Reason, causation and compatibility with the phenomena

Basil Evangelidis

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Abbreviations

Adv. Math.	*Against the Mathematicians*
BB	*The Blue and the Brown Books*
CE	*Cause and effect: Intuitive awareness*
CV	*Culture and value*
De Gen. et Corr.	*De Generatione et Corruptione*
DRN	*De rerum natura*
Ecl.	*Eclogarum physicarum et ethicarum*
Enn.	*Enneads*
LH	*Letter to Herodotus*
Mant.	*Mantissa*
Meta.	*Metaphysics*
NA	*Noctes Atticae*
NB	*Notebooks*
PG	*Philosophical grammar*
PH	*Outlines of Pyrrhonism*
Phys.	*Physics*
PI	*Philosophical investigations*
Post. Anal.	*Posterior analytics*
SVF	*Stoicorum veterum fragmenta*
TLP	*Tractatus Logico-Philosophicus*
Virt. Prof.	*De profectu in virtute*

Preface

The passage from mythology to philosophy brought in the center of reasoning the problems of causality and compatibility with the phenomena. Pherekydes of Syros (sixth century BC), student of Pittacus and teacher of Pythagoras, was a mythographer, theologian and the first philosopher that wrote in prose. He is ranked as the founder of the Italian School of Ancient Greek Philosophy, with its important Eleatic and Atomist heirs, who developed rational conceptions of causation. Pherekydes' works, however, are not extant, in order to understand his philosophical system. The axiomatic method that the French philosopher Vuillemin (1986) considers as a prerequisite for free philosophy is still missing from the remnants of Pherekydes. The first onsets of an axiomatic philosophy were developed by the Atomists, who introduced causal explanations and terms that are actually in use in modern quantum mechanics theory, for instance, the terms "atom," "void," "collision," "rebound," "entanglement," "vibration," and "interweaving" (Epicurus, *Letter to Herodotus*).

Philosophical thought was shaped by subtle idealizations, which invented new research methods and concepts in ethics and natural matters. With the passage of time, the advancement of science and especially physics motivated further philosophical inquiries, for instance, in the field of causality. As an outcome of a long-running research for causes in scientific philosophy, modern quantum-physical theories introduced indeterministic explanations of the world, in substantial disagreement with the deterministic worldview of positivism and mechanistic philosophy. Stimulating upshots to philosophical beliefs about causation evoked relativity theory, as well. Consequently, philosophers such as Gaston Bachelard (1983) reflected upon the use of the concepts of causation and contemporaneity in epistemology. The plurality of the active causes at a certain time substantiates against one-dimensional causal explanations. It is rather the whole network of causal interconnections that plays the significant role. Hence, the cause of a certain fact can hardly be unique. In agreement with Epicurus, we should be alert that we may discover a plurality of causes and possibilities. The effective interplay between phenomena and scientific theory would, therefore, encompass the detailed investigation and enumeration of all multiple possible conclusions or analogues of evident observations.

More good reasons to philosophize set forth arduous theoretical disagreements between realists, idealists and sceptics, regarding the nature of the universals and the validity of the inference from the observable to the unobservable. How can we assume to have trustworthy knowledge of universal concepts and judgements? Are

universals compatible with objects of the extramental world? To what extent do models of the phenomena correspond to the real world? The respective disputes created new conceptualizations in Philosophy of Science, such as the notions of atom and energy. In parallel, the development of geometry and mechanics provided new methods for the study of the novel concepts, such as analysis, synthesis, analogy, exhaustion. Medicine was able to demonstrate the function of the brain and the heart. Demonstrative science became thus a role model for philosophy.

A strong motivation for this book was Descartes' method of radical doubt. The fact that Descartes was not only a philosopher but also an outstanding mathematician made the research topic more tangible, as it offers evidence that his methodological statement must be right and sincere. The respective Cartesian requirement for clear and distinct demonstrations, besides, is one of the most powerful propositions in the history of philosophy. The demand to provide philosophical work of the same value and to research the relevant interplay between philosophy and science has been enormous after the invention of the Cartesian method of radical doubt.

An equally significant motivation for setting the thematic of this book was the research questions that emerge upon the problem of exactness in philosophy of science. The analytic tradition began with the *Analytics Prior* and *Posterior* of Aristotle, which offer a disciplined framework for scientific philosophy. Simultaneously, Aristotle regarded ontology as the most exact of the sciences, because of the limited number of its principles. In the two long millennia that followed ancient scientific philosophy, through collective efforts of scholastic examination and painful investigation of humans, society and nature, the exact sciences turned to experimental and mathematical methodologies, which demanded a radical reconsideration of philosophical thought. From this renovation-standpoint, I discuss problems of modern philosophy in their interplay with modern science (for instance, quantum mechanics) wanting to specify the exchanges and the boundaries between reason and experimental science.

Introduction

The Greek Mathematician and Philosopher Pythagoras had introduced the name "Philosophy" and called himself a "Philosopher," upholding that no more than Gods can be really wise. Only seven wise men were publicly recognized as such in ancient Greece: Thales, Solon, Periander, Cleobulus, Chilon, Bias and Pittacus, according to Diogenes Laertius (1921a). Beginning with Thales and his student Anaximander, founder of the Ionian School, and Pherecydes and his student Pythagoras, founder of the Italian School, scientific speculation was focusing on higher sophisticated problems. Philosophy was motivated by riddling questions upon the deep meaning of natural and moral notions, such as causality and free-will. Striking contradictions in physical experience, everyday practice and human relations, required reflection upon their ultimate causes or hidden structures. Therefore, philosophy tries to clarify the significance of concepts like fate, chance, spontaneity, necessity and cause, either in the universe or in the human soul or in the use of language.

Nonetheless, what does the word "cause" mean? How a housebuilder is the cause of a house, while a computer-programmer may only incidentally be? Reflection upon intellectual deliberation and incidental spontaneity led the philosopher Aristotle to the distinction of different kinds of causes. Right after the introduction of the four causes (material, formal, efficient, final) by Aristotle, in the third part of the second book of his *Physics*, he refers to previous ideas about causality, namely "chance" and "spontaneity." That prehistory of meditating on causation was written by philosophers like Empedocles, whose cosmology and zoology regarded chance as a cause, as well.

Some people insist that nothing happens by chance, but that everything has some definite cause; for instance, "coming 'by chance' into the market and finding there a man whom one wanted but did not expect to meet is due to one's wish to go and buy in the market." By contrast, some people ascribe "heavenly sphere and all the worlds to spontaneity," as Aristotle[1] delivered. The early physicists did not recognize chance among the causes rather than love, strife, mind, earth, air, fire, water, etc. Others suggested that chance is not responsible for the generation of animals and plants, nature or mind, and yet they conferred that the heavens arose spontaneously. Others believed that "chance is a cause, but that it is inscrutable to human intelligence, as being a divine thing and full of mystery."[2] The concepts of truth and realism could

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[1] *Phys.* II, 4

[2] Aristotle, *Phys*. II, 4

hardly be formulated without any preceding considerations of causation. If realism supports the existence of a mind-independent reality, then our attitude towards causality, chance and free-will becomes crucial for becoming either materialists or idealists or dualists.

The first chapter of this book refers to the birth of philosophical thinking on causality, determinism, fate, chance, spontaneity and free action. This thematic consists of a synergy of two of three main philosophical directions, namely ethics and philosophy of physics, while keeping in the background the third direction that refers to philosophy of language,[3] which was called dialectic from ancient times. Dialectic was introduced by Socrates and developed by his student Plato, who wrote dialogues that hung around the middle-ground between poetry and prose. Diogenes Laertius (1921a) stressed that Plato's dialectic is the art of discussion, through two main modes of presentation, the instruction and the investigation. The instruction is subdivided to theoretical (either Physics or Logic) and practical (either Ethics or Politics). The investigation is also subdivided to rehearsing (either thought aiming or checking out) and quarrelling (either demonstrating or contradicting). In the Platonic dialogue *Timaios* the universe is conceived as created by the Demiurge, according to two overarching principles: reason and necessity. The philosophers, thereafter, arguing on cause, chance, and necessity, admitting or rejecting divine providence and fate, will produce many different models of causality, wavering from free action to determinism under different combinations of modal premises.

The second chapter of the book turns to the philosophical problems of evidence, truth, method and realism, scoping the passage from antiquity to medieval and modern philosophy of intentionality and phenomenology. Observational evidence was subservient to intellectual illumination in Platonic philosophy, since pure knowledge was considered as superior to the disrupted and inattentive perceptions of the senses. The contradiction between evidence and reason was steadily effective from Democritus to Plotinus and from Porphyry to the Nominalists. On the contrary, the Christian tradition from Augustine to Aquinas defended the correspondence between evidence and reason. In the Middle Ages, Philosophy investigates the relations between faith, knowledge and truth, in various inquiries such as theory of consequences, singular future contingents, and intentions. The return to the medieval concept of intentionality by Franz Brentano and the related introduction of phenomenology by Edmund Husserl share remarkable similarities and common problems with the intellectual framework of the Scholastics.

[3] Philosophy of language will be revived by the British empiricist John Locke.

The third chapter examines the empirical and mathematical turn in the philosophy of science, which started in the age of the scientific revolution with Descartes and Leibniz. The revival of skepticism in these frameworks was mainly a consequence of Hume's criticism of the concept of causality and the problem of induction, which were the challenging themes of his *Enquiry* of the differences between relations of ideas and matters of fact. Confronting skepticism, the problems of truth and realism arise as central in philosophical thinking and maintain an enduring significance. The realist or correspondence theory of truth suggests that: "A belief is true if it corresponds to reality." Truth is a relational concept; facts make the propositions true, according to the realists. On the other hand, the idealist or coherence theory of truth alleges that: "A belief is true if it coheres with other ideas." The pragmatist or utility theory of truth argues that: "A belief is true if it is useful in practice." The truth-makers, therefore, are facts for realists, ideas for idealists, and practice for pragmatists. In the twentieth century, the logical empiricist Hempel (1958) formulated the Theoretician's Dilemma, the pragmatist Sellars defined truth as assertability, the logician Tarski provided the semantic definition of truth (as a version of the correspondence theory of truth), while Putnam put forward internal realism. The attempts for clarification have led Popper, Niiniluoto and others to turn to the concepts of "truthlikeness," "approximate truth," "verisimilitude," which are functional in the theory of fallibilism, that "claims that scientific theories are either uncertain-but-probably-true or false-but-truthlike hypotheses."[4]

The fourth chapter of the book refers to the influence of natural science and mathematics on Ludwig Wittgenstein, mostly during the formation of his philosophy in his young works. This influence was combined with a critical attitude, which "must teach liberation from language as the highest goal of self-liberation," as Mauthner[5] argued. "If I want to rise up in the critique of language, which is the most important business of thinking mankind, I must destroy language step by step behind me, before me, and within me, I must break the rungs of the ladder as I step on them."[6] This metaphor was first used by Sextus Empiricus, then by Ernst Mach and Mauthner, who influenced Wittgenstein. The picture theory of meaning, the truth tables and the philosophy of logical atomism were the main outcomes of that mixture of impels. Theoretical problems such as the status of logic, language, unobservable entities urged scientists as Kirchhoff, Boltzmann, Mach and Hertz, to tackle the related

[4] Niiniluoto (2002), *Critical Scientific Realism*, p. 13
[5] Mauthner (1901-1921), *Beiträge zu einer Kritik der Sprache*, 1.713
[6] op. cit. 1.1

phenomenological questions and criticize traditional philosophy. Their epistemological theories influenced Wittgenstein.[7]

The fifth chapter of the book investigates the philosophical repercussions of Dirac's theory of the vacuum. Not only the fundamental concepts of quantum theory found their origin in the Ancient Atomist theories, especially in Epicurus and Lucretius, but also Dirac's model of the vacuum as an infinite sea of particles, has a striking resemblance with the theory of the disseminate void of Theophrastus and Straton of Lampsakos: "pockets of void are scattered throughout all things, and are the explanation of transparency, compression, and mixing."[8] Dirac was also influenced by Lucretius' work and his contention that infinite atoms move faster than light in the infinite universe (*DRN* 2.142-66). Paul Dirac did not refer directly to ancient Atomists but only to contemporary quantum theories about light and matter particles. However, his insistence on the role of vacuum was extremely effectual to modern science and technology.

The sixth chapter is an attempt to discuss the relationships between Quantum Theory and consciousness, regarding scientific advances in physics, neurology, neurobiology, social neuroscience, etc. In this direction of comparative research, the alleged contradiction between human and natural sciences seems to discover a promising area of fruitful liaisons. The moral consequences of the accumulation of technological resources is an important part of this thematic. In the same manner, in the denouement of the book, a view on the thought of Michel Foucault, as a dialectic of power relations and exhaustive inquiry of the historical role of power in the formation of social and cognitive structures, provides valuable sustenance for the confrontation with the ethical dilemmas that arise from the role of discipline in the modern world.

