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# Quantum theory

Albert, David Z. *Quantum Mechanics and Experience.* Cambridge (MA): Harvard UP, 1992.

\_\_\_\_\_. "On the Origin of Everything: *A Universe from Nothing,* by Lawrence M. Krauss." *New York Times* 23 March 2012.\*

 <http://www.nytimes.com/2012/03/25/books/review/a-universe-from-nothing-by-lawrence-m-krauss.html>

 2017

### Amelino-Camelia, Giovanni, Laurent Freidel, Jerzy Kowalski-Glikman, and Lee Smolin*. "*Principle of Relative Locality." *Phys. Rev.* D: *Covering Particles, Fields, Gravitation, and Cosmology* 84, 084010 (5 October 2011):

 <https://journals.aps.org/prd/abstract/10.1103/PhysRevD.84.084010>

 2017

Aspect, Alain, Philippe Grangier, and Gérard Roger. (All CNRS, U Paris-Sud, Orsay). "Experimental Realization of Einstein-Podolsky-Rosen-Bohm *Gedankenexperiment:* A New Violation of Bell's Inequalities." *Physical Review Letters* 49.2 (July 1982): 91-4.\* (Quantum entanglement).

Atkins, Peter. *Galileo's Finger: The Ten Great ideas of Science.* Oxford: Oxford UP, 2004. (Natural selection, quantum theory, space-time, etc.).

Barrow, John D. *The Book of Nothing.* London: Jonathan Cape, 2000. (Nothingness, Zero, Emptiness, Space, Ether, Paradoxes, Truth, Universe, Mach, Einstein, Augustine, Shakespeare, Void, Being, Creation, Cosmology, Black holes, Aristotle, Big Bang, Quantum theory, Sets, Descartes, Electrons, Energy, God, Gravity, Indian philosophy, Light, Mathematics, Newton, Numbers, Pascal, Quarks, Sub-atomic physics, Time).

\_\_\_\_\_. *El libro de la nada.* (Drakontos). Barcelona: Crítica, 2001.\*

Bell, J. S. *Speakable and Unspeakable in Quantum Mechanics.* Cambridge: Cambridge UP, 1987.

Bernstein, Jeremy. *Quantum Leaps.* 2009.

Biosca, Patricia. "Un accidente en un laboratorio resuelve un rompecabezas cuántico de medio siglo." *ABC* 13 March 2020.\*

<https://www.abc.es/ciencia/abci-accidente-laboratorio-resuelve-rompecabezas-cuantico-medio-siglo-202003130357_noticia.html>

 2020

Bohr, Niels. "La teoría atómica y la descripción de la Naturaleza. " In Heisenberg et al., *Física cuántica.* Barcelona: Círculo de Lectores, 1996.\*

Bojowald, Martin. "3. Teoría cuántica. " In Bojowald, *Antes del Big Bang: Una historia completa del Universo.* Madrid: Debate, 2010. 65-96.\*

\_\_\_\_\_. "5. Gravitación cuántica. " In Bojowald, *Antes del Big Bang: Una historia completa del Universo.* Madrid: Debate, 2010. 107-60.\*

Callender, C., and N. Huggett. *Physics Meets Philosophy at the Planck Scale.* Cambridge: Cambridge UP, 2001.

Carroll, Sean. *Something Deeply Hidden: Quantum Worlds and the Emergence of Spacetime.* 2019.

##### Cortês, Marina, and Lee Smolin. "Quantum Energy Causal Sets." *Physical Review D: Particles, Fields, Gravitation and Cosmology* 90, 044035 (14 August 2014)

 <https://journals.aps.org/prd/abstract/10.1103/PhysRevD.90.044035>

 <https://doi.org/10.1103/PhysRevD.90.044035>

 2017

\_\_\_\_\_. "The Universe as a Process of Unique Events." *Physical Review D: Particles, Fields, Gravitation and Cosmology* 90.8 (6 Oct. 2014).\*

 [http://www.research.ed.ac.uk/portal/en/publications/the-universe-as-a-process-of-unique-events(3c29b15e-2aa7-4660-a81d-e4a31ffaff19).html](http://www.research.ed.ac.uk/portal/en/publications/the-universe-as-a-process-of-unique-events%283c29b15e-2aa7-4660-a81d-e4a31ffaff19%29.html)

 <http://dx.doi.org/10.1103/PhysRevD.90.084007>

 2016

Davies, P. C. W., and J. R. Brown. *El espíritu del átomo: Una discusión sobre los misterios de la física cuántica.* Madrid: Alianza.

de Beaugrande, Robert. "Quantum Aspects of Artistic Perception. " *Poetic*s 17.45 (October 1988).

