

EXPOSITORY PUBLICATIONS, AND THE LIKE

REPRINTS FROM THE BOOKS AND UNCOMPRESSED OR ELABORATED VARIANTS

RELATED TO *LOGIQUE, LANGAGE ET THÉORIE DE L'INFORMATION* (1957)

- *Macroscopic statistical linguistics*. English Translation of Part I, by J. Cheek, Jr. Cambridge, MA: Harvard Computation Laboratory, 1957.

RELATED TO *LES OBJETS FRACTALS*, TROISIÈME ÉDITION (1989)

Survol du langage fractal: **Book B3**, 185-240.

- **www**. Excerpt from "Survol" translated into English: Fractal geometry: What is it and what does it do? *Proceedings of the Royal Society of London*: **A423**, May 8 1989, 3-16.
- Exact reproduction of the excerpt. *Fractals in the Natural Sciences*, Edited by M. Fleischmann D. J. Tildesley & R. C. Ball, Princeton: The University Press, 1990, 3-9.
- Exact reproduction of the excerpt. *Fractals: Selected Reprints*, Edited by Alan J. Hurd, College Park MD: American Association of Physics Teachers, 1989, 8-14.
- Shorter excerpt: An overview of the language of fractals. *The Fractal Approach to Heterogeneous Chemistry*. Edited by David Avnir, New York: Wiley, 1989, 3-9.
- **www**. Updated versions, in the form of several essays.

RELATED TO *THE FRACTAL GEOMETRY OF NATURE* (1982)

- Reprint Chapter 13, with additions. *Percolation Structures and Processes*. Eds Guy Deutscher, Richard Zaller, & Joan Adler. *Annals of the Israel Physical Society*: **5**, 1983, 59 – 80. Distributed by Adam Hilger, Bristol UK.
- Large excerpts in paraphrase, *Les Fractals (les chroniques de Rose Polymath)* a "comic book" by Ian C. Stewart. Paris: Belin. 1983.
- *The World Treasury of Physics, Astronomy and Mathematics*. Edited by Timothy Ferris. Boston: Little, Brown, 1991, 447-455.
- Russian translation of the preceding: *Chemistry and Life* (A journal of the Russian Academy of Sciences).
- Revised Chapters 1, 2, 3, 4, and 11. *The Wolf Prizes for Physics*. Singapore: World Scientific.
- **www** Uncompressed draft of a section. *Two heirs to the Great Chain of Being*. circa 1982.
- **www** Uncompressed draft of a section. *A crisis of intuition as viewed by Felix Klein and Hans Hahn and its resolution by fractal geometry*. circa 1982.
- Excerpts read by BBM. Audio-cassette on *Complexity and Chaos*. Nashville TN: Knowledge Products. 1993.
- Large excerpts in paraphrase. *In Praise of Fractals*, a poem by Emily Grosholz. *Hudson* (a magazine of literature and the arts): **LVI (1)**, 2003, 117 – 118.
- Minimally edited reproductions of Chapters 18 and 19. *Fractals and Chaos: The Mandelbrot Set and Beyond*. New York: Springer, 2004, 52-72 and 178-192.

RELATED TO *FRACTALS AND SCALING IN FINANCE* (1997)

- **www P**. Three fractal models in finance: discontinuity, concentration, risk. *Economic Notes* (Siena): **26**, 1997, 139-178.

RELATED TO *THE (MIS)BEHAVIOR OF MARKETS* (2004)

Excerpt: Do you see the pattern here? *Wired*, August 2004. *The Wall Street Journal*

Excerpt: A look at Market – Moving Numbers – Literally, *The Wall Street Journal*, July 27, 2004.

Great confusion since the Great Crash by Richard Hudson and Benoit Mandelbrot, Op-ed comment *Financial Times*, October 22, 2004.

Abstract of the whole book, with comments, by R. Dobelli and his staff, *getAbstract compressed knowledge*.

THEORY OF ART IN THE CONTEXT OF FRACTALS

Les fractales: objets mathématiques, modèles physiques et créations artistiques. *Actes du forum international des formes nouvelles* (Monte Carlo, Février 1983). Textes réunis par André Martin.

- *Actes du premier colloque image* (Biarritz, Mai 1984). Textes réunis par B. Picinbono, Cagnes-sur-Mer: Grets, 1-10.

Flare: A by-product of the study of a two-dimensional dynamical system, *IEEE Transactions on Circuits and Systems*: **36**, 1988, 768-769.

www. Fractals: an art for the sake of science. *Leonardo*: 1989, Supplemental Issue, 21-24.