[7] In 1938, Wittgenstein taught about action at a distance and indeterminism as revolutionary developments in science, anticipating thus Kuhn. Wittgenstein was also open to the idea of the potential infinite, instead of the actual infinite.

[8] Irby-Massie & Keyser (2002), *Greek Science of the Hellenistic Era: A sourcebook,* p. 12

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Bibliography

Abrams, D. A., Nicol, T., Zecker, S. G. & Kraus, N. (2006). Auditory brainstem timing predicts cerebral asymmetry for speech. *The Journal of Neuroscience,* 26(43), 11131-11137.

Achinstein, Peter (2010). *Evidence, explanation, & Realism. Essays in Philosophy of Science*. Oxford: The University Press.

Alcinous (2002). *The Handbook of Platonism* (Translated with an introduction and commentary by John Dillon). Oxford: Clarendon.

Alexander Aphrodisiensis (2008). *De anima libri mantissa* (Edited by Robert W. Sharples). Berlin, New York: Walter de Gruyter.

Alexander of Aphrodisias (1989). *On Aristotle's* Metaphysics 1 (translated by W.E. Dooley, S.J.). Ithaca NY: Cornell University Press.

— (1991). *On Aristotle's* Prior Analytics 1.1-7 (Translated by Jonathan Barnes, Susanne Bobzien, Kevin Flannery S.J., Katerina Ierodiakonou). London: Duckworth.

— (1992). *On Aristotle's Metaphysics 2 & 3* (translated by W.E. Dooley & A. Madigan). Ithaca NY: Cornell University Press.

Anderson, C. A. (1933). The positive electron. *Physical Review,* 43, 491-494.

Anellis, I. H. (2004). The genesis of the truth-table device. *The Journal of Bertrand Russell Studies* 24: pp. 55-70.

— (2011). Peirce's truth-functional analysis and the origin of truth tables. *History and Philosophy of Logic* 33(1): pp. 87-97.

Anscombe, G. E. M. (1963). *An introduction to Wittgenstein's Tractatus* (2nd ed.). London: Hutchinson University Library.

— (1971). *Causality and determination. An inaugural lecture.* Cambridge: University Press.

Aquinas, T. (1952). *Questiones Disputatae de Veritate* (Questions 1-9; translated by Robert W. Mulligan, S.J.). Chicago: Henry Regnery Company.

— (1962). *Summa theologiae* (Latin text and English translation, introductions, notes, appendices, and glossaries; T. Gilby, Ed.). London: Blackfriars.

— (1994). *Truth.* Volume: 1 (Robert W. Mulligan – Translator). Indianapolis: Hackett Pub.

— (2007; 1256-59). *Les 29 Questions Disputées Sur La Vérité* (La traduction sera petit à petit entièrement effectuée par les moines de l'abbaye sainte Madeleine du Barroux). Available online at: http://docteurangelique.free.fr/saint_thomas_d_aquin/oeuvres_completes.html

— (2008). *Truth.* Vol. 1 *Questions I-IX* (Translated from the definitive Leonine text by Robert W. Mulligan, S.J.). Eugene OR: Wipf & Stock.

Aristotle (1922; 1970). *On coming-to-be and passing-away (De generatione et corruptione): A revised text with introduction and commentary* (H. H. Joachim, Ed.). New York: Hildesheim.

— (1965; 1972). *De generatione animalium* (H.J. Drossaart Lulofs, Ed.). Oxford: Clarendon Press. Retrieved from: http://stephanus.tlg.uci.edu/Iris/Cite?0086:012:0

— (1924; 1970). *Metaphysics*, 2 vols (W.D. Ross, Ed.). Oxford: Clarendon Press. Retrieved from: http://stephanus.tlg.uci.edu/Iris/Cite?0086:025:0

— (1929). *The Physics,* 2 vols. (Philip H. Wicksteed & Francis M. Cornford, Trans.). London: William Heinemann Ltd; New York: G. P. Putnam's Sons.

— (1933). *The metaphysics,* books I-IX (Hugh Tredennick, Trans.). London: William Heinemann; New York: G. P. Putnam's sons.

— (1939). *On the Heavens*. Loeb Classical Library. Cambridge, MA: Harvard University Press.

— (1960). *Opera*. Berolini apud W. De Gruyter et socios.

— (1997). *The Politics of Aristotle* (Peter L. Phillips Simpson, Trans.). Chapel Hill, NC: University of North Carolina Press.

Arnauld, A. & Nicole, P. (1996; 1662). *Logic or the art of thinking* (J. Vance Buroker, Trans. and ed.). Cambridge: Cambridge University Press.

Arnim, J. (Ed.), (1964). *Stoicorum veterum fragmenta.* Volumen II: *Chrysippi fragmenta logica et physica.* Stuttgart: Teubner.

Augustine (1950a). *Against the Academics* (J. J. O'Meara, Trans.). Ancient Christian Writers series. Westminster, Md.: Newman.

— (1950b). *The city of God* (Marcus Dods, Trans.). New York: Modern Library.

— (1953). *Augustine: Earlier writings* (J. H. S. Burleigh, Trans.). Library of Christian Classics series. Philadelphia: Westminster.

Ayer, A. J. (1959). Introduction. In: A.J. Ayer, *Logical Positivism,* New York: Free Press, pp. 3-28.

— (1972). *Probability and evidence*. Cambridge: Cambridge University Press.

Bacon, F. (2000; 1620). *The new organon* (L. Jardine and M. Silverthorne, Trans.). Cambridge: Cambridge University Press

Bachelard, G. (1983). *La formation de l'esprit scientifique*. Paris: Vrin.

Backus, A. R., Schoffelen, J.-M., Szebényi, S., Hanslmayr, S. & Doeller, C. F. (2016). Hippocampal-prefrontal theta oscillations support memory integration. *Hippocampus*, 26(4), 450-457.

Balaguer, M. (1998). *Platonism and Anti-Platonism in Mathematics*. New York: Oxford US.

Bandettini, P. A. (2009). What's new in neuroimaging methods? *Annals of the New York Academy of Sciences,* 1156, 260-293.

Baron-Cohen, S. (1995). *Mindblindness: An essay on autism and theory of mind*. Cambridge, MA: MIT Press, 1995.

Batterman, R. & Rice, C. (2014). Minimal model explanations. *Philosophy of Science*, 81, 349-376.

Baudry, L. (1950). *La querelle des futurs contingents (Louvain, 1465-75).* Paris: Vrin.

Beierwaltes, W. (1972). Erleuchtung. *Historisches Wörterbuch der Philosophie.* Band 2: D-F (Herausgegeben von Joachim Ritter). Darmstadt: Wissenschaftliche Buchgesellschaft.

Beall, P. M., Moody, E. J., McIntosh, D. N., Hepburn, S. L. & Reed, C. L. (2008). Rapid facial reactions to emotional facial expressions in typically developing children and children with autism spectrum disorder. *Journal of Experimental Child Psychology,* 101, 206-223.

Bell, J. (1966). An epistle on the subject of the ethical and aesthetic beliefs of Herr Ludwig Wittgenstein. In: *Essays on Wittgenstein's Tractatus* (edited by Irving M. Copi, Robert W. Beard), London: Routledge, pp. 67-73.

Bell, J. S. (2004). *Speakable and unspeakable of Quantum Mechanics* (2nd ed.). Cambridge: Cambridge University Press.

Beller, M. (1999). *Quantum dialogue: The making of a revolution*. Chicago: University of Chicago Press, 1999.

Benacerraf, P. (1973). Mathematical truth. *The Journal of Philosophy*, 70(19), Seventieth Annual Meeting of the American Philosophical Association Eastern Division, (Nov. 8, 1973), pp. 661-679.

Bernstein, J. (1991). *Quantum profiles*. Princeton, NJ: Princeton University Press.

Beth, E. W. (1949). Towards an up-to-date Philosophy of the Natural Sciences. *Methodos,* 1, 178-85.

— (1961). Semantics of physical theories. In H. Freudenthal (Ed.), *The concept and the role of the model in mathematics and natural and social sciences*, Dordrecht: Reidel, pp. 48–51.

Bigaj, T. (2017). Are field quanta real objects? Some remarks on the ontology of quantum field theory? *Studies in History and Philosophy of Modern Physics,* xxx, 1-13.

Birkhoff, G. & von Neumann, J. (1936). The logic of quantum mechanics. *Annals of Mathematics*, 2nd Ser. 37(4), 823–843.

Birmingham, E. & Kingstone, A. (2009). Human social attention: a new look at last, present and future investigations. *Annals of the New York Academy of Sciences,* 1156, 118-140.

Bitbol, M. (1999). *Mécanique quantique : Une introduction philosophique.* Paris: Champs-Flammarion.

— (2004). The problem of other minds: A debate between Schrödinger and Carnap. *Phenomenology and the Cognitive Sciences,* 3(1), 115-123.

— (2007). Schrödinger against particles and quantum jumps. In J. Evans & A. S. Thorndike, *Quantum mechanics at the crossroads: New perspectives from History, Philosophy and Physics.* Berlin: Springer.

— (2009). Lecture at a conference titled "Science and Spirituality," Cortona, Italy, June 2009.

Black, M. (1964). *A Companion to Wittgenstein's Tractatus*. Ithaca: Cornell University Press.

Blackmore, J. (1972). *Ernst Mach. His work, life and influence.* Berkeley, Los Angeles, London:

— (1999). Boltzmann and epistemology. *Synthese* 119: pp. 157-189.

Blackwell, K. (1981). The early Wittgenstein and the middle Russell. In: Irving Block, *Perspectives on the Philosophy of Wittgenstein.* Oxford: Blackwell, pp. 1-30.

Blanchette, P. A. (2012). *Frege's conception of Logic*. New York: Oxford University Press.

Bobzien, S. (1997). The Stoics on hypotheses and hypothetical arguments. *Phronesis*, 42(3): 299-312.

— (1998). *Determinism and freedom in Stoic Philosophy*. Oxford: Clarendon Press.

Bocheński, J. M. (1959). *A precis of Mathematical Logic* (Translated by Otto Bird). Dordrecht, Holland: D. Reidel.

— (1961). *A History of Formal Logic* (edited and translated by Ivo Thomas). Notre Dame, IN: University of Notre Dame Press.

Boh, I. (1993). *Epistemic Logic in the Later Middle Ages.* London/New York: Routledge.

— (1997). Consequences. In: *The Cambridge History of Later Medieval Philosophy. From the Rediscovery of Aristotle to the Disintegration of Scholasticism, 1100-1600* (Edited by Norman Kretzmann, Anthony Kenny, Jan Pinborg, and Eleonore Stump). Cambridge: The University Press.

Bohm, D. (1957). *Causality and chance in modern Physics*. London: Routledge.

Bohr, N. (1913). On the constitution of atoms and molecules. *Philosophical Magazine,* Series 6, 26, 1-25, 476-502, and 857-875.

— (1958). *Atomic Physics and Human Knowledge*. New York: John Wiley & Sons.

— (1963). *Essays 1958-1962 on Atomic Physics and human knowledge*. New York, London: Interscience Publishers.

Bokulich, A. (2008). Paul Dirac and the Einstein-Bohr Debate. *Perspectives on Science*, 16(2), 103-114.

Boltzmann, L. (1905). *Populäre Schriften*. Leipzig: Johann Ambrosius Barth.

Bolzano, B. (1973; 1837). *Theory of Science* (Edited, with an introduction, by Jan Berg; Translated by Burnham Terrell). Dordrecht/Boston: Reidel.

— (1985; 1837). *Wissenschaftslehre* (Herausgegeben von Jan Berg). Stuttgart-Bad Cannstatt: Friedrich Frommann (Günther Holzboog).

Boole, G. (1854). *An investigation of the laws of thought, on which are founded the mathematical theories of Logic and probabilities.* London: Walton and Maberley.

Born, M. (1926). Zur Quantenmechanik der Stoßvorgänge. *Zeitschrift für Physik*, 37(12), 863-867.

Bradley, R. (1992). *The nature of all being: A study of Wittgenstein's modal atomism*. Cambridge, MA: Oxford University Press.

Brandhorst, K. (2010). *Descartes' Meditations on First Philosophy: An Edinburgh Philosophical Guide*. Edinburgh: Edinburgh University Press.

Brentano, F. (1874; 1995). *Psychology from an empirical standpoint* (Reprinted with an introduction by P. Simons). London: Routledge.

— (1967). *Die Psychologie des Aristoteles, insbesondere seine Lehre vom ΝΟΥΣ ΠΟΙΗΤΙΚΟΣ.* Nebst einer Beilage über das Wirken des Aristotelischen Gottes. Darmstadt: Wissenschaftliche Buchgesellschaft.

— (1968). *Kategorienlehre.* Hamburg: Felix Meiner.

— (2009; 1930). *The true and the evident* (edited by Oskar Kraus and Roderick M. Chisholm; translated by Roderick M. Chisholm, Ilse Politzer and Kurt R. Fischer). London: Routledge.

