic systems including negation, BM (using the Routley \* semantics) and BD (using four-valued semantics). Appropriate soundness and completeness theorems are proved."

72. "Paraconsistent classical logic," *Logique et Analyse* 36: 3-24 (1993).

73. *The greening of ethics: from human chauvinism to deep-green theory*. Cambridge: The White Horse Press 1993.

"This text sets out what environmental ethics is and is not, tracks main movements in environmental ethics is proceeding and developing, provides suggestions on how environmental ethics can reach a wider audience, and recommends methods and actions of inculcating and promoting environmental ethics. The unifying theme is a greening of ethics and applications of this greening. The text also plays with the conception of an environmental ethic as good, as a focus of an intellectual business venture, theoretical ethics becoming a branch of economics. This suggests that there is no neat boundary between ethics and economics."

74. "Ubiquitous vagueness without embarrassment: logic liberated and fuzziness defuzzed (i.e., respectabilized)," *Acta Analytica*: 7-29 (1993).

"Although puzzles surrounding vagueness are ancient, they have been much intensified since the rise of standard "classical" logic. A main trouble is that standard logic proceeds to "validate" both ancient defective arguments (sorites paradoxes) and modern defective arguments (modal paradox analogues). But much evidence has recently accumulated as to the severe philosophical inadequacy of standard logic. Plausibly then ways out of such logic-induced puzzles which work elsewhere, relevant ways which work well, will succeed with puzzles of vagueness also. So it proves, by letting the puzzles constrain the logic, so producing their own demise, we reach elegant logical resolutions with the "very" logics adopted elsewhere for removing other logic-induced problems."

75. "Freedom without determinism: decent logics of relevance and necessity applied to problems of free-will," *Acta Analytica*: 7-32 (1995).

"Arguments for determinism do not enjoy the sound logical health that has been attributed to them. The main older argument is fallacious, indeed classically invalid, while a new "rectified" form is relevantly invalid (relying on modally covered form of disjunctive syllogism). What is more, there is no satisfactory way of repairing this form of argument so that it does yield a credible determinism. Other arguments for (non-vacuous) determinism are also dispatched, through a divide-and-dissolve technique, which operates by distinguishing types of determinism (such as logical determinism, which depends on another modal fallacy) and kinds of arguments for determinism (such as rational choice arguments, which inadmissibly assume maximization, and reductionistic arguments, which inadmissibly assume full reduction of choice and deliberation succeeds). In the largest of three appendices (the other two concern logical developments), a reasonable libertarianism is discerned and defended."

76. "Re-exploring item-theory," *Grazer Philosophische Studien* 50: 47-85 (1995).

"Reexplored are certain item-theory theses, major problem zones, and newer puzzles and, together therewith, prospects for liberalizing and pluralizing item-theory. Undoubtedly item-theory may be further liberalized, partly by further dissociation from object-theory and the restrictions *object* imposes, but primarily through substantial deregulation of the styles of characterisations permitted. Then almost anything goes; nonetheless what results is a sufficiently well-organised smooth-running sistological anarchism. Characterisation is dispersed through a federation of regions: only in old central city regions do the characterisation postulates of older object-theory regularly hold; in the expanding suburbs characterisation by local assumption and postulation (as in neutral postulate-theory) is a distinctive mode, while out in the country implicit intentional characterisation (including ostension and perception, dreaming and imagining) is a common mode. Put differently, there is a rich variety of sources yielding item specifications; only in places like the old city do structural descriptions of items enjoy formerly-imagined priority, but elsewhere alternative characterization

principles may operate. However what holds in situations as a result of such local or regional characterisation may be far removed from what is actual. Characters may be only make-believe or suppositional presented character may differ from more genuine articles, and so on. Bringing the items involved into central evaluation markets, where truth value is assessed, may require preparation of the items, with pruning or regularisation of their properties. Here, at this semantical stage, full pluralization offers further freedom, that is pluralization of truth, with a plurality of actual worlds. A single assignment of truth, *the* truth at the actual world, is no longer *de rigueur*; a truth net may be differently cast, different assignments may be adopted, and a selection among alternatives perhaps made. Within this liberalized pluralized setting, resolutions of puzzles induced by certain problem-making items are ventured."

77. *Transcendental metaphysics. From Radical to Deep Plurallism [sic]*. Cambridge: The White Horse Press 1997.

From the Note by Nichoals Griffin:

"When Richard Sylvan died in June 1996 the manuscript of this book was already complete. It is true, to take up one of the themes put forward in its pages, that 'complete' in this context is not an absolute term: while one typescript was with his publisher at the time of his death, another, bearing further revisions, was with his typist. The changes he made at this time, however, were minor and only the bibliography and references have required much attention from me."