\_\_\_\_\_. "Quantum Aspects of Perceived Reality: A New Engagement of Science and Art. " *Journal of Literary Semantics* 18.1 (April 1989).

Denchev, Vasil S., et al. "What Is the Computational Value of Finite Range Tunneling?" *Arxiv (Quantum Physics)* 7 Dec. 2015.\*

 <http://arxiv.org/abs/1512.02206>

 2016

DeWitt, Bryce S. (1923-2004, theorist of the timeless "quantum universe"). *Supermanifolds.* Cambridge: Cambridge UP, 1985.

\_\_\_\_\_. *The Global Approach to Quantum Field Theory.* (The International Series of Monographs on Physics). Oxford UP, 2003.

DeWitt, Bryce S., and R. Neill Graham, eds. *The Many-Worlds Interpretation of Quantum Mechanics.* Princeton: Princeton UP, 1973.

Deutsch, D. "Quantum Theory, the Church-Turing Principle and the Universal Quantum Computer. " *Proc. Roy. Soc.* (London) A400 (1985): 97-117.

 <http://adsabs.harvard.edu/abs/1985RSPSA.400...97D>

 2009

Dieks, Dennis. "The Quantum Mechanical Worldpicture and Its Popularization." In *Popularization of Science: The Democratization of Knowledge in Perspective.* Ed. Gustaaf Cornelis. Special issue of *Communication and Cognition* 29.2 (1996). 153-168.

Diósi, L. "Models for Universal Reduction of Macroscopic Quantum Fluctuations. " *Physical Review* A40 (1989): 1165-74.

Everett, Hugh, III. " 'Relative State ' Formulation of Quantum Mechanics. " *Review of Modern Physics* 29.3 (1957): 454-62.

Feynman, Richard P. *Six Easy Pieces.* London: Penguin, 1998.

\_\_\_\_\_. *Seis Piezas Fáciles.* Barcelona: Crítica, 1998.

Freedman, David H. "Quantum Liaisons." In *Mysteries of Life and the Universe.* Ed. William H. Shore. San Diego: Harvest / Harcourt Brace, 1992.

Galfard, Christophe. *The Universe in Your Hand: A JOurney through Space, Time, and Beyond.* (Solar System, astronomy, universe, laws, cosmology, Big Bang, time, quantum theory, nothingness, matter, singularities, multiverse, string theory).

\_\_\_\_\_. *El universo en tu mano: Un viaje extraordinario a los límites del tiempo y el espacio.* Trans. Pablo Álvarez Ellacuría. Barcelona: Blackie Books, 2016.\*

Gell-Mann, Murray. *The Quark and the Jaguar: Adventures in the Simple and the Complex.* 1994.

\_\_\_\_\_. *El quark y el jaguar: Aventuras en lo simple y lo complejo.* Trans. Ambrosio García and Romualdo Pastor. (Metatemas, 38). Barcelona: Tusquets, 1995. 2nd. ed. 1995. 3rd ed. 1996. 4th ed. 2003.\*

Gell-Mann, M., and J. B. Hartle. "Classroom Equations for Quantum Systems. " *Phys. Rev.* D47 (1993): 3345-82.

Goswami, Amit. *Quantum Mechanics.*

Gribbin, John. *In Search of Schrödinger 's Cat.* New York: Bantam; London: Corgi, 1984.

\_\_\_\_\_. *En busca del gato de Schrödinger.* Barcelona: Salvat, 1986.

\_\_\_\_\_. *The Search for the Double Helix: Quantum Physics and Life.*London: Corgi, 1985.

\_\_\_\_\_. *In Search of the Big Bang.* New York: Bantam; London: Corgi, 1986.