Bromberg, J. (1976). The concept of particle creation before and after Quantum Mechanics. *Historical Studies in the Physical Sciences,* 7, 186-187.

Brown, J. (1999). *Minds, Machines and the Multiverse: The Quest for the Quantum Computer*. New York: Touchstone.

Buchdall, G. (1969). *Metaphysics and the Philosophy of Science*. Oxford: Basil Blackwell.

Buridan, J. (2015). *Treatise on consequences* (Stephen Read, Translator). New York: Fordham University Press.

Burqess, A., & Burqess, J. P. (2011). *Truth*. Princeton, NJ: Princeton University Press.

Butterfield, J. & Fleming, G. N. (1995). Quantum Theory and the mind. *Proceedings of the Aristotelian Society, Supplementary Volumes,* 69, 113-173.

Calcidius (1975). *Timaeus a Calcidio translatus commentarioque instructus* (Jan Hendrik Waszink, Ed.). Leiden: Brill.

Carabine, D. (2000). *John Scottus Eriugena*. New York: Oxford US.

Carnap, R. (1937). *The logical structure of language* (Trans. A. Smeaton). London: Kegan Paul.

— (1947). *Meaning and necessity: A study in Semantics and Modal Logic*. Chicago: The University Press.

— (1950). Empiricism, semantics and ontology. *Revue Internationale de Philosophie,* 4, 20–40. Reprinted in R. Carnap (1956), *Meaning and necessity: A study in Semantic and Modal Logic*. Chicago: University of Chicago Press.

Carson, C. (2010). *Heisenberg in the atomic age*. Cambridge: Cambridge University Press.

Cartwright, N. (1983). *How the laws of physics lie*. Oxford: Oxford University Press.

— (1999). Models and the limits of theory: Quantum Hamiltonians and the BCS models of superconductivity. In M. S. Morgan & M. Morrison (Eds.), *Models as mediators: Perspectives on natural and social science*, Cambridge: Cambridge University Press, pp. 241-281.

Casari, C., Freeman, S. & Paparella, T. (2006). Joint attention and symbolic play in young children with autism: a randomized controlled intervention study. *Journal of Child Psychology and Psychiatry,* 47(6), 611-620.

Caton, R. (1875). Electrical currents of the brain. *British Medical Journal*, 2 (765): 278.

Chakravartty, A. (2007). *A Metaphysics for Scientific Realism: Knowing the unobservable.* Cambridge: Cambridge University Press.

Chalmers, D. (1996). *The conscious mind: In search of a fundamental theory*. Oxford: Oxford University Press.

Chisholm, R. M. (1966). Brentano's theory of correct and incorrect emotion. *Revue Internationale de Philosophie*, 78: pp. 395–415.

— (1973). *The problem of the criterion*. The Aquinas Lecture, 1973. Milwaukee: Marquette University Press.

— (1976a). Brentano's non-propositional Theory of Judgement. *Midwest Studies in Philosophy* 1: pp. 91-95.

— (1976b). *Person and object. A Metaphysical Study*. La Salle, IL: Open Court Publishing Company.

— (1982). *Brentano and Meinong studies*. Amsterdam: Rodopi.

— (1986). *Brentano and intrinsic value*. Cambridge: Cambridge University Press.

Chopra, D. & Kafatos, M. (2015). *You are the universe: Discovering your cosmic self and why it matters*. Random House Audio.

Cicero, M.T. (1949). *On Invention; The Best Kind of Orator; Topics* (Translated by H. M. Hubbell). Loeb Classical Library. Cambridge, MA: Harvard University Press.

— (1975). *De Divinatione; De Fato; Timaeus* (edited by Remo Giomini). Leipzig: Teubner.

— (1967). *De Natura Deorum; Academica* (Translated by H. Rackham). Cambridge MA: Harvard University Press.

Clemens Alexandrinus (1936). *Die Teppiche (Stromateis),* (C.A. Overbeck, Trans; F.C. Camillo & L. Früchtel, Eds.). Basel: Schwabe.

Coates, J. (1996). *The claims of common sense: Moore, Wittgenstein, Keynes and the social sciences.* Cambridge: The University Press.

Cohen, M. (1974). Truth-tables and truth. *Analysis,* 35(1): pp. 1-7.

Coffey, P. (1917). *Epistemology or the Theory of Knowledge: An introduction to general metaphysics,* 2 Vols. London: Longmans, Green and Co.

Colombo, M., Hartmann, S. & van Iersel, R. (2015). Models, mechanisms, and coherence. *British Journal for the Philosophy of Science,* 66(1), 181-212.

Colyvan, M. (1998). In defence of indispensability. *Philosophia Mathematica*, 6(1): 39–62.

— (1999). Confirmation theory and indispensability. *Philosophical Studies*, 96(1): 1–19.

— (2001). *The indispensability of Mathematics*. New York: Oxford University Press.

Copleston, F. C. (1993). *A History of Philosophy.* Volume II: *Medieval Philosophy.* New York: Image Books, Doubleday.

Couturat, L. (1901). *La Logique de Leibniz: d'après des documents inédits*. Paris: F. Alcan.

Craig, W. L. (1980). *The cosmological argument from Plato to Leibniz*. London: MacMillan.

Crary, A. (Ed.), (2007). *Wittgenstein and the moral life: Essays in honor of Cora Diamond*. Cambridge, MA: The MIT Press.

Crary, A. & Read, R. (Eds), (2000). *The new Wittgenstein*. London: Routledge.

Cropper, W. H. (2001). *Great physicists: The life and times of leading physicists from Galileo to Hawking*. New York: Oxford University Press.

Cunliffe, R.J. (1977). *Lexicon of the Homeric dialect*. University of Oklahoma Press. Available at: Thesaurus Linguae Graecae.

Cushing, J. T. (1994). *Quantum mechanics: Historical contingency and the Copenhagen hegemony*. Chicago: University of Chicago Press.

Davidson, D. (1967). Causal relations. *Journal of Philosophy* 64, pp. 691-703.

— (1973-74). On the very idea of a conceptual scheme. *Proceedings and Addresses of the American Philosophical Association* 47, pp. 5-20.

— (2005a). *Truth, language and history*. Oxford: Clarendon Press.

— (2005b). *Truth and predication*. Cambridge, MA: Harvard University Press.

D'Ancona, C. & Serra, G. (Eds.), (2002). Alexander On the Principles of the Universe, On Providence, Against Galen on Motion, and On Specific Differences. In: *Aristotele et Alessandro di Afrodisia nella tradizione araba*. Padova: Il Poligrafo.

Dear, P. (2006). *The intelligibility of nature: How science makes sense of the world*. Chicago: University of Chicago Press.

De Broglie, L. (1951). Un nouveau venu en physique : le champ nucléaire. *Revue de Métaphysique et de Morale,* 56 (2):117 – 127.

— (1956). *Nouvelles perspectives en microphysique.* Paris: Albin Michel.

Deleuze, G. (1988). *Foucault* (Seàn Hand, Trans.). Minneapolis: University of Minnesota Press.

— (1994). *Difference and repetition* (P. Patton, Trans.). New York: Columbia University Press.

Descartes, R. (1908; 1628). Regulae ad directionem ingenii. In: *Œuvres de Descartes* X (Ed. Ch. Adam et P. Tannery). Paris: Léopold Cerf.

— (2000). *Philosophical essays and correspondence* (Edited, with Introduction by Roger Ariew). Indianapolis/Cambridge: Hackett.

— (2006; 1641). *Meditations, Objections, and Replies* (Roger Ariew and Donald Cress, Ed. and Trans). Indianapolis: Hackett.

Dejerine, J. (1891). Sur un cas de cécité verbale avec agraphie, suivi d'autopsie. *Mémoires de la Société de Biologie,* 3, 197-201.

D'Espagnat, B. (1991). Meaning and being in contemporary physics. In B. J. Hiley & F. D. Peat, *Quantum implications: Essays in honour of David Bohm*. London: Routledge, pp. 151-168.

— (2003). *Veiled reality: An analysis of present-day quantum mechanical concepts.* Boulder, CO: Westview Press.

De Morgan, A. (1839-44). On the foundation of Algebra. *Transactions of the Cambridge Philosophical Society,* 7, pp. 173-87, 287-300; 8, pp. 139-42, 241-54.

— (1864). On the syllogism, no. IV, and on the logic of relations. *Transactions of the Cambridge Philosophical Society,* 10, 331–358

De Pellegrin, E. (Ed.), (2011). *Interactive Wittgenstein. Essays in the memory of Georg Henrik von Wright.* Dordrecht: Springer.

Derrida, J. (1987). *The postcard: From Socrates to Freud and beyond* (A. Bass, Trans.). Chicago: Chicago University Press.

Destouches, J. L. (1962). Théories prévisionnelles et théories réalistes en microphysique. *Revue de Métaphysique et de Morale,* 67(2), p.174-206.

Deutsch, D. (1985). Quantum theory, the Church-Turing principle and the universal quantum computer. *Proceedings of the Royal Society* A, 400(1818), 97–117.

— (1998). *The fabric of reality: Towards a theory of everything*. London: Penguin.

Dewey, J. (1929). *Experience and Nature.* London: George Allen & Unwin.

— (2011; 1916). *Demokratie und Erziehung: Eine Einleitung in die philosophische Pädagogik* (5. Auflage; Erich Hylla, Übers.; Jürgen Oelkers, Hrsg.). Weinheim und Basel: Beltz.

DeWitt, B. S. (1970). Quantum mechanics and reality. *Physics Today*, 23(9), 30-35.

Diamond, C. (1991). *The realistic spirit: Wittgenstein, philosophy and the mind.* Cambridge, MA: MIT Press.

— (2000). Ethics, imagination and the method of Wittgenstein's *Tractatus.* In: Alice Crary and Rupert Read, *The New Wittgenstein.* London: Routledge.

Diels, H. (1879). *Doxographi Graeci.* Berlin: G. Reimer.

Diogenes Laertius (1921a). *Leben und Meinungen Berühmter Philosophen,* 1. Band; Buch I-VI (Otto Apelt, Übers.). Leipzig: Felix Meiner.

— (1921b). *Leben und Meinungen Berühmter Philosophen,* 2. Band; Buch VII-X (Otto Apelt, Übers.). Leipzig: Felix Meiner.

Dipert, R. R. (1998). Logic in the 19th Century. In: *Routledge Encyclopedia of Philosophy,* Vol. 5 (edited by Edward Craig). London and New York: Routledge, pp. 722-729.

Dirac, P. A. M. (1925). The fundamental equations of quantum mechanics. *Proceedings of the Royal Society of London* A, 109(752), 642-653.

— (1927). The quantum theory of the emission and absorption of radiation. *Proceedings of the Royal Society of London* A, 114(767), 243-267.

— (1929). Quantum mechanics of many-electron systems. *Proceedings of the Royal Society of London* A, 132(792), 714-733.

— (1930a). A theory of electrons and protons. *Proceedings of the Royal Society of London* A, 126(181), 360-365.

— (1930b). The proton. *Nature,* 126(3181), 605-606.

— (1933a). The Lagrangian in Quantum Mechanics. *Physikalische Zeitschrift der Sowjetunion*, 3, 64–72.

— (1933b). Theory of electrons and positrons. *Nobel Lecture.*

— (1934a). Discussion of the infinite distribution of electrons in the theory of the positron. *Proceedings of Cambridge Philosophical Society*, 30(2): 150–163.

— (1934b). Théorie du Positron. Rapport du 7e Conseil Solvay de Physique, Structure et Propriétés des Noyaux Atomiques (pp. 203-212). In J. Schwinger (Ed.; 1958), *Selected Papers on Quantum Electrodynamics* (pp. 82-91). New York: Dover.

— (1939). The relation between mathematics and physics. *Proceedings of the Royal Society of Edinburgh,* 59, 122-129.

— (1951). A new classical theory of electrons. *Proceedings of the Royal Society of London* A, 209 (1098): 291-296.

— (1964). Hamiltonian methods and quantum mechanics. *Proceedings of the Royal Irish Academy Section* A, A63: 49–59 (Larmor Lecture, 30 Sept. 1963).

— (1967). *The principles of quantum mechanics* (4th ed.). Oxford: Clarendon Press.

— (1977a). Recollections of an exciting era. In C. Weiner (Ed.), *History of Twentieth Century Physics: Proceedings of the School of Physics "Enrico Fermi"* (pp. 109-146). New York: Academic Press.

— (1977b). *Directions in physics. Lectures delivered during a visit to Australia and New Zealand August/September 1975* (H. Hora & J. R. Shepanski, Eds.). New York: Wiley.

— (1982). The early years of relativity. In G. Holton and J. Elkana, *Albert Einstein: Historical and cultural perspectives. The centennial symposium in Jerusalem.* Princeton: Princeton University Press, pp. 79-90.