Contents:

Prologue: Complaints and Acknowledgements XI; Note by Nicholas Griffin XIV; General description and synopsis XV;

I. Basic theory

1. Introducing and placing Full and Deep Plurallisms 3; 2. Explaining full metaphysical Plurallisms: their features, their differences 18;

II. Arguments

3. Paths and arguments leading to Deep Plurallism: *Vias Negationis* 39; 4. More arguments to Deep Plurallism: *Via Positivas* 61; 5. Still more positive arguments to Plurallism 93;

III. Theory elaborations

6. Worlds and Wholes: their natures and relevant features 141; 7. Talking and thinking Plurallese as well as more ordinarily: modellings and discourse for and under Plurallism 175; 8. Making a wider metaphysical sweep: traditional notions. Traditional pluralism. Traditional objections 227;

IV: Comparisons

9. Distancing Plurallism from Realism, Anti-Realism and Relativism, and those other isms 259; 10. Plurallistic investigation of Relevant philosophers and philosophical Schools 299;

V. Outcomes

11. Impacts upon philosophy: harmonious applications and further problem-solving 351; 12. What Deep Plurallism does, its intellectual impact, and where it leads 409;

Epilogue. Beyond Intellectual Plurallism -- to Liberating Practice 455; Endnotes 467; Bibliography 507; Index 519-525.

**"General description of Form and Content of *Transcendental Metaphysics*.** There is not merely a plurality of correct theories and of more or less satisfactory world-views: there is a corresponding plurality of actual worlds. Plurality penetrates deeper in full plurallism than linguistic surface or than conceptual or theoretical structure, to worlds. There is no unique actual world such as realism postulates, but many worlds; there is no single fact of the matter, there are facts and matters. Full plurallism itself bifurcates, into two main forms; radical pluralism, which rests with multiple actual worlds, and *deep* plurallism, which 'completes' this multiplicity with a unifying ultimate item, the Wholle, of which the multiplicity comprises various worldifications. Much of the text is devoted to the theoretical elaboration and defence of deep plurallism, both directly and by comparison with past positions.

Overall structure of the book (which is as shown by its short content) is, in brief, as follows: The basic theory is introduced and explained, and several confusions offset. Arguments against the radical theory are deflected and then many arguments for it are advanced. Following that detailed

stage, deep plurallism and other pluralisms are further elaborated, in part through a detailed investigation of key notions, both of full plurallisms and also from traditional and religious pluralisms. Next the full theory is set in place through a series of comparisons: firstly with the other standard philosophical positions in realist-idealist-relativist and related debates, and secondly with connected development of many worlds theories and transcendental metaphysics of other philosophers. There too it is demonstrated that deep plurallism is not merely a metaphysics, but one that is transcendental, and various arguments against transcendental metaphysics are repelled. Finally full plurallism is put through its paces, in showing its power in resolving or relocating major philosophical problems, and further in dislodging powerful prevailing ideologies. In a brief epilogue, full plurallism is linked to practice. For instance, its decided merits as regards liberality and tolerance are explained.

Considered one way, the basic theory defended and developed can be seen as a plural realism, with central thesis that actuality is plural, more concretely that there are many actual worlds, not a unique one. Radical plurallism, which is pluralism at this actual world stage, not merely at a theoretical or conceptual scheme level, thus resembles realism, simply as (what is strictly impossible) pluralized. Deep plurallism does more, as it includes at least a nonworldly nondescript transcendental item in addition. From such world pluralism, however augmented, plurality of many other critical notions follows, notably of truth and evidence, truth for instance amounting to what holds at an actual world (of which there are very many).

However the basic theory can be alternatively seen not as a realism at all, because many apparently central themes of both ordinary realism and scientific realism are repudiated (e.g. respectively, uniqueness of the external world, and that that world is substantially as dominant science asserts, with all the existential trappings it alleges and none other). Alternatively again, it may be viewed as an antirealism, because for instance of its rejection, along with contemporary anti-realism, of the stock realist theme that there is a unique recognition-independent reality (or, on a lesser count, because of its questioning of classical bivalence and other truthvalue principles). Nonetheless such an assimilation has, like others, limited plausibility, because full plurallism acknowledges many recognition-independent (perceiver and mind transcendent) actual worlds. Alternatively again, full plurallism may be regarded as mere relativism, because of its commitment to-what is less than relativism-relativity principles, for instance that truth is relative to actual world, and therefore is structurally relative. Whereupon it may be wrongly supposed that plurallism, like indiscriminating relativism, is self-refuting. Again, however, such a relativistic comparison is seriously defective-unless quite atypical, much more discriminating relativisms are envisaged. For by no means all positions are admissible, still less equally good. In plurallism there remain both internal and external checks upon adequacy and correctness: but, checks and balances that do not effect unique semantical selections.