\_\_\_\_\_. *En busca del Big Bang.* Madrid: Pirámide, 1988.

\_\_\_\_\_. *The Omega Point: The Search for the Missing Mass and the Ultimate Fate of the Universe.* 1987.

\_\_\_\_\_. *El punto Omega: La búsqueda de la masa perdida y el destino final del Universo.* Trans. Javier García Sanz. Madrid: Alianza, 1990.\*

\_\_\_\_\_. *Schrödinger's Kittens and the Search for Reality: Solving the Quantum Mysteries.* Boston: Little, Brown, 1995.

Forman, P. *Cultura en Weimar. Causalidad y teoría cuántica 1918-27.* Madrid: Alianza, 1984.

Galison, Peter. *How Experiments End.* Chicago: U of Chicago P, 1987.\* (Physics, atoms, particles, quantum theory, theories).

Haag, R. *Local Quantum Physics: Fields, Particles, Algebras.* Berlin: Springer, 1992.

Hawking, Stephen. "2. La forma del tiempo: La relatividad general de Einstein da forma al tiempo. Cómo reconciliar esto con la teoría cuántica." In Hawking, *El universo en una cáscara de nuez.* Barcelona: Crítica / Planeta, 2002. 29-66.\*

Heisenberg, Werner. *Physics and Beyond.* New York: Harper, 1971.

\_\_\_\_\_. "Diálogos sobre la física atómica. " In Heisenberg et al., *Física cuántica.* Barcelona: Círculo de Lectores, 1996.\*

Heisenberg, Werner, Niels Bohr and Erwin Schrödinger. *Física cuántica.* Trans. Wolfgang Strobl, Luis Pelayo, Miguel Ferrero Melgar and Xavier Zubiri. Introd. José Manuel Sánchez Ron. (Biblioteca Universal Opera Mundi, Ciencia). Barcelona: Círculo de Lectores, 1996.\*

Hensen, B., H. Bernien, A. E. Dréau, A. Reiserer, N. Kalb, M. S. Blok, J. Ruitenberg, R. F. L. Vermeulen, R. N. Schouten, C. Abellán, W. Amaya, V. Pruneri, M. W. Mitchell, M. Markham, D. J. Twitchen, D. Elkouss, S. Wehner, T. H. Taminiau, and R. Hanson. "Loophole-free Bell Inequality Violation Using Electron Spins Separated by 1.3 Kilometres." [*Nature*](http://nature.com/articles/doi%3A10.1038/nature15759), 21 Oct. 2015. (Quantum entanglement).

 DOI: 10.1038/nature15759

Hughston, L. P., R. Jozsa and W. K. Wooters. "A Complete Classification of Quantum Ensembles Having a Given Density Matrix. " *Phys. Letters* A183 (1993): 14-18.

Ibercampus. "Proponen un nuevo lenguaje matemático pero intuitivo que integre la física clásica y la cuántica." *Ibercampus* 9 Jan. 2020.\* (Nicolas Gisin, Genoa).

 <https://www.ibercampus.es/proponen-un-nuevo-lenguaje-matematico-pero-intuitivo-que-integre-la-fisica-39229.htm>

 2020

Isham, C. J., R. Penrose and D. W. Sciama, eds. *Quantum Gravity 2: A Second Oxford Symposium*. Oxford: Oxford UP, 1981.

Jou Mirabent, David. *Cerebro y universo: Dos cosmologías.* (El espejo y la lámpara, 1). Barcelona: Edicions UAB, 2011.\* (Prologue, "Cerebro y universo", 9-14).

\_\_\_\_\_. "5. Efectos cuánticos en el universo y en el cerebro." In Jou, *Cerebro y universo: Dos cosmologías.* Barcelona: Edicions UAB, 2011. 147-68.\*

\_\_\_\_\_. "Física cuántica y biología: de las moléculas al cerebro." Ciclo Quantum Ergo. Física cuántica: ilusión o realidad. Lecture at Ibercaja Zentrum, 14 May 2013.\*

 <http://obrasocial.ibercaja.es/v2_ficha_actividad.php?id=a213529ee2bffcb2fc15bc70e004858788118b96d051280b25700e7fc33b267524df10ab3ae901df293f2e0bf378e833b7e48abc06e2243c2bf17296353445ca>

 2013

Kaku, Michio. *Physics of Impossibility.*

Károlyházy, F. "Gravitation and Quantum Mechanics of Macroscopic Bodies. " *Nuovo Cim.* A42 (1966): 390.