— (1983). The origin of quantum field theory. Based on a Fermilab Symposium. In L. M. Brown and L. Hoddeson, *The birth of particle physics* (pp. 39-55). Cambridge: Cambridge University Press.

Dodson, G. E. (2017). *Free will, Neuroethics, Psychology and Theology.* Wilmington DE: Vernon Press.

Drake, W. E. (1968). Clinical and pathological findings in a child with developmental learning disability. *Journal of Learning Disabilities,* 1(9), 486-502.

Dudley, J. (2011). *Aristotle's concept of chance: Accidents, cause, necessity, and determinism*. Albany: State University of New York Press.

Duhem, P. (1991). *The aim and structure of physical theory*. Princeton, N.J.: Princeton University Press.

Dummett, M. (1959). Wittgenstein's Philosophy of Mathematics. *Philosophical Review* 68, 324.

— (1981). Frege and Wittgenstein. In: Irving Block, *Perspectives on the Philosophy of Wittgenstein*. Oxford: Blackwell, pp. 31-42.

— (1991). *Frege and other philosophers*. Oxford: Clarendon Press.

— (2004). *Truth and the past*. New York: Columbia University Press.

Duns Scotus, J. (1997). *Questions on the Metaphysics of Aristotle.* Volume: 1 (Translated by Girard J. Etzkorn and Allan B. Wolter). St. Bonaventure, NY: Franciscan Institute.

Earman, J. (1986). *A primer on determinism*. Dordrecht: D. Reidel.

Earman, J., & Salmon, W. C. (1999). The confirmation of scientific hypotheses. In: *Introduction to the Philosophy of Science. A text by members of the Department of the History and Philosophy of Science of the University of Pittsburgh* (Merrilee H. Salmon, John Earman, Clark Glymour et al., Ed.). Indianapolis: Hackett.

Eddington, A. S. (1920). *Space, time, and gravitation: An outline of the general relativity theory*. Cambridge: At the University Press.

— (1923). *The mathematical theory of relativity*. Cambridge: At the University Press.

— (1939). *The Philosophy of physical science.* Cambridge: At the University Press.

Einstein, Albert (1905). Über einen die Erzeugung und Verwandlung des Lichtes betreffenden heuristischen Gesichtspunkt. *Annalen der Physik*, 17 (6): 132–148.

— (1917). The quantum theory of radiation. *Physikalische Zeitschrift,* 18: 121-128.

Einstein, A., Podolsky, B. & Rosen, N. (1935). Can quantum-mechanical description of physical reality be considered complete? *Physical Review*, 47, 777-80.

Epictetus (1904). *Discourses of Epictetus* (George Long, Trans.). New York: D. Appleton and Company.

Epicurus (interpreted by I.G. Schneider), (1813). *Physica et Meteorologica.* Lipsiae: Sumtibus F.C.G. Vogelii.

— (2010), [1887]. Epicuri ad Herodotum epistula prima de rerum natura. In: H. Usener (Ed.), *Epicurea*, Cambridge: Cambridge University Press, pp. 1-56.

Everett, H. III (1956). *Theory of the universal wavefunction.* Thesis, Princeton University.

Faraday, M. (1855). On lines of magnetic force. In M. Faraday, *Experimental Researches in Electricity,* Vol. III: Series 19-29 [Phil. trans., 1846-52]. London: Taylor and Francis, pp. 402-443.

Farrell, J. (2007). Lucretian architecture: the structure and argument of the *De rerum natura*. In: S. Gillespie & P. R. Hardie (eds.), *The Cambridge Companion to Lucretius*. Cambridge: Cambridge University Press.

Farrington, B. (1965). Form and purpose in the *De Rerum Natura*. In: D. R. Dudley (Ed.), *Lucretius*, New York: Basic Books, pp. 19-34.

Feigl, H. (1950a). Existential hypotheses. Realistic versus phenomenalistic interpretations. *Philosophy of Science,* 17(1), 35-62.

— (1950b). Logical reconstruction, realism and pure semiotic. *Philosophy of Science*, 17(2), 186-195.

— (1974/1981). No pot of message. In *Inquiries and Provocations: Selected Writings*, *1929–1974* (R. S. Cohen, Ed.), Dordrecht: Reidel, pp. 1-20.

Ferguson, C. D. (2011). *Nuclear energy: What everyone needs to know*. New York: Oxford University Press.

Fermi, E. (1932). Quantum theory of radiation. *Reviews of Modern Physics,* 4, 87-132.

Feyerabend, P. K. (1978). *Der wissenschaftstheoretische Realismus und die Autorität der Wissenschaften* (Ausgewählte Schriften, Band 1). Braunschweig, Wiesbaden: Vieweg.

— (1981). *Probleme des Empirismus. Schriften zur Theorie der Erklärung, der Quantentheorie und der Wissenschaftsgeschichte* (Ausgewählte Schriften, Band 2). Braunschweig, Wiesbaden: Vieweg.

Finster, F. (2011). A formulation of Quantum Field Theory realizing a sea of interacting Dirac particles. *Letters in Mathematical Physics*, 97(2), 165-183.

Fischer, K. (1920). *Gottfried Wilhelm Leibniz: Leben, Werke und Lehre* (5th ed.). Heidelberg: Carl Winters.

Fogelin, R. J. (2009). *Taking Wittgenstein at his word: A textual study*. Princeton, NJ: Princeton University Press.

Foucault, M. (1980). *Power / Knowledge: Selected interviews and other writings* (Colin Gordon, Ed.). New York: Pantheon.

— (1988). Technologies of the self. In: *Technologies of the self: A seminar with Michel Foucault* (Luther H. Martin, Ed.; Huck Gutman, Ed.; Patrick H. Hutton, Ed.). Amherst, MA: University of Massachusetts Press, pp.16-49.

— (1989). *The birth of the clinic*. London: Routledge.

— (1990). *The history of sexuality, Volume I: An Introduction* (R. Hurley, Trans.). New York: Vintage. Originally published as *Histoire de la sexualité, vol. I : La Volonté de savoir*, Paris: Gallimard, 1976.

— (1995). *Discipline and punish: The birth of prison* (2nd Ed.; Alan Sheridan, Trans.). New York: Vintage Books.

— (2002). *The order of things. An archaeology of the human sciences.* London: Routledge.

— (2007). Subjectivity and Truth. In: *The Politics of Truth* (Lysa Hochroth & Catherine Porter; Trans; Sylvere Lotringer, Ed.), Los Angeles: Semiotext(e), pp. 147–168.

Franklin, J. (2015). *The science of conjecture. Evidence and probability before Pascal* (3rd ed.). Baltimore: John Hopkins University Press.

Frede, D. (1982). The dramatization of determinism: Alexander of Aphrodisias' *De Fato. Phronesis*, 27, pp. 276-98.

Frede, M. (1974). *Die Stoische Logik.* Göttingen: Vandenhoeck und Ruprecht.

— (1980). The original notion of cause. In: *Doubt and Dogmatism: Studies in Hellenistic Epistemology* (edited by Malcolm Schofield, Myles Burnyeat, and Jonathan Barnes), Oxford: Clarendon, pp. 217-249.

Frege, G. (1879). *Begriffsschrift, eine der arithmetischen nachgebildeten Formelsprache des reinen Denkens*. Halle: L. Nebert.

— (1882). Über den Zweck der Begriffsschrift. *Jenaische Zeitschrift für Naturwissenschaft*, Suppl. B. 16: pp. 1–10.

— (1906). Über die Grundlagen der Geometrie II. *Jahresbericht der Deutschen Mathematischer Vereinigung*, 15: 293–309, 377–403, 423–30

— (1918). Der Gedanke. Eine logische Untersuchung. In: *Beiträge zur Philosophie des deutschen Idealismus 1*: pp. 58-77. Translated into English as "The thought: a logical enquiry" by A. M. & M. Quinton (1956), *Mind,* 65(259): 289-311.

— (1948). Sense and reference. *The Philosophical Review* 57(3): pp. 209-230.

— (2013; 1884). *Basic laws of Arithmetic* (Translated by Philip A. Ebert and Marcus Rossberg). Oxford University Press.

Freudenthal, H. (Ed.), (1961). *The concept and the role of the model in mathematics and natural and social sciences*. Dordrecht: Reidel.

Frey, G. (1961). Symbolische und ikonische Modelle. In H. Freudenthal (Ed.), *The concept and the role of the model in mathematics and natural and social sciences*, Dordrecht: Reidel, pp. 89–97.

Friebe, C., Kuhlmann, M., Lyre, H., Näger, P., Passon, O. & Stöckler, M. (2015). *Philosophie der Quantenphysik. Einführung und Diskussion der zentralen Begriffe und Problemstellungen der Quantentheorie für Physiker und Philosophen.* Berlin: Springer Spektrum.

Furley, D. J. (1987). *The Greek Cosmologists*. Volume 1: *The formation of the Atomic Theory and its earliest critics*. Cambridge: Cambridge University Press.

Furry, W. H. & Oppenheimer, J. R. (1934). On the theory of electron and positive. *Physical Review*, 45(4), 245-262.

Galen, C. (1874). *De placitis Hippocratis et Platonis* (Iwanus Mueller, Ed.). Lipsiae: Teubner.

— (1904). *De causis continentibus libellus* (N. Reginus, Trans.; C. Kalbfleisch, Ed.). Marburg.

— (1998). *On antecedent causes* (R.J. Hankinson, Ed.). Cambridge: Cambridge University Press.

— (2001). *De plenitudine* (C. Otte, Ed.). Wiesbaden: Reichert.

Gellius, A. (1927). *The Attic Nights of Aulus Gellius* (John Carew Rolfe, Trans.). Loeb Classical Library. Cambridge, MA: Harvard University Press.

Gelfert, A. (2016). Exploratory uses of scientific models. In *How to do Science with models: A philosophical primer*. Berlin: Springer, pp. 71-99

— (2018). Models in search of targets: exploratory modelling and the case of Turing patterns. In *Philosophy of Science* (A. Christian, D. Hommen, N. Retzlaff & G. Schurz, Eds.). Berlin: Springer 2018, pp. 245-271.

Genequand, C. (2001). *Alexander of Aphrodisias: On the Cosmos*. Leiden: Brill.

Gerber, J. (1969). Geschichte der Wellenmechanik. *Archive for History of Exact Sciences,* 5(5), 349-416.

Gibson, J. J. (1986). *The Ecological approach to visual perception*. Hillsdale, NJ: Lawrence Erlbaum Associates.

Giere, R. (1999). *Science without laws*. Chicago: University of Chicago Press.

Gilbert, N. W. (1963). *Renaissance concepts of method.* New York: Columbia University Press.

Giles, J. (1991). Bodily theory and theory of the body. *Philosophy,* 66(257), 339-347.

Gilson, Étienne (1948). *History of Philosophy and philosophical education*. Milwaukee: Marquette University Press.

— (1984). *From Aristotle to Darwin and back again: A journey in final causality, species and evolution* (Translated by John Lyon). Notre Dame, IN: University of Notre Dame.

Goodman, N. (1983). *Fact, fiction and forecast* (2nd Ed.). Cambridge, MA: Harvard University Press.

Gödel, K. (1947). What is Cantor's Continuum Problem? *The American Mathematical Monthly*, 54(9), pp. 515-525. Reprinted in Benacerraf, P. & Putnam, H. (1983), *Philosophy of mathematics: selected readings*, Cambridge: Cambridge University Press, pp. 470-485.

— (1951). Some basic theorems on the foundations of Mathematics and their implications. In Gödel's: *Collected Works*, Volume III: *Unpublished essays and lectures*, Oxford: Oxford University Press, 1995, pp. 304-323.

Grattan-Guinness, I. (1977). *Dear Russell-Dear Jourdain: A commentary on Russell's Logic, based on his correspondence with Philip Jourdain.* London: Duckworth.

— (2000). *The search for mathematical roots, 1870-1940: logics, set theories and the foundations of mathematics from Cantor through Russell to Gödel*. Princeton and Oxford: Princeton University Press.

Grattan-Guinness, I., Cooke, R., Corry, L., Crépel P. & Guicciardini, N. (Eds) (2005). *Landmark writings in Western Mathematics, 1640-1940.* Amsterdam: Elsevier.

Grover, M. (2010). Quantum computation and schizophrenia. *International Journal of Computer Science & Engineering Technology,* 1(3), 52-54.

Habib, M. (2000). The neurological basis of developmental dyslexia. An overview and working hypothesis. *Brain,* 123, 2373-2399.

Hacker, P. (1981). The rise and fall of the Picture Theory. In: *Perspectives on the Philosophy of Wittgenstein* (edited by Irving Block). Oxford: Blackwell, pp. 85-109.

— (2001a). *Wittgenstein: Connections and controversies*. Oxford: Clarendon Press.

— (2001b). Ludwig Wittgenstein (1889–1951). In: *A Companion to Analytical Philosophy* (edited by A.P. Martinich and David Sosa), Malden MA, Oxford: Blackwell, pp. 68-93.