Central to pluralistic enterprise (as opposed to fashionable relativism) are arguments, and therefore matters of logic and rival logics. Main arguments for full plurallism begin from plural logical theory, which is pivotal to all rational inquiry. Several different arguments are advanced for the plurality of correct theories; and it is argued from there through correspondence, or directly, to the plurality of actual worlds. Several coupled arguments from methodology are also developed. Stock arguments from rival one (actual) world positions are duly disabled.

Deep plurallism has large corollaries, for intellectual theory and practice, both inside and outside philosophy. To take one example: as it affords a comparatively easy way between the rocks of realism and relativism, so it affords a way between acceptance and rejection of science, of rationality, and more generally of the Enlightenment Project. There is no unique correct Science such as that the Enlightenment postulated; but there are various sciences, where not everything goes. In place of certified logic stands not no logic, but a plurality of logics, including more than one correct logic. Similarly in place of reason and rationality stands not nothing, not a rejection of reason and rational methods, but a pluralization of them (with prominent correct methods rejecting received modern maximization and consistency imperatives). In place of the truth stands not nothing, nihilism, no court of appeal regarding correctness, but several: pluralistic truth. In place of the Enlightenment stands not a return to earlier (and subsequent) dark ages, but a plurallistic flowering, into enlightenments." pp. XV-XVI.

78. *Sociative logics and their applications. Essays by the late Richard Sylvan*. Edited by Hyde Dominic and Priest Graham. Aldershot: Ashgate 2000.

"Much searching went into trying to find a satisfactory term to distinguish these logics. The eventually adopted term, *sociative*, derived through French from the Latin *sociare*: 'to combine, unite, etc.' and *socius* 'companion'. It now means 'expressing or denoting association, conjunction, union': see *Oxford English Dictionary*. Occasionally, the now obsolete English noun, verb and participle, *sociare*, will also be deployed." Note, p. 29

"Contemporary logical investigations enjoy the advantage of vastly improved logical technology as compared with all earlier terrestrial times. Yet, by comparison with earlier periods of high logical activity, the twentieth century is anomalous in its heavy mainline concentration upon classical logic, and, as a result, appears stodgy and unadventurous. For the deadening effect of the wide educational imposition of a narrow and intellectually disastrous dominant logical paradigm, classical logical theory, has (again) destroyed much logical expression and adventure. Rival logics have become very much a minority and esoteric activity, not even incidental to the serious affairs of life; no longer do even the city crows converse over logical issues. The full flourishing of sociative logics, in their rich variety, has yet to occur.

So far as we know, there have been three main periods in the long history of Western logic when the central issues of logic, as to what makes an argument valid, when deducibility obtains, and whether these connections can be captured in true or necessary conditionals, have been vigorously discussed. The periods are these: around the third century BC when Stoic logic flourished, in the medieval period, especially the twelfth century AD, and in the present century.

The logical investigations carried out in these three significant periods are, thus far, substantially independent. The Stoic enterprise of the third century exerted little or no influence on medieval thought, and indeed details (such as they are in Sextus Empiricus) were not available until after the seminal work of Abaelard's school and rival schools had already been accomplished. Of the main contemporary strands of sociative logic, only connexive and nontransitive logics have clear historical representation, and even there main investigations have proceeded substantially independently of historical inputs. When history has been appealed to in support of relevance logics, for example, it has been rather peripheral and, too often, historically dubious.

Though the main historical settings for sociative logic presupposed a heavy consistency assumption (in particular throughout medieval times), and though paraconsistent logics tend to be missing in expected areas of application (such as treatment of semantical paradoxes), nonetheless the history of sociative logics is deeply interwoven with that of paraconsistent logics. One major reason for the intertwining is of course that crucial issue for sociative logics is what-by contrast with strict and classical spread and collapse-happens with impossible premisses and assumptions. How is loss of connections to be avoided there? A special section of the theory of obligationes (or suppositional reasoning and commitment) was devoted to this issue in the Middle Ages; and a similar division of research, plainly parasitic on classical logic however, can be seen in contemporary North American research (such as that of Rescher and Brandom and of Woods and Walton). These pretty unsatisfactory ways of shunting off, and sidetracking, significant logical problems fortunately by no means exhaust feasible lines of approach, as the rich history of paraconsistent logics helps disclose. That history has already been documented, admittedly also in a very preliminary fashion, elsewhere (especially in *Paraconsistent Logic* and its extract *On Paraconsistency*, which should be read in conjunction with this material-conversely, this material enriches *Paraconsistent Logic*, which is scanty on several topics of relevant interest). The entertaining story, which overlaps and complements the history of sociative logics, will not be repeated, but elements of it will be drawn upon where appropriate (and readers who seek a fuller picture to begin upon their own investigations should consult that story, as well as, of course, but cautiously, standard texts)." pp. 53-54.