- **www. F.** Version abrégée en français: Les images fractales: un art pour l'amour de la science et ses applications. *Sciences et Techniques*: Mai 1984, 16-19, 34-35 & 65.
- German translation of the French version: Eine Kunst zur Liebe der Wissenschaft. *Artware: Kunst und Elektronik*. Edited by David Galloway. Düsseldorf: Econ, 1987, 69-78.
- Reprint: *The Visual Mind: Art and Mathematics*. Edited by Michele Emmer. Leonardo Books. Cambridge MA: MIT Press, 1993, 11-14 and color Plate I.
- Portuguese translation: Fractais: uma forma de arte a bem da ciência (Tradução de Claudio da Costa). *Imagem -máquina; a era das tecnologias do virtual*. Textes réunis par André Parente. Rio de Janeiro: Editora 34, 1993, 195-200.

Natura ex Machina (with F.K. Musgrave), *IEEE Computer Graphics and its Applications*: January 1989, Front cover & 4-7.

The art of fractal landscapes (with F. K. Musgrave). *IBM Journal of Research and Development*: **35**, 1991, front and back covers & 535-540.

Was ist Schönheit? *NZZ Folio (Neuer Zürcher Zeitung)*: Mai 1993, 15.

www F. Les fractales, l'art algorithmique et le test de Turing. *La science et la métamorphose des arts*. Textes réunis par Raymond Daudel. Paris: Presses Universitaires de France, 1994, 39-52.

- Italian translation by Michele Emmer. *L'Unità*: 22 Aprile 1994, 2-5.

INFORMAL EXPOSITIONS OF OWN WORK

Phenomenological principles and statistical thermodynamics. Bibliographical and historical footnote. *Thermodynamics: A Unifying Science*. Edited by George N. Hatsopoulos and Joseph H. Keenan. Cambridge, MA: MIT Department of Mechanical Engineering, 1964.

- Partial reprint: *Principles of General Thermodynamics*, Edited by George N. Hatsopoulos and Joseph H. Keenan, New York: J. Wiley, 1965, XXXIX-XL.

www P. C. Macro-statistical models and aggregative laws of behavior, a general discussion.

Mathematics and Social Science I: Proceedings of the UNESCO Seminars (Menthon-Saint-Bernard, 1960 and Gösing, 1962).

Compiled by Saul Sternberg and others. The Hague: Mouton & Co., 1965, 213-215.

www P. Is there persistence in stock price movements? *Seminar on the Analysis of Security Prices*, held November 12-13, 1966 at the Graduate School of Business of the University of Chicago.
 •Reprint: *Staff/Board Conference of the National Bureau of Economic Research, Inc.* held September 17-20, 1969 at Montauk, Long Island, New York.

Operational hydrology using self-similar processes (with James R. Wallis). *Proceedings of the Fifth International Operations Research Conference, Venice 1969*. Edited by John Lawrence. London: Tavistock, and New York: Barnes & Noble, 1970, 265-282.

FE3.1 Le syndrome de la variance infinie et ses rapports avec la discontinuité des prix, *Economie Appliquée*: **26**, 1973, 321-348.

FE3.2 Le problème de la réalité des cycles lents et le syndrome de Joseph. *Economie Appliquée*: **26**, 1973, 349-365.

Physical objects with fractional dimension: seacoasts, galaxy clusters, turbulence and soap. *The Institute of Mathematics and its Applications (Great Britain) Bulletin*: **13**, Nos. 7/8, July/August 1977, 189-196. •Reprint: *Fluid Dynamics* (Les Houches, 1973). Edited by Roger Balian & Jean-Laurent Peube. London: Gordon & Breach, 1977, 557-578.

The fractal geometry of percolation, polymers and almost everything else. *Statistical Mechanics and Statistical Methods in Theory and Application, a Tribute to Elliott W. Montroll*. Edited by Uzi Landman. New York: Plenum, 1977, 331-342.

The fractal geometry of $1/f$ fluctuations. *Proceedings of the Symposium on $1/f$ Fluctuations*. (Tokyo 1977). Edited by T. Musha. Tokyo: Tokyo Institute of Technology, 1977, 206-212.