Hacking, I. (1983). *Representing and intervening: Introductory topics in the philosophy of natural science*. Cambridge: Cambridge University Press.

Hale, R. (1987). *Abstract objects*. Oxford: Basil Blackwell.

Hankinson, R. J. (1999). Explanation and causation. In: *The Cambridge History of Hellenistic Philosophy* (Keimpe Algra; Jonathan Barnes; Jaap Mansfeld, Malcolm Schofield, Eds), Cambridge: Cambridge University Press, pp. 479-512.

Hanna, R. (2001). *Kant and the foundations of Analytic Philosophy*. New York: Oxford University Press.

Hanson, N. R. (1958). *Patterns of discovery: An inquiry into the conceptual foundations of science.* Cambridge: Cambridge University Press.

— (1961). Discovering the Positron (I). *The British Journal for the Philosophy of Science,* 12(47), 194-214.

— (1962). Discovering the Positron (II). *The British Journal for the Philosophy of Science*, 12(48), 299-313.

— (1963). *The concept of the positron: a philosophical analysis*. Cambridge: Cambridge University Press.

— (1969). *Perception and discovery: An introduction to scientific inquiry* (W. C. Humphreys, Ed.). San Francisco: Freeman Cooper.

Happé, F. (2003). Theory of mind and the self. *Annals of the New York Academy of Sciences,* 1001, 134-144.

Hartmann, S. (1999). Models and stories in Hadron Physics. In M. S. Morgan & M. Morrison (Eds.), *Models as mediators: Perspectives on natural and social science*, Cambridge: Cambridge University Press, pp. 326-346.

Hartshorne, C. & Weiss, P. (1935). *Collected papers of Charles Sanders Peirce*. Vol. VI: *Scientific Metaphysics*. Cambridge: Harvard University Press.

Heisenberg, W. (1925). Über quantentheoretische Umdeutung kinematischer und mechanischer Beziehungen. *Zeitschrift für Physik,* 33, 879-893.

— (1927). Über den anschaulichen Inhalt der quantentheoretischen Kinematik und Mechanik. *Zeitschrift für Physik*, 43(3-4), 172-198.

— (1958). The representation of Nature in contemporary physics. *Daedalus,* 87, 95-108.

— (1990). *Physics and philosophy.* London: Penguin.

Heisenberg, W. & Euler, H. (1936). Folgerungen aus der Diracschen Theorie des Positrons. *Zeitschrift für Physik*, 98(11-12), 714–32.

Hempel, C. G. (1950). A note on semantic realism. *Philosophy of Science*, 17(2), 169-173.

— (1958). The Theoretician's Dilemma: A study in the logic of theory construction. In H. Feigl, M. Seriven, and G. Maxwell (Eds.), *Minnesota Studies in the Philosophy of Science*, vol. ii. Minneapolis: University of Minnesota Press, pp. 37-98.

Herbert, N. (1985). *Quantum reality. Beyond the new physics: An excursion into metaphysics and the meaning of reality.* London: Rider.

Hertz, H. (1892). Über den Durchgang der Kathodenstrahlen durch dünnen Metallschichten. *Annalen der Physik,* 281(1), 28-32.

— (1894). *Die Prinzipien der Mechanik.* Gesammelte Werke, Band III. Leipzig: Johan Ambrosius Barth (Arthur Meiner).

— (1956). *The principles of the mechanics.* New York: Dover.

Hilbert, D. (1928). *Die Grundlagen der Mathematik. Mit Zusätzen von H. Weyl und P. Bernays.* Wiesbaden: Springer.

— (1987; 1903). *Grundlagen der Geometrie. Mit Supplementen von Prof. Dr. Paul Bernays* (13. Auflage). Stuttgart: Teubner.

Hilbert, D., & Cohn-Vossen, S. (1996). *Anschauliche Geometrie* (2. Auflage). Heidelberg: Springer.

Hiley, B. J. & Peat, F. D. (1991). *Quantum implications: Essays in honour of David Bohm.* London: Routledge.

Hintikka, J. (2003). Ernst Mach at the crossroads of twentieth-century Philosophy: 1905, Publication of Mach's *Erkenntnis und Irrtum*. In: *Future Pasts: The Analytic Tradition in Twentieth-Century Philosophy* (Edited by Juliet Floyd and Sanford Shieh). New York: Oxford University Press, pp. 81-100.

Hintikka, J. & Remes, U. (1974). *The method of Analysis: Its geometrical origin and its general significance.* Dordrecht: D. Reidel.

Hodgson, D. (1991). *The mind matters: Consciousness and choice in a quantum world.* Oxford: Clarendon Press.

Homer (2009). *The Iliad* (A. S. Kline, Trans.). Poetry in Translation.

Höflrechner, W. (Hrsg.), (1994). *Ludwig Boltzmann: Leben und Briefe*. Publikationen aus dem Archiv der Universität Graz, Band 30. Graz: Universitäts-Verlag.

Hume, D. (2000). *A treatise of human nature* (D. F. Norton and M. J. Norton, Eds). Oxford: Oxford University Press, 2000.

— (2007). *An enquiry concerning human understanding*. Oxford: Oxford University Press.

Humphrey, N. (2011). *Soul dust: The magic of consciousness*. Princeton, NJ: Princeton University Press.

Husserl, E. (1900). *Logische Untersuchungen. Erster Teil: Prolegomena zur reinen Logik.* Leipzig: Verlag von Veit und Comp.

— (1970). *Logical investigations,* 2 Volumes (J.N. Findlay, Trans.). London: Routledge and Kegan Paul.

— (1999; 1913). The *idea of Phenomenology: A translation of Die Idee der Phänomenologie* (Translation and Introduction be Lee Hardy). Dordrecht: Kluwer.

Institut international de physique Solvay (1928). *Electrons et photons : Rapports et discussions du cinquième Conseil de physique tenu à Bruxelles du 24 au 29 octobre 1927*. Paris : Gauthier-Villars et cie.

— (1934). *Structure et propriétés des noyaux atomiques. Rapports et discussions du septième Conseil de physique tenu à Bruxelles du 22 au 29 octobre 1933*. Paris: Gauthier-Villars.

Irby-Massie, G. L. & Keyser, P. T. (2002). *Greek Science of the Hellenistic Era: A sourcebook*. New York: Routledge.

James, W. (1897). The Dilemma of determinism. In: *The Will to Believe*. New York.

Joachim, H. H. (1957). *Descartes's rules for the direction of the mind. Reconstructed from notes taken by his pupils* (Edited by Errol E. Harris; Foreword by Sir David Ross). London: George Allen & Unwin.

Jacob, M. (1998). Antimatter. In A. Pais, M. Jacob, D. I. Olive & M. F. Atiyah, *Paul Dirac: The man and his work* (Edited by P. Goddard). Cambridge: Cambridge University Press, pp. 46-87.

Johansen, K. F. (1998). *A History of Ancient Philosophy: From the Beginnings to Augustine.* London: Routledge.

Johnson, R. J. (2017). *The Deleuze-Lucretius encounter*. Edinburgh: Edinburgh University Press.

Jolley, N. (2005). *Leibniz.* London: Routledge.

Kant, I. (1992; 1800). Jäsche-Logik. In: *Lectures on Logic* (J. M. Young, Trans). Cambridge: Cambridge University Press, pp. 517-640.

Karakostas, V. (2012). Realism and objectivism in Quantum Mechanics. *Journal for General Philosophy of Science*, 43, 45-65.

— (2015). Truth as contextual correspondence in Quantum Mechanics. *Philosophia Scientiae,* 19, 199-212.

Katz, J. (1981). *Language and other abstract objects*. Totowa, NJ: Rowman and Littlefield.

— (1995). What mathematical knowledge could be. *Mind*, 104: 491- 522.

Kenny, A. (1973). *Wittgenstein*. London: Penguin.

— (1974). *Wittgenstein* (vertaald door Alice ter Meulen). Utrecht, Antwerpen: Het Spectrum.

— (1984). Wittgenstein's early philosophy of mind. In: Anthony Kenny, *The Legacy of Wittgenstein*, Oxford: Blackwell.

— (2007). *Philosophy in the modern world*. New York: Oxford University Press.

— (2011). Whose Naturalism? Which Wittgenstein? *American Philosophical Quarterly* 48(2): pp. 113-118.

King, P. (2003). Scotus on Metaphysics. In: Thomas Williams (ed.), *The Cambridge Companion to Duns Scotus*, Cambridge, England: Cambridge University Press. Dordrecht/Boston: D. Reidel.

Kirk, G. S. & Raven J. E. (1957). *The Presocratic Philosophers: A critical history with selection of texts.* Cambridge: At the University Press.

Kitcher, P. (1985). Two approaches to explanation. *The Journal of Philosophy,* 82(11), 632-639.

Klagge, J. C. (Ed.), (2001). *Wittgenstein: Biography and Philosophy.* Cambridge: The University Press.

Klagge, J. C. (2011). *Wittgenstein in exile.* Cambridge MA: The MIT Press.

Klima, G. (2009). *John Buridan*. New York: Oxford University Press.

Kneale, W. (1966). Leibniz and the Picture Theory of Language. *Revue Internationale de Philosophie* 20, No. 76/77 (2/3), pp. 204-215.

Kneale, M., and Kneale, W. (1984). *The development of Logic*. Oxford: Clarendon Press.

Kober, M. (2006). Wittgenstein and religion. In: Michael Kober (Ed.), *Deepening our understanding of Wittgenstein*. Amsterdam: Rodopi, pp. 87-116.

Kragh, H. (1999). *Quantum generations: A history of Physics in the twentieth century*. Princeton, NJ: Princeton University Press.

Kragh, H. S. & Overduin, J. M. (2014). *The weight of the vacuum: A scientific history of dark energy*. Heidelberg: Springer.

Kraus, O. (Ed.), (1919), *Franz Brentano: Zur Kenntnis seines Lebens und seiner Werke. Mit Beiträgen von Carl Stumpf und Edmund Husserl.* München: Beck.

— (2009; 1930). Introduction. In: Franz Brentano, *The True and the Evident*, London: Routledge, pp. xiv-xxvi.

Kretzmann, N., Kenny, A., Pinborg, J., & Stump, E. (1997). *The Cambridge History of Later Medieval Philosophy. From the rediscovery of Aristotle to the disintegration of Scholasticism, 1100-1600.* Cambridge: The University Press.

Kripke, S. (1975). Outline of a Theory of Truth. *The Journal of Philosophy,* 72(19): 690-716.

— (1982). *Wittgenstein on rules and private language. An Elementary Exposition.* Oxford: Blackwell.

Kuhn, T. S. (1987). *Black-body theory and the quantum discontinuity, 1894–1912* (2nd ed.). Chicago: University of Chicago Press.

Künne, W. (2003). *Conceptions of truth*. Oxford: Clarendon Press.

Lakatos, I. (1974). Falsifikation und die Methodologie wissenschaftlicher Forschungsprogramme. In I. Lakatos & A. Musgrave (Eds.), *Kritik und Erkenntnisfortschritt: Abhandlungen des Internationalen Kolloquiums über die Philosophie der Wissenschaft, London 1965* (Band 4). Braunschweig: Vieweg, pp. 89-189.

Laudan, L. (1996). *Beyond Positivism and Relativism: Theory, method, and evidence.* Boulder, CO: Westview Press.

Lega, B. C., Burke, J., Jacobs, J. & Kahana M. J. (2016). Slow-theta-to-gamma Phase–Amplitude Coupling in human hippocampus supports the formation of new episodic memories. *Cerebral Cortex*, 26(1), 268–278.

Lega, B. C., Jacobs, J. & Kahana M. J. (2011). Human hippocampal theta oscillations and the formation of episodic memories. *Hippocampus,* 22(4), 748-761.

Leibniz, G. W. (1962). *Die Philosophischen Schriften von G. W. Leibniz*, 7 B. (C. I. Gerhardt, Ed.) Hildesheim: Olms.

— (1989). First truths. In: Loemker, Leroy E. (Ed.), *G. W. Leibniz. Philosophic Papers and Letters*. Dordrecht: Kluwer, pp. 267-271.

Leslie, A. M. & Frith, U. (1988). Autistic children's understanding of seeing, knowing and believing. *British Journal of Developmental Psychology,* 6, 315-324.

Letting, P. & Urmson J. O. (Trans.), (2014). *Philoponus:* On Aristotle Physics *5-8 with Simplicius:* On Aristotle on the void. London: Bloomsbury.

Lewis, D. (1973). *Counterfactuals*. Oxford: Basil Blackwell.

— (1973). Causation. *Journal of Philosophy*, 70(17), Seventieth Annual Meeting of the American Philosophical Association Eastern Division (Oct. 11, 1973): 556-67.

— (1983). General Semantics. In: D. Lewis, *Philosophical Papers*, volume 1, New York: Oxford University Press, pp. 189-232.