79. *Relevant logics and their rivals. Volume II. A continuation of the Work of Richard Sylvan, Robert Meyer, Val Plumwood and Ross Brady*. Edited by Brady Ross. Aldershot: Ashgate 2003. With contributions by Martin Bunder, Andr Fuhrmann, Anda Loparicx, Edwin Mares, Chris Mortensen, Alasdair Urquhart.

Contents: List of Contributors VIII; List of Figures IX; Preface XI; Prologue by Ross Brady 1; 6. Non-normal relevant systems by Richard Sylvan and Val Plumwood 10; 7. Multiplying connectives and multiply intensional logics by Richard Sylvan, Robert Meyer and Val Plumwood 17; 8. Operational semantics by Richard Sylvan and Val Plumwood 38; 9. The algebraic analysis of relevant affixing systems by Richard Sylvan, Robert Meyer, Ross Brady, Chris Mortensen and Val Plumwood 72; 10. The more general semantical theory of implication and conditionality 141; 11. Recent developments I by Ross Brady 192; 12. Recent developments II by Ross Brady 231; 13. On quantified relevant logics by Ross Brady 309; Appendix: Extensional reduction II by Robert Meyer and Richard Sylvan 352; Bibliography 408; Index 421-425.

"The main writing work, for the two volumes, was done by Richard Routley, making essential use of work of Meyer, Plumwood and Brady in the process. The second volume was also to include Chris Mortensen at least for his work on the algebraic analysis of relevant affixing logics. Moreover, Richard remained the driving force behind the *Relevant Logics and their Rivals* volumes, providing the layout and material for an integrated work. During the time of writing, Richard had sent most of the chapters to a number of people for comment. However, some of these chapters, earmarked for the second volume, were more complete than others, and four of the tentative chapters (i.e. chapters 10 and 13-15), being fairly incomplete, were not sent out at all.

However, subsequent to the publication of the first volume, there was quite some delay in getting the second volume together, mainly because Richard Sylvan was heavily involved in environmental philosophy and had other interests, both academic and non-academic. Richard made a number of attempts to restart the book, usually by contacting the other authors, but these contacts did not reap much progress. In 1985, he had more or less given up on the chapters of the tentative contents. Richard had subsequently persisted with the idea of rewriting the second volume to bring it more into line with his recent thinking, since the early work of the 1970's was starting to date in relation to more recent advances. He made a start on this revision around 1988-9, producing a number of short separate pieces, which were hard to connect to the chapters previously sent round for comment. Thus, it would be hard to make much use of these pieces in this book, if one relied on the chapters of the tentative contents for guidance.

Unfortunately, Richard died unexpectedly in 1996, at the age of 60, leaving a plethora of unfinished work.

(...)

Upon initial examination of Richard's chapters 6-15, including his relevant archival material, I found that while a lot of it was in good shape for publication, much of the remainder was incomplete, sketchy or inaccurate. This is not entirely unexpected, given the circumstances. Nevertheless, I was put into the dilemma of *either* trying to complete it as best as I could, in accordance with the tentative contents, *or* inserting more up-to-date material. The main difficulty about the first approach is the age of the material, since it was done during a period of greater logical experimentation than seems appropriate nowadays, together with the advent of newer developments in the relevant logic area.

So, I have generally proceeded with the second approach by extending Richard's material into some new directions which cover the period from the time of publication of the first volume to the present. Given that Richard was interested in updating the original chapters 6-15 anyway, I feel this second approach is not entirely inappropriate nor against his wishes. I have also been ably assisted in this task by Martin Bunder, Ed Mares, Andre' Fuhrmann, Chris Mortensen and Alasdair Urquhart, who have given me some accounts of their recent work for inclusion.

In this way, much of Richard's work and that of his co-workers, whose Work was interwoven into Richard's material, will be maintained for posterity as an important contribution to logic, upon which others may choose to build." pp. pp. XI-XIII.

80. "The importance of nonexistent objects and of intensionality in mathematics," *Philosophia Mathematica* 11: 20-52 (2003).

With a foreword by Nicholas Griffin (pp. 16-19).