\_\_\_\_\_. "Gravitation and Quantum Mechanics of Macroscopic Bodies. " *Magyar Fizikat Polyoir Mat* 12 (1974): 24.

Károlyházy, F., A. Frenkel, and B. Lukács. "On the Possible Role of Gravity on the Reduction of the Wave Function. " In *Quantum Concepts in Space and Time.* Ed. R. Penrose and C. J. Isham. Oxford: Oxford UP, 1986. 109-28.

Klein, Étienne. *Petit voyage dans le monde des quanta.* (Champs). 2004. New ed. 2016. (Prix Jean Rostand 2004).

Klein, ienne, ﷽﷽anta et des choses.pt. LGF, 1994. en physique.thday. alidad." ueno del gobierno."Étienne, and Bernard d'Espagnat. *Regards sur la matière: Des quanta et des choses.* Paris: Fayard, 1993.

Krauss, Lawrence M. *A Universe from Nothing: Why There Is Something Rather than Nothing.* Afterword by Richard Dawkins. New York: Free Press, 2012.

Kuhn, T. S. *Black-Body Theory and the Quantum Discontinuity, 1894-1912.* Chicago: U of Chicago P.

Leggett, A. J., and Anupam Garg. "Quantum Mechanics versus Macroscopic Realism: Is the Flux There when Nobody Looks?" *Physical Review Letters* 54.9 (1985).\*

Lindley, David. *Where Does the Weirdness Go? Why Quantum Mechanics Is Strange, but not as Strange as You Think.* New York: Vintage, 1997.

\_\_\_\_\_. *Uncertainty: Einstein, Heisenberg, Bohr, and the Struggle for the Soul of Science*. Doubleday, 2007.

Lockwood, Michael. *Mind, Brain, and the Quantum: The Compound 'I '.* 1989. Oxford: Blackwell, 1991.

Matson, John. "Quantum Teleportation Achieved Over Record Distances." *Nature* (13 Aug. 2012).\*

 <https://doi.org/10.1038/nature.2012.11163>

 <https://www.nature.com/articles/nature.2012.11163>

 2022

Minev, Z. K., et al. "To Catch and Reverse a Quantum Jump Mid-flight." *Nature* 3 June 2019.\*

 <https://www.nature.com/articles/s41586-019-1287-z>

 2019

Nieves, José Manuel. "Físicos logran comunicar dos partículas a través del tiempo." *ABC* 28 May 2013.\*

 <http://prensa.unizar.es/noticias/1305/130528_z0_abcparti.pdf>

 2013

\_\_\_\_\_. "Logran, por primera vez, medir la 'nada absoluta'." *ABC* 17 April 2019.\*

 <https://www.abc.es/ciencia/abci-logran-primera-medir-nada-absoluta-201904162000_noticia.html>

 2019

Norris, Christopher C. *Quantum Theory and the Flight from Relativism.*

Nieves, José Manuel. "Logran cambiar, desde el presente, un evento del pasado. " *ABC* 3 May 2012.\*

 <http://www.abc.es/20120501/ciencia/abci-cambio-pasado-201205010937.html>

 2012

\_\_\_\_\_. "Afirman haber conseguido el entrelazamiento cuántico de seres vivientes." *ABC* 26 Dec. 201.\* (Tardigrada).

 <https://www.abc.es/ciencia/abci-afirman-haber-conseguido-entrelazamiento-cuantico-seres-vivientes-202112260047_noticia.html>

 2021

Omnés, R. "Consistent Interpretations of Quantum Mechanics. " *Review of Modern Physics* 64 (1992): 339-82.

Oppenheimer, J. Robert. "Thirty Years of Mesons." Lecture to the American Physical Society, 1966.

Oppenheimer, J. Robert, and Max Born. "On the Quantum Theory of Molecules." 1927.