— (1986). *On the plurality of worlds.* Oxford: Blackwell.

Lloyd, G. E. R. (1996). *Methods and problems in Greek Science,* Vol. 1 (translated by Chloe Balla; edited by Vassilis Kalfas). Athens: Alexandria.

Locke, J. (1975; 1690). *An Essay concerning Human Understanding* (P. H. Nidditch, Ed.). Oxford: Clarendon Press.

Lorentz, H. A. (1906a). On positive and negative electrons. *Proceedings of the American Philosophical Society,* XLV (183), 103-109.

— (1906b). *Versuch einer Theorie der elektrischen und optischen Erscheinungen in bewegten Körper*. Leipzig: B. G. Teubner.

Lucas, J. R. (2000). *The conceptual roots of Mathematics: An essay on the Philosophy of Mathematics*. London: Routledge.

Lucretius (1968). *The way things are. The* De Rerum Natura *of Titus Lucretius Carus* (R. Humphries, Trans.). Bloomington, IN: Indiana University Press.

— (1992), [1924]. *On the nature of things* (W. H. Rouse, Trans.; Martin Ferguson Smith, Revision). Loeb Classical Library. Cambridge, MA: Harvard University Press.

Lukasiewicz, J. (1920). O logice trówartościowej (On three-valued logic). *Ruch Filozoficzny*, 6: 170–171 [Translated in English in: S. McCall (1967), *Polish Logic 1920–1939*. Oxford: Oxford University Press].

— (1935). Zur Geschichte der Aussagenlogik. *Erkenntnis* 5: pp. 111-131.

Mach, E. (1890). Über das psychologische und logische Moment im naturwissenschaftlichen Unterricht. *Zeitschrift für den physikalischen und chemischen Unterricht* 4.

— (1905). *Erkenntnis und Irrtum: Skizzen zur Psychologie der Forschung.* Leipzig: Johann Ambrosius Barth.

— (1986). *Principles of the theory of heat, historically and critically elucidated* (edited by Brian McGuinness; with an introduction by Martin J. Klein). Dordrecht, Boston, Lancaster, Tokyo: D. Reidel.

Maddy, P. (1980). Perception and Mathematical Intuition. *Philosophical Review*, 89: 163-196.

— (1990). *Realism in Mathematics*. Oxford: Oxford University Press.

— (1992). Indispensability and Practice. *Journal of Philosophy*, 89: 275-289.

— (1995). Naturalism and Ontology. *Philosophia Mathematica*, 3: 248-70.

— (1997). *Naturalism in Mathematics*. Oxford: Oxford University Press.

Mann, W. E. (2001). Augustine on evil and original sin. In: E. Stump & N. Kretzmann (Eds.). *The Cambridge Companion to Augustine.* Cambridge: The University Press, pp. 40-48.

Marenbon, J. (2009). The Medievals. In: H. Beebee, C. Hitchcock & P. Menzies (Eds.), *The Oxford book of causation,* Oxford: Oxford University Press, pp. 40-54.

Marty, A. (1895). Über subjektlose Sätze und das Verhältnis der Grammatik zur Logik und Psychologie: Siebenter Artikel. *Vierteljahrschrift für wissenschaftliche Philosophie,* Band 19, pp. 263-334.

Mates, B. (1961). *Stoic Logic* (2nd Ed.). Berkeley: University of California Press.

— (1989). *The Philosophy of Leibniz: Metaphysics and Language*. New York: Oxford University Press.

Mauthner, F. (1901-1921). *Beiträge zu einer Kritik der Sprache* (3 Bd.). Stuttgart/Berlin: J.G. Cott.

— (1906). *Die Sprache*. Frankfurt: Ruetten and Loening.

Maxwell, J. C. (1865). A dynamical theory of the electromagnetic field. *Philosophical Transactions of the Royal Society of London*, 155, 459–512.

— (1873). *A treatise on electricity and magnetism*. Oxford: Clarendon Press.

McAllister, J. W. (1999). *Beauty & revolution in science.* Ithaka and London: Cornell University Press.

McCabe, G. (2007). *The structure and interpretation of the Standard Model*. Amsterdam: Elsevier.

McCall, S. (1996). *A model of the universe: Space-time, probability, and decision*. Oxford: Clarendon Press.

McEwen, B. S. & Akil, H. (2011). Introduction to Social Neuroscience: Gene, Environment, Brain, Body. *The Annals of the New York Academy of Sciences*, 1231: vii-xii.

McGuinness, B. (2002). *Approaches to Wittgenstein: Collected papers*. London: Routledge.

Mehra, J. (1994). *The beat of a different drum: The life and science of Richard Feynman*. Oxford: Clarendon Press.

Meitner, L. & Frisch, O. R. (1939). Disintegration of uranium by neutrons: A new type of nuclear reaction. *Nature*, 143(3615), 239–240.

Mercier, D. J. (1918). *Critériologie générale ou théorie générale de la certitude* (7th ed.). Louvain: Institut supérieur de philosophie. Paris: Félix Alcan.

Merleau-Ponty, M. (1945). *Phénoménologie de la perception.* Paris : Gallimard.

— (1962). *Phenomenology of perception* (C. Smith, Trans.). London: Routledge and Kegan Paul.

— (1967). *La structure du comportement* (sixième édition). Paris: Les Presses Universitaires de France.

— (1968). *The visible and the invisible* (A. Lingis, Trans.). Evanston, IL: Northwestern University Press.

— (1994). *La nature: Notes, cours du Collège de France*. Paris: Seuil.

Mill, J. S. (1843; 2011). *A system of Logic, ratiocinative and inductive, being a connected view of the principles of evidence, and the methods of scientific investigation*. Cambridge: Cambridge University Press.

Milonni, P. W. (1994). *The Quantum Vacuum: An introduction to Quantum Electrodynamics.* Boston, MA: Academic Press.

Moore, G. E. (1925). A defense of common sense. In J.H. Muirhead (Ed.), *Contemporary British Philosophy*, 2nd Series, London: Allen and Unwin.

— (1939). Proof of an external world. *Proceedings of the British Academy,* 25: 127-50.

Morrison, M. (1997). Modelling nature: Between physics and the physical world. *Philosophia Naturalis*, 38, 64–85.

Moser, J. (2015). Manifest gegen die Evidenz. Tatsinn und Gewissheit bei Lukrez. In: *Auf die Wirklichkeit zeigen: Zum Problem der Evidenz in den Kulturwissenschaften. Ein Reader* (Herausgegeben von Helmut Lethen, Ludwig Jäger, Albrecht Koschorke). Frankfurt, New York: Campus, pp. 85-105.

Moyer, D, F. (1981). Vindications of Dirac's electron, 1932–1934. *American Journal of Physics,* 49(12), 1120–25.

Müller, R.-A. (2008). From loci to networks; Anomalies in the study of autism. *Annals of the New York Academy of Sciences, 1145*, 300-315.

Neuber, M. (2011). Feigl's 'Scientific Realism.' *Philosophy of Science,* 78(1), 165-183.

Newman, A. (2002). *The Correspondence Theory of Truth: An essay on the Metaphysics of Predication*. Cambridge, England: Cambridge University Press.

Niiniluoto, I. (2002). *Critical Scientific Realism*. Oxford: Oxford University Press.

Nordmann, A. (2005). *Wittgenstein's Tractatus. An Introduction*. Cambridge: The University Press.

Norris, C. (2000). *Quantum theory and the flight from realism: Philosophical responses to quantum mechanics*. London: Routledge.

— (2004). *Philosophy of language and the challenge to scientific realism*. New York: Routledge.

North, P. (2012). *The problem of distraction*. Stanford, CA: Stanford University Press.

Nöe, A. (2004). *Action in perception.* Cambridge, MA: The MIT Press.

Nöe, A. & Thompson, E. (Eds). (2002). *Vision and mind: selected readings in the philosophy of perception*. Cambridge, MA: The MIT Press.

Nunez, P. L. (2010). *Brain, mind, and the structure of reality*. Oxford: Oxford University Press.

— (2016). *The new science of consciousness: Exploring the complexity of brain, mind, and self.* Amherst, New York: Prometheus.

Ockham, W. (1967–88). *Opera philosophica et theologica,* 17 vols. (Gedeon Gál, et al., Eds.). St. Bonaventure, N. Y.: The Franciscan Institute.

Omnès, R. (1999). *Quantum philosophy: Understanding and interpreting contemporary science*. Princeton, NJ: Princeton University Press.

Oppenheimer, J. R. (1930). On the theory of electrons and protons (Letter to the editor). *Physical Review,* 35, 562–63.

Orton, S. (1925). Word-blindness in school children. *Archives of Neurology and Psychiatry,* 14, 581-615.

— (1937). Reading, writing and speech problems in children. New York: Norton.

— (1939). A neurological explanation of the reading disability. *Education Record*, 12, 58-68.

O'Brien, D. (1981). *Democritus, weight and size: An exercise in the reconstruction of Early Greek Philosophy*. Leiden: Brill.

O'Keefe, T. (1996). Does Epicurus need the swerve as an archê of collisions? *Phronesis*, 41(3): 305-317.

O'Meara, D. J. (1988). *Eriugena*. Oxford: Clarendon Press.

— (1990). *Pythagoras revived: Mathematics and Philosophy in Late Antiquity*. Oxford: Clarendon Press.

Pais, A. (1998). Paul Dirac: Aspects of his life and work. In: A. Pais, M. Jacob, D. I. Olive, M. F. Atiyah, *Paul Dirac: The man and his work* (Edited by P. Goddard). Cambridge: Cambridge University Press, pp. 1-45.

Panaccio, C. (2017). *Mental language: From Plato to William of Ockham*. (Joshua P. Hochschild, Meredith K. Ziebart, Trans.). New York: Fordham University Press.

Parsons, C. (1980). Mathematical intuition. *Proceedings of the Aristotelian Society,* 80: 145-168.

— (1990). The structuralist view of mathematical objects. *Synthese*, 84: 303-346.

— (1994). Intuition and number. In: A. George (Ed.), *Mathematics and Mind,* Oxford University Press, Oxford, pp. 141-157.

Pashby, T. (2012). Dirac's prediction of the positron: A case study for the current realism debate. *Perspectives on Science,* 20(4), 440-475.

Patterson, D. (2012). *Alfred Tarski: Philosophy of Language and Logic.* New York: Palgrave Macmillan.

Pauli, W. & Weisskopf, V. F. (1934). Über die Quantisierung der skalaren relativistischen Wellengleichung. *Helvetica Physica Acta,* 7, 709-731.

Pears, D. F. (1986). *Ludwig Wittgenstein.* Cambridge: Harvard University Press.

— (1987). *The false prison: A study of the development of Wittgenstein's philosophy*. Volume: 1. Oxford: Clarendon Press.

— (2006). *Paradox and platitude in Wittgenstein's Philosophy*. Oxford: Clarendon.

Peirce, C. S. (1892). The doctrine of necessity examined. *The Monist,* 2(3): 331-337.

— (1896). Lessons from the history of science. In: *Collected Papers of Charles Sanders Peirce,* Vol. 1 (C. Hartshorne & P. Weiss, Eds.), pp. 19-49.

— (1897). The logic of relatives. *The Monist,* 7(2): 161-217.

— (1931–1958). *The Collected Papers of Charles Sanders Peirce* (C. Hartshorne & P. Weiss, Ed., Volumes 1–6; A. Burks, Ed., Volumes 7–8). Cambridge, MA: Harvard University Press.

— (1992). *The Essential Peirce*, vol. 1 (N. Houser & C. Kloesel, Ed.). Bloomington: Indiana University Press.

— (1998). *The Essential Peirce*, vol. 2, Peirce Edition Project. Bloomington: Indiana University Press.

Penrose, R. (1989). *The emperor's new mind: Concerning computers, minds, and the laws of physics. Oxford: Oxford University Press.*

— (1994). *Shadows of the mind: A search for the missing science of consciousness.* Oxford: Oxford University Press.

Pinzani, R. (2003). *The Logical Grammar of Abelard.* Dordrecht: Springer.

Planck, M. (1933). Die Kausalität in der Natur. Reden und Vorträge. In M. Planck, *Wege zur physikalischen Erkenntnis*, Leipzig: S. Hirzel.

Plato (1866). *The Republic* (Translated by John Llewelyn Davies and David James Vaughan). Cambridge: The University Press.

— (1899-1907). *Platonis Opera. Recognovit brevique adnotatione critica instruxit Ioannes Burnet* (vol. 4). Oxonii e typographeo Clarendoniano.

Plotnitsky, A. (2014). The thinkable and the unthinkable in Psychoanalysis and Philosophy: from Sophocles to Freud to Derrida. *The Undecidable Unconscious: A Journal of Deconstruction and Psychoanalysis*, 1, pp. 53-84

Post, E. L. (1921). Introduction to a general Theory of Elementary Propositions. *American Journal of Mathematics* 43(3): pp. 163-185.