Getting snowflakes into shape. *New Scientist*: **78**, 1978, 808-810.
 •Letter to the Editor: The Menger Sponge. *Mathematical Intelligencer*: **1**, Summer 1978, 126.

www F. Des monstres de Cantor et Peano à la géométrie fractale de la nature. *Penser les mathématiques*. (Séminaire Jean Dieudonné, Maurice Loï & René Thom). Textes préparés par F. Guénara & G. Lelièvre. Collection Points-Sciences, Paris: Editions du Seuil, 1982, 226-251.
 •**www F.** Variant only available on the web: *Des monstres mathématiques* (de Bolzano, Cantor et Peano) au tohu-bohu de la nature.
 •Spanish translation: De los monstruos de Cantor y Peano a la geometria fractal de la naturaleza. *Pensar la matematica*, Barcelona: Tusquets, 1984, 111-138.
 •Japanese translation: Shizen no fraktal kikagaku ni okeru Cantor to Peano no monster. *Sugaku Gengo Genjitsu* **2** (Sugaku Seminar Books, **11**), Tokyo: Nihon Hyoron Sha, 1984, 111-141.
 •Italian translation: *La geometria della natura* (**Book E**), 1987, 49-91; 1949, 31-78.

The many faces of scaling: fractals, geometry of nature, and economics. *Self-Organization and Dissipative Structures*. Edited by William C. Schieve & Peter M. Allen. Austin, TX: University of Texas Press, 1982, 91-109.

www F. Les fractales, les monstres et la beauté. *Le débat: histoire, politique et société*: Mars 1983, 54-72.
 •Brief version: L'ordinateur aidant, les fractales domptent les monstres mathématiques et transforment l'intuition géométrique. *La Jaune et la Rouge*, Décembre 1982, 67-78.
 •Also: *Diplômés 83 de l'Ecole Polytechnique Fédérale de Lausanne*. Cover and 18-28.
 •Also: *Mosaic* (Zurich) 5/83, 18-20 and 6/83, 18-20.

Le géomètre qui refait le monde. *ça m'intéresse*: 29 Juillet 1983, 72-75.

Why is nature fractal and when should noises be scaling (with Richard F. Voss). *Proceedings of the 7th International Conference on Noise in Physical Systems and the 3rd International Conference on $1/f$ Noise*, Montpellier, 17-20 May, 1983. Edited by M. Savelli, G. Lecoy & J. P. Nougier, Amsterdam: North-Holland, 1984, 31-39.

The fractal vision (Letter to the Editor). *The Sciences*: **24**, 3, May/June 1984.

Order in the geometric chaos of roughness and fragmentation. Introduction to **b**, 1-3 and to **c**, 3-5.

- Shorter reprint: *Fractals in Engineering (Abstracts) / Les fractales et l'ingénieur* (Montréal, 1992). Edited by Claude Tricot & Francois Normant. 1992.

Fraktale Geometrie: der Computer macht eine neue Geometrie möglich.

75 Jahre IBM Deutschland, 1985, 122-127.

Fractals and the rebirth of iteration theory. *The Beauty of Fractals*, by Heinz-Otto Peitgen & Peter H. Richter, New York: Springer, 1986, 151-160.

- Preliminary version, together with a German translation: *Catalogue of the "Frontiers of Chaos" Exhibit*, Bremen: Mapart, 1985, 11-19.

Fractals: how to imitate the mountains, the clouds and the trees, and to create weird and wonderful new shapes. *Teaching Non-Linear Phenomena II: Chaos in Education* (Balatonfüred, Hungary, 1987). Edited by George Marx, Veszprem, 1988, 5-14.

- Landscapes on an imaginary planet. *Bioastronomy — The Next Steps*. Edited by George Marx. Dordrecht-Boston: Kluwer, 1988, 67-76.
- Fractal mountains and dragons, with an excursion through fractal music. *The State of the Art and the Future Trends of Acoustic Research* (Rome, April 1987). Rome: Institute of Acoustics O.M. Corbino, 1989, 57-82.
- Montañas y dragones fractales: la intuición en la matemática y en las ciencias. *Sobre la imaginación científica* (Barcelona, Mayo 1987). Edición de Jorge Wagensberg, Barcelona: Tusquets 1990, 177-204.
- Eine Computerformel fürs Matterhorn. *Chaos und Kreativität*. Edited by Gottlieb Guntern. Zürich-Berlin- New York: Scalo, 1995, 167-214.

Fractals: a geometry of nature. *The New Scientist*: September 15, 1990, cover & pp. 38-43.

- Reprint: *The New Scientist Guide to Chaos*. Edited by Nina Hall. London: Penguin, 122-135.
- Reprint: *Exploring Chaos: a Guide to the New Science of Disorder*. Edited by Nina Hall. New York: Norton, 1993, 122-135.

Fractal craft (Letter to the Editor). *The New Scientist*: September 14, 1991.