Ortoli, Sven, and Jean-Pierre Pharabod. *Le Cantique des quantiques.* Paris: Le Livre de Poche.

Pais, A. "Einstein and the Quantum Theory." *Reviews of Modern Physics* 51 (1979): 863–914.

Pauli, Wolfgang. (Physicist, theorist of the exclusion principle, 1925).

Peat, F. D. *Einstein's Moon: Bell's Theorem and the Curious Quest for Quantum Reality.* Chicago: Contemporary Books, 1990.

Penrose, Roger. *The Emperor 's New Mind: Concerning Computers, Minds, and the Laws of Physics.* 1989.

\_\_\_\_\_. *La nueva mente del emperador.* Trans. Javier García Sanz. Introd. José Manuel Sánchez Ron. Barcelona: Círculo de Lectores, 1996.\*

\_\_\_\_\_. "On Gravity 's Role in Quantum State Reduction. " *Gen. Rel. Grav.* 28 (1996): 581.

\_\_\_\_\_. "The Mysteries of Quantum Physics. " In Penrose, *The Large, The Small and the Human Mind.* With Abner Shimony, Nancy Cartwright, and Stephen Hawking. Foreword by Malcolm Longair. Cambridge: Cambridge UP, 1997. 50-93.\*

\_\_\_\_\_. "Physics and the Mind. " In Penrose, *The Large, The Small and the Human Mind.* With Abner Shimony, Nancy Cartwright, and Stephen Hawking. Foreword by Malcolm Longair. Cambridge: Cambridge UP, 1997. 93-143.\*

Penrose, R., and C. J. Isham, eds. *Quantum Concepts in Space and Time.* Oxford: Oxford UP, 1986.

Poincaré, Henri. "La hipótesis de los cuantos. " In Poincaré, *Sobre la ciencia y el método.* Barcelona: Círculo de Lectores, 1997. 324-40.\*

Popper, Karl R. *Logik der Forschung.* Wien: Springer, 1935.

\_\_\_\_\_. *The Logic of Scientific Discovery.* New York: Basic Books, 1949. 1959.

\_\_\_\_\_. *The Logic of Scientific Discovery.* London, 1959.

\_\_\_\_\_. *La lógica de la investigación científica.* 1934. English ed. 1958. Trans. Víctor Sánchez de Zavala. Introd. José Manuel Sánchez Ron. Barcelona: Círculo de Lectores, 1997.\*

Prigogine, Ilya, and Isabelle Stengers. *La nueva alianza.* Madrid: Alianza, 1983.

\_\_\_\_\_. *La nueva alianza: Metamorfosis de la ciencia.*Trans. María Cristina Martín Sanz. Introd. Antonio F. Rañada. (Biblioteca Universal, Ciencia). Barcelona: Círculo de Lectores, 1997.\*

"Queerer Than We Can Suppose." *The Economist* 5 Jan. 2002: 58.

Rae, Alastair. *Quantum Physics: Illusion or Reality?* Cambridge: Cambridge UP, 1986.

\_\_\_\_\_. *Física cuántica: ¿Ilusión o realidad?* Madrid: Alianza, 1988.

Rueff, Jacques. *Visión quántica del universo.* Barcelona: Guadarrama.

Ryan, Marie-Laure. "Narrative/Science Entanglements: On the Thousand and One Literary Lives of Schrödinger 's Cat. " *Narrative* 19.2 (May 2011): 171-86.\*

Schrödinger, Erwin. "Die gegenwärtige Situation in der Quantenmechanik." *Naturwissenschaften* 23 (1935): 807-12; 823-28; 844-49.

\_\_\_\_\_. "La nueva mecánica ondulatoria. " In Heisenberg et al., *Física cuántica.* Barcelona: Círculo de Lectores, 1996.\*

Schrödinger, Erwin, Werner Heisenberg and Niels Bohr. *Física cuántica.* Trans. Wolfgang Strobl, Luis Pelayo, Miguel Ferrero Melgar and Xavier Zubiri. Introd. José Manuel Sánchez Ron. (Biblioteca Universal Opera Mundi, Ciencia). Barcelona: Círculo de Lectores, 1996.\*

Sánchez Ron, José Manuel. *Historia de la física cuántica.* Barcelona: Crítica, 2001.