Potter, M. (2004). *Set Theory and its Philosophy: A critical introduction*. New York: Oxford University Press.

Prior, A. (1955). Diodoran Modalities. *Philosophical Quarterly* 5, pp. 205-13.

Psillos, S. (1999). *Scientific realism: How science tracks truth.* London: Routledge.

— (2011). On Reichenbach's argument for scientific realism. *Synthese,* 181(1), 23-40.

Purinton, J. S. (1999). Epicurus on "free volition" and the atomic swerve. *Phronesis*, 44(4): 253-299.

Putnam, H. (1968). Is Logic empirical? In: R. S. Cohen & M. W. Wartofsky, *Boston Studies in the Philosophy of Science*, Vol. 5, Dordrecht: D. Reidel, pp. 216-241. Reprinted as "The Logic of Quantum Mechanics" in *Mathematics, Matter and Method* (1975), Cambridge: Cambridge University Press, pp. 174-197.

— (1975). *Philosophical papers*. Vol. 1: *Mathematics, matter and method*. Cambridge: Cambridge University Press.

— (1981). *Reason, Truth and History*. Cambridge University Press, Cambridge.

— (1995). *Pragmatism: An open question*. Oxford: Blackwell.

— (2012). Indispensability arguments in the Philosophy of Mathematics. In: H. Putnam, *Philosophy in an Age of Science: Physics, Mathematics and Skepticism,* Cambridge, MA: Harvard University Press, chap. 9.

Quine, W.V.O. (1948). On what there is. *Review of Metaphysics,* 2: 21-38

— (1970). *Philosophy of Logic*. Englewood Cliffs, NJ: Prentice Hall.

— (1976). Use and its place in meaning. In: *Meaning and use: Papers presented at the Second Jerusalem Philosophical Encounter, April 1976* (edited by Avishai Margalit). Jerusalem: The Magness Press, The Hebrew University / Dordrecht, Boston: Reidel, pp. 1-8.

— (1981). *Theories and things*. Cambridge, Mass.: Harvard University Press.

— (1981a). On the very idea of a third dogma. In: *Theories and things*, Cambridge, MA: Belknap Press.

— (1992). Structure and nature. *Journal of Philosophy,* 89(1): 5-9.

Ramsey, F.P. (1923). Critical Notice of L. Wittgenstein's Tractatus Logico-Philosophicus. In: F.P. Ramsey, *The Foundations of Mathematics and Other Logical Essays* (ed. R.B. Braithwaite). London: Kegan Paul, Trench, Trubner.

— (1966). Review of Tractatus. In: *Essays on Wittgenstein's Tractatus* (edited by Irving M. Copi, Robert W. Beard), London: Routledge, pp. 9-24.

Raphals, L. (2003). Fate, fortune, chance, and luck in Chinese and Greek: A comparative semantic history. *Philosophy East and West* 53(4): pp. 537-574.

Read, S. (1995). *Thinking about Logic: An introduction to the Philosophy of Logic*. Oxford: Oxford University Press.

Rédei, M. (2014). Hilbert's 6th Problem and Axiomatic Quantum Field Theory. *Perspectives on Science*, 22(1), 80-97.

Reichenbach, H. (1938). *Experience and prediction: An analysis of the foundations and the structure of knowledge*. Chicago: The University of Chicago Press.

— (1944). *Philosophic foundations of Quantum Mechanics.*

— (1956). *The direction of time*. Berkeley and Los Angeles: University of California Press.

— (1989). Bertrand Russell's Logic. In: *The Philosophy of Bertrand Russell* (edited by Paul Arthur Schilpp), La Salle, IL: Open Court, pp. 21-54.

Reid, T. (2011; 1785). *Essays on the intellectual powers of man.* Cambridge: Cambridge University Press.

Rescher, N. (1987). *Scientific Realism: A critical reappraisal.* Dordrecht: D. Reidel.

— (1988). *Rationality*. Oxford: Oxford University Press.

Resnik, M. D. (1995). Scientific Vs Mathematical Realism: The indispensability argument. *Philosophia Mathematica,* 3(2): 166–174.

— (1997). *Mathematics as a science of patterns*. Oxford: Clarendon Press.

Ricoeur, P. (1970). *Freud and Philosophy: An essay on interpretation (The Terry Lectures Series),* (D. Savage, Trans.). Yale University Press.

Riemann, B. (1998; 1854). On the hypotheses which lie at the bases of Geometry (Translated by William Kingdon Clifford). *Nature* VIII (183-184): pp. 14-17, 36. 37.

Rosen, S. M. (2013). Bridging the "Two Cultures:" Merleau-Ponty and the crisis in modern physics. *Cosmos and History: The Journal of Natural and Social Philosophy*, 9(2): 1-12.

Rowland, D. R. (2007). Maxwell–Faraday stresses in electromagnetic fields and the self-force on a uniformly accelerating point charge. *European Journal of Physics*, 28, 201-213.

Rugh, S. E., Zinkernagel, H. & Cao, T. Y. (1999). The Casimir Effect and the interpretation of the vacuum. *Studies in the History and Philosophy of Modern Physics,* 30(1), 111-39.

Ruland, H.-J. (1976). *Die Arabischen Fassungen von zwei Schriften des Alexander von Aphrodisias:* Über die Vorsehung *und* Über das Liberum Arbitrium. Dissertation zur Erlangung des Grades eines Doktors der Philosophie der Philosophischen Fakultät der Universität des Saarlandes, Saarbrücken.

Russell, B. (1903). *The principles of Mathematics.* Cambridge: Cambridge University Press.

— (1905). On denoting. *Mind*, New Series, v. XIV, 1905, pp. 479–493.

— (1910–11). Knowledge by acquaintance and knowledge by description. *Proceedings of the Aristotelean Society* (New Series), 11: pp. 108–128.

— (1919). *Introduction to Mathematical Philosophy*. London: George Allen and Unwin.

— (1922). Introduction. In: *Tractatus Logico-Philosophicus. Logisch-philosophische Abhandlung* (Ludwig Wittgenstein). London: Kegan Paul. Available at: http://people.umass.edu/klement/tlp/

— (1940). *An inquiry into meaning and truth. The William James Lectures for 1940 delivered at Harvard University*. London: George Allen and Unwin.

— (1957). Mr. Strawson on referring. *Mind* 66: pp. 385–89.

— (1984). *Human knowledge: Its scope and limits.* London: George Allen and Unwin.

— (1985). *The Philosophy of Logical Atomism* (edited by David Pears). La Salle, IL: Open Court.

— (1989). My mental development. *The Philosophy of Bertrand Russell* (edited by Paul Arthur Schilpp), La Salle, IL: Open Court, pp. 1-20.

— (1992; 1900). *A critical exposition of the Philosophy of Leibniz. With an appendix of leading passages.* London: Routledge.

— (2000). *Autobiography.* London: Allen & Unwin, pp. 98-101.

— (2007; 1959). The impact of Wittgenstein. In: B. Russell, *My Philosophical Development,* Nottingham, England: Spokesman, pp. 110-127.

Russon, J. (1996). Self-consciousness and the tradition in Aristotle's Psychology. *Laval théologique et philosophique,* 52(3): 777-803.

Salmon, W. C. (2005). *Reality and rationality* (P. Dowe & M. H. Salmon, Eds.). New York: Oxford University Press.

Sambursky, S. (1959). *Physics of the Stoics.* London: Routledge and Kegan Paul.

Sankey, H. (2008). *Scientific realism and the rationality of science.* Burlington, VT: Ashgate.

Saunders, S. W. (1991). The negative energy sea. In S. Saunders & H. Brown (Eds.), *Philosophy of Vacuum* (pp. 65-109), Oxford: Clarendon Press.

— (2002). Is the zero-point energy real? In M. Kuhlmann, H. Lyre & A. Wayne, *Ontological Aspects of Quantum Field Theory* (pp. 313-343). New Jersey: World Scientific.

Savickey, B. (1999). *Wittgenstein's art of investigation*. London: Routledge.

Schaefer, R. (2013). The madness of Franz Brentano: Religion, secularization and the History of Philosophy. *History of European Ideas* 39(4): pp. 541-560.

Schlick, M. (1918). *Allgemeine Erkenntnislehre*. Berlin: Julius Springer.

— (1918/1974). *General theory of knowledge* (A. E. Blumberg, Trans.). New York: Springer.

Scholz, H. (1930-31). Die Axiomatik der Alten. *Blätter für deutsche Philosophie* 4, S. 259-78.

Schibli, H. S. (1990). *Pherekydes of Syros.* Oxford: Clarendon Press.

Schröder, E. (1895). *Vorlesungen über die Algebra der Logik (exakte Logik).* Vol. III: *Algebra und Logik der Relative.* Leipzig: Teubner.

Schrödinger, E. (1950a). What is an elementary particle? *Endeavour,* 9, 109–116.

— (1950b). *Space-time structure*. Cambridge: Cambridge University Press.

— (1952). Are there quantum jumps? *British Journal for the Philosophy of Science*, 3, 109–123 and 233–247.

Schummers, J., Yu, H. & Sur, M. (2008). Tuned responses of astrocytes and their influence on hemodynamic signals in the visual cortex. *Science,* 320, 1638-1643.

Schweber, S. S. (1994). *QED and the men who made it: Dyson, Feynman, Schwinger and Tomonaga.* Princeton, NJ: Princeton University Press.

Seaman, F. (1975). Ernst Mach: His work, life, and influence (review). *Journal of the History of Philosophy* 13(2): pp. 273-76.

Sedley, D. N. (1983). Epicurus' refutation of determinism. In: AA. VV. (Eds), *ΣΥΖΗΤΗΣΙΣ- Studi sull'epicureismo greco e romano offerti a Marcello Gigante,* 2 vols., Naples, pp. 11–51.

— (1998). *Lucretius and the transformation of Greek wisdom*. Cambridge: Cambridge University Press.

— (1999). Hellenistic Physics and Metaphysics. In: K. Algra, J. Barnes, J. Mansfield & M. Schofield (Eds), *The Cambridge History of Hellenistic Philosophy*, Cambridge: Cambridge University Press, pp. 353-411.

Sellars, R. W. (1916). *Critical realism: A study of the nature and conditions of knowledge.* Chicago; New York: Rand McNally & Company.

— (1932). *The philosophy of physical realism.* New York: Macmillan.

Sellars, W. (1954). Physical realism. *Philosophy and Phenomenological Research*, 15(1), 13-32.

— (1965). Scientific realism or irenic instrumentalism. In R. S. Cohen and M. W. Wartofsky (eds.) *Boston Studies in the Philosophy of Science,* II: *In honor of Philipp Frank.* New York: Humanities Press, pp. 171–204.

Sextus Empiricus (ex recensione Immanuelis Bekkeri), (1842). *Outlines of Pyrrhonism. Against the Mathematicians.* Berlin: G. Reimeri.

Serres, M. (2000). *The birth of Physics* (J. Hawkes, Trans; D. Webb, Ed.). Manchester: Clinamen Press.

Shanker, S. (1998). *Wittgenstein's remarks on the foundations of AI.* London: Routledge.

Shapiro, S. (1983a). Conservativeness and Incompleteness. *Journal of Philosophy,* 80: 521-531.

— (1983b). Mathematics and Reality. *Philosophy of Science*, 50: 523-548.

— (1989). Structure and Ontology. *Philosophical Topics*, 17: 145-171.

— (1993). Modality and Ontology. *Mind*, 102: 455-81.

— (1997). *Philosophy of Mathematics*. New York: Oxford University Press.

Sharples, R. W. (1982). Alexander of Aphrodisias on Divine Providence: Two Problems. *The Classical Quarterly* 32(1), pp. 198-211.

— (1983). *Alexander of Aphrodisias on Fate.* London: Duckworth.

— (1992). *Alexander of Aphrodisias. Quaestiones* 1.1-2.15. London: Duckworth.

— (1994). *Alexander of Aphrodisias. Quaestiones* 2.16-3.15. London: Duckworth.

— (1999). The Peripatetic School. In: Furley, David (ed.), *From Aristotle to Augustine*, London: Routledge, pp. 147-187.

Sharples, R.W., and P.J. van der Eijk (Translated with an introduction and notes), (2008). *Nemesius: On the Nature of Man.* Liverpool: The University Press.

Siegel, D. (1986). The origin of the displacement current. *Historical Studies in the Physical and Biological Sciences*, 17(1), 99-146.

— (1992). *Innovation in Maxwell's electromagnetic theory: Molecular vortices, displacement current and light.* Cambridge: Cambridge University Press.

Simplicius (1865). *Commentarius in IV Libros Aristotelis De Caelo* (edited by Karsten Simon). Utrecht: Kemink and Son.

Sluga, H. (2004). Wittgenstein and Pyrrhonism. In: Walter Sinnott-Armstrong, *Pyrrhonian Skepticism*, New York: Oxford University Press, pp. 99-117.

Soames, S. (1999). *Understanding truth*. New York: Oxford University Press.