Fractals. *Chaos: The New Science* (Gustavus Adolphus Nobel Conference XXVI).

Edited by John M. Holte. Lanham MD: University Press of America, 1993, 1-27.

- Shortened Japanese translation by S. Miyajima & M. Suzuki. *Suuri Kagaku (Mathematical Sciences)*: **386**, August 1995, 74-83.
- Shortened English text, together with the above Japanese translation. *The Honda Prize for 1994*. Tokyo: Honda Foundation Report: **79**, 1995, 31 pp.
- Another shortened variant: Fractals as a Morphology of the Amorphous. Introduction to *Fractal Landscapes from the Real World*, by William Hirst. Manchester, UK: Cornerhouse Publications, 1994.
- Italian translation. Frattali. *Dalla tribù alla conquista dell'universo: Scienza, tecnologia e società*. A cura di Umberto Colombo e Giuseppe Lanzavecchia. Milano: Libri Scheiwiller, 2000, 195-204.
- Reprint: *The Colors of Infinity*, Edited by Nigel Gordon. Bath (UK): Clearpress, 2004, 46-65.
- Portuguese translation. Fractais. *Frontieras da Ciência*. Coordenadores Rui Fausto, Carlos Fiolhais & João Filipe Queiró. Lisboa : Gradiva & Imprensa da Universidade de Coimbra, 2003, 63-89.

www. F. Les inattendus des fractales. *Pour la Science*: **234**, Avril 1997, 10-12.

A Multifractal Walk Down Wall Street. *Scientific American*, February 1999, 50-53.

- Responses to "Letters to the Editor." *Scientific American*, June 1999, 6.
- Short advance version: Of dollars, deutschmarks and multifractality. *Convergence* (Supplement to the *Wall Street Journal Europe* of 17 November 1997), 10-11.
- Version abrégée en français: Les fractales et la bourse, *Pour la Science*: 242, Décembre 1997, 16-17.

- Not quite so short advanced version: *ASX Perspective* (Australian Stock Exchange), 1998, 4-7.
- Version élargie en français: Randonnées multifractales à Wall Street. *Les mathématiques sociales: (Dossier Pour la Science)*. Paris: Belin, 1999, 126-130.
- Edited reprint: Multifractal structure of financial prices and its implications. *Scientific bridges for 2000 and Beyond: A virtual colloquium by the Elf Professeurs de l'Académie des Sciences*. Paris: Tec et Doc (Librairie Lavoisier), 1999, 131-148.
- Edited reprint: Fractal financial fluctuations: do they threaten sustainability? *Science for Survival and Sustainable Development*. Città di Vaticano: Pontificia Academia Scientiarvm, MM, 299-319.
- Edited reprint: *Risks in Investment Accumulation Products of Financial Institutions*. Schaumburg IL: The Society of Actuaries, 2001, 19-24.
- Finnish advanced version: *Tietoviikko*.

Fractal geometry and the representation of nature. *New Ideas in Science and Arts*. Strasbourg: Council of Europe. 1997, pp 28-29.

Is nature fractal? (Letter to the Editor) *Science*: **279**, February 6, 1998, 783.

www F. L'anneau fractal: de l'art à l'art, à travers la géométrie, la finance et les sciences.

Le Monde (quotidien): 29 août 2000, 12.

- Short English version: **Book j**.
- Version française illustrée. *Université de tous les savoirs*. Sous la direction d'Yves Michaud. *Qu'est-ce que l'Univers?* Paris: Odile Jacob, **4**, 2001, 164-174.

The fractal universe. *The Origins of Creativity*. Edited by Karl H. Pfenninger & Valerie R. Shubik, Oxford: University Press, 2001, 185-206.

- Arabic translation, in progress.

Mouvement brownien, $4/3$ et le rôle de l'oeil en mathématiques. (Courrier des lecteurs) *Pour la Science*: 2002.

www C. Symmetry by dilation/reduction, fractals, and roughness, *Symmetry 2000*, edited by I. Hargittai and T. Laurent, **I**, 2002, 133-141.

The garden of fractal orders. *Il Corno du Heimdal*. Pio Manzu. 2003, pp 142-149.

- Italian translation: Il giardino degli ordini frattali, *ibid*.

Fractals and their role in education. Japanese Translation by Mitsugu Matsushita.

Sugaku Seminar (Special Issue on Complex Dynamical Systems), **42**, 2003, 8-16.

Fractals. *Japan Prize 2003*. Tokyo: The Science and Technology Foundation of Japan. pp.