Saunders, S., J. Barrett, A. Kent and D. Wallace, eds. *Many Worlds?* Oxford: Oxford UP, 2010. (Quantum physics).

Shimony, Abner. "On Mentality, Quantum Mechanics and the Actualization of Potentialities. " In *The Large, The Small and the Human Mind.* By Roger Penrose. With Abner Shimony, Nancy Cartwright, and Stephen Hawking. Foreword by Malcolm Longair. Cambridge: Cambridge UP, 1997. 144-60.\*

Smolin, Lee. *Three Roads to Quantum Gravity.* 2000. New York: Basic Books, 2001.

\_\_\_\_\_. *The Life of the Cosmos.*

\_\_\_\_\_. *Time Reborn: From the Crisis in Physics to the Future of the Universe.* Boston and New York: Houghton Mifflin, 2013;\* London: Allen Lane, 2013.

\_\_\_\_\_. *Einstein's Unfinished Revolution.* 2019.

"Spooky Action at a Distance." *Christian Science Monitor* 4 oct. 2001.

Stapp, H. P. "The Copenhagen Interpretation." *American Journal of Physics* 40 (1972): 1098-116.

\_\_\_\_\_. *Mind, Matter, and Quantum Mechanics.* Berlin: Springer, 1993.

\_\_\_\_\_. "The Hard Problem: A Quantum Approach." *Journal of* *Consciousness Studies* 3.3 (1996): 194–210.

Turok, Neil. *The Universe Within: From Quantum to Cosmos.* House of Anansi Press, 2013.

Wallace, David. *The Emergent Multiverse.* Oxford: Oxford UP, 2012.\*

Wang, Chen, Yvonne Y. Gao et al. "A Schrödinger Cat Living in Two Boxes." Science 352.6289 (May 2016): 1087-090.\*

 <http://science.sciencemag.org/content/352/6289/1087>

 2016

Wright, Derek. "New Physics, Old Metaphysics: Quantum and Quotidian in Ian McEwan's *The Child in Time." Revista Alicantina de Estudios Ingleses* 10 (1997): 221-33.\*

Zurek, W. H. "Decoherence and the Transition from Quantum to Classical. " *Physics Today* 44.10 (1991): 36-44.

Wheeler, J. A., and W. H. Zurek, eds. *Quantum Theory and Measurement.* Princeton (NJ): Princeton UP, 1983.

Wiener, Norbert, A. Siegel, B. Rankin, W. T. Martin, *Differential Space, Quantum Systems and Prediction.* Cambridge (MA): MIT Press, 1966.

Bibliographies

García Landa, José Ángel. "Quantum theory. " From *A Bibliography of Literary Theory, Criticism and Philology.* *Google Docs*

 [https://docs.google.com/viewer?a=v&q=cache:1LmfPjCWswkJ:www.unizar.es/departamentos/filologia\_inglesa/garciala/bibliography/Subjects/z.Other.subjects/Motifs/Q/Quantum.theory.doc](https://docs.google.com/viewer?a=v&q=cache:1LmfPjCWswkJ:www.unizar.es/departamentos/filologia_inglesa/garciala/bibliography/Subjects/z.Other.subjects/Motifs/Q/Quantum.theory.doc+&hl=es&gl=es&pid=bl&srcid=ADGEESjzZj8lRBXj8jZrCdRMVAd1WbWNihxih64kzzTD8dAp2CVU)

 2012

Internet resources

"Boltzmann Brain." *Wikipedia: The Free Encyclopedia.\**

 <http://en.wikipedia.org/wiki/Boltzmann_brain>

 2013

"Quantum Gravity." *Wikipedia: The Free Encyclopedia.\**

 <http://en.wikipedia.org/wiki/Quantum_gravity>

 2013

Journals

*Classical and Quantum Gravity*

Vol. 40.23 (2023).

DOI 10.1088/1361-6382/ad0422

Online at *IOPscience*

<https://iopscience.iop.org/article/10.1088/1361-6382/ad0422>

2023

*International Journal of Quantum Chemistry* 2 (1968).