Sommerfeld, A. (1921). *Atombau und Spektrallinien* (2. Auflage). Braunschweig: Friedr. Vieweg & Sohn.

Sorabji, R. (1980). Causation, laws, and necessity. In: *Doubt and Dogmatism: Studies in Hellenistic Epistemology* (edited by Malcolm Schofield, Myles Burnyeat, and Jonathan Barnes), Oxford: Clarendon, pp 250-282.

Spade, P. V. (Trans. and Ed.), (1994). *Five texts on the medieval problem of universals: Porphyry, Boethius, Abelard, Duns Scotus, Ockham.* Indianapolis/Cambridge: Hackett.

Stapp, H. P. (2007a). Quantum approaches to consciousness. In P. D. Zelazo, M. Moscovitch, & E. Thompson (Eds.; 2007). *The Cambridge handbook of consciousness*. Cambridge; New York: Cambridge University Press, pp. 879-908.

— (2007b). *Mindful universe: Quantum mechanics and the participating observer.* Berlin: Springer.

— (2009). *Mind, matter, and quantum mechanics* (3rd ed.). Berlin: Springer.

Stegmüller, W. (1956). Glauben, Wissen und Erkennen. *Zeitschrift für Philosophische Forschung* 10: pp. 509-549.

— (1969). *Metaphysik, Skepsis, Wissenschaft* (2nd Ed.). Berlin, Heidelberg, New York: Springer.

— (1970). *Theorie und Erfahrung.* Berlin, Heidelberg: Springer.

Steiner, M. (1975). *Mathematical knowledge*. Ithaca, NY: Cornell University Press.

— (1989). The Application of Mathematics to Natural Science. *Journal of Philosophy,* 86: 449-480.

Stobaeus, I. (1864). *Eclogarum physicarum et ethicarum* (Augustus Meineke, Trans.). Lipsiae: In Aedibus B. G. Teubneri.

Stroud, B. (1977). *Hume.* London: Routledge.

— (1978). Hume and the idea of causal necessity. *Philosophical Studies,* 33(1): 39-59.

Stump, E. (1978). *Boethius's "De topicis differentiis."* Ithaca/London: Cornell University Press.

Stump, E. & Kretzmann, N. (Eds.), (2001). *The Cambridge Companion to Augustine.* Cambridge: The University Press.

Sullivan, P. M. (2005). What is squiggle? Ramsey on Wittgenstein's Theory of Judgement. In: *Ramsey's Legacy* (edited by H. Lillehammer and D. H. Mellor). Oxford, England: Clarendon, pp. 53-70.

Summers, S. J. (2016). A perspective on constructive Quantum Field Theory. Available at: http://arxiv.org/abs/1203.3991.

Suppe, F. (1989). *The semantic conception of theories and scientific realism.* Urbana: University of Illinois Press.

Suppes, P. (1961). A comparison of the meaning and use of models in mathematics and the empirical sciences. In H. Freudenthal (Ed.), *The concept and the role of the model in mathematics and natural and social sciences*, Dordrecht: Reidel, pp. 163–77.

Svozil, K. (2009). Contexts in quantum, classical and partition logic. In K. Engesser, D. Gabbay & D. Lehmann (Eds.). *Handbook of Quantum Logic and quantum structures: Quantum Logic*. Amsterdam: Elsevier, pp. 551-586.

Szaif, J. (2018). Plato and Aristotle on truth and falsehood. In M. Glanzberg (Ed.), *The Oxford Handbook of Truth*. Oxford: Oxford University Press, pp. 9–49.

Tamm, I. (1930a). Über die Wechselwirkung der freien Elektronen mit der Strahlung nach der Dirachsen Theorie des Elektrons und nach der Quantendynamik. *Zeitschrift für Physik,* 62(7), 545-568.

— (1930b). Eine Bemerkung zur Dirachsen Theorie der Lichtzerstreuung und Dispersion. *Zeitschrift für Physik*, 65(9), 705-708.

Tarski, A. (1936). The concept of truth in formalized languages. In: A. Tarski (ed.), *Logic, Semantics, Metamathematics*. Oxford: Oxford University Press.

— (1953). *Undecidable Theories*. Amsterdam: North-Holland.

Taylor, D. (2014). Introduction: Power, freedom and subjectivity. In: *Michel Foucault: Key Concepts* (Dianna Taylor, Ed.). London: Routledge, pp. 1-9.

Thillet, P. (1984). *Alexandre d'Aphrodise: Traité du destin.* Paris: Les Belles Lettres.

— (2003). *Alexandre d'Aphrodise: Traité de la providence* (Peri pronoias, version Arabe de Abu Bissar Matthae ibn Yunus. Intr. ed. et trad.), Lagrasse: Verdier.

Thomas, I. (1961). Preface to the English Edition. In: *A History of Formal Logic* (Joseph M. Bocheński). Notre Dame, IN: University of Notre Dame Press, pp. vii-xiii.

Tiles, M. (1991). *Mathematics and the Image of Reason*. New York: Routledge.

Treiman, S. (1999). *The odd quantum*. Princeton, NJ: Princeton University Press.

Turing, A. M. (1937-38). On computable numbers, with an application to the Entscheidungsproblem. *Proceedings of the London Mathematical Society* 2(42): pp. 230–65; 2(43): pp. 544–46.

— (1950). Computing machinery and intelligence. *Mind: A Quarterly Review of Psychology and Philosophy,* 59(236), 433-460.

Uhlenbeck, G. E. & Goudsmit S. (1925). Ersetzung der Hypothese vom unmechanischen Zwang durch eine Forderung bezüglich des inneren Verhaltens jedes einzelnen Elektrons. *Die Naturwissenschaften*, 13(47), 953-954.

— (1926). Spinning Electrons and the Structure of Spectra. *Nature*, 117(2938), 264.

van der Waerden, B. L. (1971). Synthetische Urteile a priori. In H. P. Dürr (Herausgeber), *Quanten und Felder: Physikalische und Philosophische Betrachtungen zum 70. Geburtstag von Werner Heisenberg.* Braunschweig: Friedrich Vieweg + Sohn.

van Fraassen, B. C. (1980). *The scientific image*. Oxford: Oxford University Press.

— (1989). *Laws and symmetry*. Oxford: Oxford University Press.

— (1991). *Quantum mechanics: An empiricist view*. Oxford: Oxford University Press.

von Laue, M. (1959). *Geschichte der Physik.* Frankfurt am Main: Ullstein.

von Neumann, J. (1932). *Mathematische Grundlagen der Quantenmechanik.* Berlin: Springer.

— (1955). Method in the Physical Sciences. In *The unity of knowledge* (L. G. Leary, Ed.). New York: Doubleday & Co.

Vos, A. (2006). *The Philosophy of John Duns Scotus*. Edinburgh: Edinburgh University Press.

Vuillemin, J. (1986). *What are philosophical systems?* Cambridge: Cambridge University Press.

— (2005). Cinématique et dynamique chez Platon et Aristote. Conséquences du rationalisme négatif en physique platonicienne. *Archives de Philosophie,* 68: 303-313.

Walker, E. H. (2000). *The physics of consciousness: The quantum minds and the meaning of life*. Cambridge, MA: Perseus Books.

Wallace, D. (2008). Philosophy of Quantum Mechanics. In D. Rickles, *The Ashgate Companion to Contemporary Philosophy of Physics,* Aldershot: Ashgate, pp. 16-98.

— (2009). QFT, antimatter, and symmetry. *Studies in History and Philosophy of Science* B, 40, 209-22.

Wallace, D. & Timpson, C. G. (2010). Quantum Mechanics on spacetime I: Spacetime state Realism. *The British Journal for the Philosophy of Science*, 61(4), 697–727.

Walter, W. G. (1953). *The living brain*. London: Duckworth.

Weisskopf, V. F. (1936). Über die Elektrodynamik des Vakuums auf Grund der Quantentheorie des Elektrons. *Matematisk-Fysiske Meddelelser det Kongelige Danske Videnskabernes Selskab*, 14, 3–39.

Weyl, H. (1929a). Gravitation and the electron. *Proceedings of the National Academy of Sciences of the United States of America,* 15(4), 323-334.

— (1929b). Elektron und Gravitation. I. *Zeitschrift für Physik*, 56(5), 330-352.

Wheaton, B. R. (1983). *The tiger and the shark: Empirical roots of wave-particle dualism.* Cambridge: Cambridge University Press.

Whitehead, A. N. & Russell, B. (1925-27). *Principia Mathematica* (3 Vols). Cambridge: Cambridge University Press.

Wigner, E. P. (1961). Remarks on the mind–body problem. In I.J. Good (Ed.), *The scientist speculates*, London: Heinemann, pp. 284–302. Reprinted in J.A. Wheeler and W.H. Zurek (1983; Eds.), *Quantum Theory and Measurement*, Princeton, NJ: Princeton University Press, pp. 168–181.

— (1964). Two kinds of reality. *The Monist,* 48(2), 248-264.

— (1978). New dimensions of consciousness. Mimeographed notes. Reprinted in the *Collected Works of Eugene Paul Wigner*. Part B: *Historical, philosophical, and socio-political papers* (J. Mehra, Ed.). Volume 6, pp. 268–273.

— (1993). *The collected works of Eugene Paul Wigner*. Part A: *The scientific papers.* Vol. 1. Berlin, Heidelberg: Springer.

Wilczek, F. A. (2002). On the world's numerical recipe. *Daedalus,* 131(1), 142-147.

— (2005). Asymptotic freedom: From paradox to paradigm. *Proceedings of the National Academy of Sciences if the United States of America,* 102 (24), 8403-8413.

— (2008). *The lightness of being: Mass, ether, and the unification of forces.* New York: Basic Books.

— (2015). *A beautiful question: Finding nature's deep design*. New York: Penguin.

Wilczek, F. A. & Devine, B. (1988). *Longing for the harmonies: Themes and variations from modern physics*. New York: W. W. Norton.

Williams, T. (Ed.), (2003). *The Cambridge Companion to Duns Scotus*. Cambridge, England: Cambridge University Press.

Williams, R. C. & Cantelon, P. L. (1984). *The American atom: A documentary history of nuclear policies from the discovery of fission to the present, 1939-1984*. Philadelphia: University of Pennsylvania Press.

Wittgenstein, Ludwig (1922). *Tractatus Logico-Philosophicus. Logisch-philosophische Abhandlung*. London: Kegan Paul. Side-by-Side-by-Side Edition, Version 0.44 (December 5, 2016). Available at: http://people.umass.edu/klement/tlp/

— (1929). Some remarks on Logical Form. *Proceedings of the Aristotelian Society,* Supp. Vol. 9.

— (1953). *Philosophical investigations* (G. E. M. Anscombe, Trans.). Oxford: Blackwell.

— (1958). *The Blue and the Brown Books. Preliminary Studies for the "Philosophical Investigations."* Oxford: Blackwell.

— (1969). *On certainty* (G. E. M. Anscombe & G. H. von Wright, Ed.; D. Paul & G. E. M. Anscombe, Trans.). Oxford: Blackwell.

— (1974). *Philosophical Grammar.* Oxford: Blackwell.

— (1979a). *Wittgenstein's Lectures: Cambridge, 1932-1935* (from the notes of A. Ambrose and M. MacDonald; edited by A. Ambrose), Oxford: Blackwell.

— (1979b). *Ludwig Wittgenstein and the Vienna Circle* (from the notes of F. Waismann). Oxford: Blackwell, 1979.

— (1980). *Culture and value* (edited by G.H. von Wright; translated by P. Winch: German text in *Vermischte Bemerkungen*, Frankfurt: Suhrkamp 1977). Chicago: The University Press.

— (1984). *Notebooks, 1914-1916* (2nd Ed.). Chicago: The University Press.

— (1993). Cause and effect: Intuitive awareness. In *Philosophical Occasions: 1912-1951* (J. C. Klagge & A. Nordmann, Eds), Indianapolis: Hackett Publishing, pp. 371-426.

Woleński, J. (1998). Lukasiewitz, Jan (1878-1956). In: *Routledge Encyclopedia of Philosophy*, Vol. 5 (edited by Edward Craig), London and New York: Routledge, pp. 860-863.

Woolhouse, R. S. & Francks, R. (Eds), (1997). *Leibniz's "New System" and Associated Contemporary Texts* (Translated by R. S. Woolhouse and Richard Francks). Oxford: Clarendon Press.

Worrall, J. (1989). Structural realism: The best of both worlds? *Dialectica,* 43, 99-124.

Wright, A. S. (2014). *More than nothing: Histories of the vacuum in theoretical physics, 1927-1981* (Doctoral Dissertation, University of Toronto, Canada).

— (2016). A beautiful sea: P. A. M. Dirac's epistemology and ontology of the vacuum. *Annals of Science* 73(2), 225-256.

Wright, C. (1983). *Frege conception of numbers as objects*. Aberdeen, Scotland: Aberdeen University Press.

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