This "is a reprinting, with as little change as feasible from the original typescript, of most of Chapter 10 and the introduction and first section of Chapter 11 of Richard Routley (who changed his name to Sylvan in 1985), *Exploring Meinong's Jungle and Beyond: An Investigation of Noneism and the Theory of Items*, published by the Philosophy Department of the Research School of Social Sciences of the Australian National University, Canberra, 1980, and still available from it (ISBN 0-909596-36-0)."

"The more comprehensive case for the importance of nonentities includes, as especially significant, their role in mathematics and their roles in the theoretical explanations of science-the whole business, that is, of appealing to ideal simplified objects, which suitably approximate real objects, in problem solving and theoretical explanation. More generally, the theoretical sciences are seriously nonreferential, both in having as their primary subject matter nonentities, and in being ineradicably intensional. This thesis runs entirely counter to empiricist philosophies of science, which have long dominated the subject (to its detriment), according to which the language of science is, or ought to be, referential. Empiricist thinkers have, until very recently, regarded the citadel of science as exclusively theirs: and the main goals of philosophy, as they conceive them, have been determined by the defense and extensions of the citadel to increase its power over the intellectual landscape. Thus they have taken the language of science, properly refined referentially of course, as the ideal of language, to which much ordinary language is at best a shabby first approximation; and they have characteristically seen philosophy as the handmaiden of science, as like a servant clearing away rubbish in the way of scientific progress or questioning scientific practice and values, or as a subsidiary scientific activity of conceptual analysis and reconstruction aiding the defense or advance of total science. A basic assumption in all this, without which much of the superstructure collapses, is that both the language of science and scientific theories conform to empiricist canons: the assumption is false-so at least it is now argued. The case begins by considering mathematics, which forms an integral part of much theoretical science."

## PUBLICATIONS AVAILABLE IN LINE

Articles published in the *Notre Dame Journal of Formal Logic* (PDF format) available at [Project Euclid](#):

Author to search: Routley

- Some things do not exist (1966)
- Existence and identity in quantified modal logic (1969)
- Non-existence does not exist (1970)
- Conventionalist and contingency-oriented modal logics (1971)
- Algebraic semantics for  $S_2^\circ$  and necessitated extensions (1976)
- Repairing proofs of Arrow's general impossibility theorem and enlarging the scope of the theorem (1979)

Author to search: Sylvan

- On interpreting truth tables and relevant truth tables logic (1992).

## STUDIES ABOUT HIS WORK

1. Hyde Dominic, "Richard (Routley) Sylvan: writings on logic and metaphysics," *History and Philosophy of Logic* 22: 181-205 (2001).

"Richard Sylvan (n Routley) was one of Australasia's most prolific and systematic philosophers. Though known for his innovative work in logic and metaphysics. the astonishing breadth of his

philosophical endeavours included almost all reaches of philosophy. Taking the view that very basic assumptions of mainstream philosophy were fundamentally mistaken, he sought radical change across a wide range of theories. However, his view of the centrality of logic and recognition of the possibilities opened up by logical innovation in the fundamental areas of metaphysics resulted in his working primarily in these two, closely connected fields. It is this work in logic and metaphysics that is the main focus of what follows."

2. Kielkopf Charles, "Critique of the Routley's first degree semantics," *Australasian Journal of Philosophy* 52: 105-120 (1974).
3. Lewis David K., "Noneism or allism?," *Mind* 99: 23-31 (1990).  
Reprinted in: D. Lewis - *Papers in metaphysics and epistemology* - Cambridge, Cambridge University Press, 1999, pp. 152-163.
4. Priest Graham, "Meinongianism and the philosophy of mathematics," *Philosophia Mathematica* 11: 3-15 (2003).  
"This paper articulates Sylvan's theory of mathematical objects as non-existent, by improving (arguably) his treatment of the Characterisation Postulate. It then defends the theory against a number of natural objections, including one according to which the account is just platonism in disguise."
5. Slater B.H., "Routley's formulation of transparency," *History and Philosophy of Logic* 13: 215-224 (1992).
6. Witherall Arthur, "Lewis and Sylvan on Noneism," *Grazer Philosophische Studien* 58-59: 181-202 (2000).  
"In his paper "Noneism or Allism", David Lewis argued that Richard Sylvan's rehabilitation of Meinong's theory of objects was not a *noneist* one but rather an *allist*, that is, that all objects whatsoever actually exist and thus Meinong and Sylvan are among the greatest 'entity-multipliers'. But this is exactly what Sylvan tried to show is not the case. I will argue that Lewis' attack ultimately fails in re-instating an old serious misinterpretation of Meinong metaphysics. In doing so he deflects attention away from the substance of Sylvan's position and casts him as the defender of something unintelligible."

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