##### *Physical Review D: Particles, Fields, Gravitation and Cosmology* 90 (2014).

 <https://journals.aps.org/prd/>

 2017

*Quanta Magazine*

 <https://www.quantamagazine.org/>

 2016

Literature

Fernández-Vidal, Sonia. *Quantic Love.* Novel. 2013.

Video

Brown, Harvey. "The Arrow of Time & the Many Worlds Interpretation." *YouTube (Brad Younger)* 28 Feb. 2015.\*

 <http://youtu.be/RwYcPra40CY>

 2015

Carroll, Sean. "Something Deeply Hidden: Quantum Worlds and the Emergence of Spacetime." Video lecture. (Talks at Google, 17 Sept. 2019). *YouTube (Talks at Google)* 4 Oct. 2021.\*

<https://youtu.be/F6FR08VylO4>

 2021

Fridman, Lex. "Stephen Wolfram: Cellular Automata, Computation, and Physics | Lex Fridman podcast #89." Video interview, 2019. *YouTube (Lex Fridman)*.\*

<https://youtu.be/ez773teNFYA>

2022

\_\_\_\_\_. "Stephen Wolfram: Fundamental Theory of Physics, Life, and the Universe | Lex Fridman Podcast #124." Video interview. *YouTube (Lex Fridman)* 16 Sept. 2020.\* (Models, Reducibility, Cybernetics, Computation, Pandemics, Theories, Quantum theory, Relativity, Mathematics, Multiverse)

<https://youtu.be/-t1_ffaFXao>

 2022

\_\_\_\_\_. "Brian Greene: Quantum Gravity, the Big Bang, Aliens, Death, and Meaning - Lex Fridman Podcast #232." Video. *YouTube (Lex Fridman)* 20 Oct. 2021.\* (Consciousness, future of humankind, space exploration, cosmology).

 <https://youtu.be/98HZanvAJ8Y>

 2022

\_\_\_\_\_. "Stephen Wolfram: Complexity and the Fabric of Reality | Lex Fridman Podcast #234." Video interview. *YouTube (Lex Fridman)* 27 Oct. 2021\* (Randomness, intelligence, physics, space-time, quantum theory, computation, consciousness, motion, space, time, topsight, models, multiverse, limitations, perspectivism, attention, simultaneity, perspectivism)

<https://youtu.be/4-SGpEInX_c>

2022

Punset, Eduard, et al. "Redes: La incertidumbre del universo cuántico." *RTVE* *(Redes)* 8 May 2011.\* (Vlatko Vedral, U of Oxford).

<https://www.rtve.es/alacarta/videos/redes/redes-incertidumbre-del-universo-cuantico/1094700/>

 2021

\_\_\_\_\_, et al. "Dios juega a los dados." (Redes 256). *YouTube (Redes, Divulgación y Cultura)* 5 July 2015.\* (John Gribbin).

 <https://youtu.be/p4653b_JFgc>

 2015

Royuela, Santiago. "El mayor error de Hawking. El profesor Amit Goswami y el misticismo cuántico." Video. *YouTube (Santiago Royuela Samit)* 7 April 2022.\*

<https://youtu.be/sD14tNDJTlc>

2022

\_\_\_\_\_. "Kepa quiere saber… Con Santi Royuela." Video. *YouTube (Santiago Royuela Samit)* 27 Sept. 2023.\* (Jaume Farreróns, Red Gladio, Italian fascists; Entropy, complexity, quantum physics).

<https://youtu.be/dZ75X7fGcTk>

 2023

Shariatmadari, Helen, writer and dir. "What Is Reality?" BBC Horizon (2010-11). Episode 9 of 15. *YouTube (Jenee Calmer)* 7 June 2015.\*

 <https://youtu.be/QFD0h9hhe_Q>

 2015

Smolin, Lee. "Einstein's Unfinished Revolution." Video. Lecture at Perimeter Institute. *YouTube* 18 April 2019.\*

 <https://youtu.be/r-L690pQhuo>

 2019

Susskind, Leonard. "Leonard Susskind on The World as Hologram." *YouTube (tvochannel)* 4 Nov. 2011.

 <http://youtu.be/2DIl3Hfh9tY>

 2013

See also Schrödinger; Planck; Heisenberg; Bohr.