

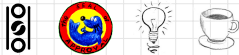
# References

## Principles of Complex Systems

### CSYS/MATH 300, Fall, 2010

Prof. Peter Dodds

Department of Mathematics & Statistics  
Center for Complex Systems  
Vermont Advanced Computing Center  
University of Vermont



Licensed under the *Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License*.

References

References



1 of 24

# References III

- [18] E. D. Beinhocker.  
**The Origin of Wealth.**  
Harvard Business School Press, Cambridge, MA, 2006.
- [19] A. Bejan.  
**Shape and Structure, from Engineering to Nature.**  
Cambridge Univ. Press, Cambridge, UK, 2000.
- [20] P. Bennett and P. Harvey.  
**Active and resting metabolism in birds—allometry, phylogeny and ecology.**  
*J. Zool.*, 213:327–363, 1967. pdf (E)
- [21] B. J. L. Berry.  
**Déjà vu, Mr. Krugman.**  
*Urban Geography*, 20:1–2, 1999. pdf (E)
- [22] L. M. A. Bettencourt, J. Lobo, D. Helbing, Kühnhert, and G. B. West.  
**Growth, innovation, scaling, and the pace of life in cities.**  
*Proc. Natl. Acad. Sci.*, 104(17):7301–7306, 2007. pdf (E)
- [23] S. Bikhchandani, D. Hirshleifer, and I. Welch.  
**A theory of fads, fashion, custom, and cultural change as informational cascades.**  
*J. Polit. Econ.*, 100:992–1026, 1992.
- [24] S. Bikhchandani, D. Hirshleifer, and I. Welch.  
**Learning from the behavior of others: Conformity, fads, and informational cascades.**  
*J. Econ. Perspect.*, 12(3):151–170, 1998. pdf (E)
- [25] P. M. Blau and J. E. Schwartz.  
**Crosscutting Social Circles.**  
Academic Press, Orlando, FL, 1984.
- [26] K. L. Buxter, editor.  
**Energy Metabolism; Proceedings of the 3rd symposium held at Troon, Scotland, May 1964.**  
Academic Press, New York, 1965.

References

References



4 of 24

# References I

- [1] M. Abramowitz and I. A. Stegun, editors.  
**Handbook of Mathematical Functions.**  
Dover Publications, New York, 1974.
- [2] L. Adamic, R. Lukose, A. Puniyani, and B. Huberman.  
**Search in power-law networks.**  
*Phys. Rev. E*, 64:046135, 2001. pdf (E)
- [3] M. Adler.  
**Stardom and talent.**  
*American Economic Review*, pages 208–212, 1985. pdf (E)
- [4] R. Albert and A.-L. Barabási.  
**Statistical mechanics of complex networks.**  
*Rev. Mod. Phys.*, 74:47–97, 2002. pdf (E)
- [5] R. Albert, H. Jeong, and A.-L. Barabási.  
**Error and attack tolerance of complex networks.**  
*Nature*, 406:378–382, 2000. pdf (E)
- [6] P. W. Anderson.  
**More is different.**  
*Science*, 177(4047):393–396, 1972. pdf (E)
- [7] R. Axtell.  
**Zipf distribution of U.S. firm sizes.**  
*Science*, 293(5536):1818–1820, 2001. pdf (E)
- [8] R. Badli and A. Politi.  
**Complexity: Hierarchical structures and scaling in physics.**  
Cambridge University Press, Cambridge, UK, 1997.
- [9] P. Bak.  
**How Nature Works: the Science of Self-Organized Criticality.**  
Springer-Verlag, New York, 1996.

References

References



2 of 24

# References IV

- [27] J. J. Blum.  
**On the geometry of four-dimensions and the relationship between metabolism and body mass.**  
*J. Theor. Biol.*, 64:599–601, 1977.
- [28] S. Boccaletti, V. Latora, Y. Moreno, M. Chavez, and D.-U. Hwang.  
**Complex networks: Structure and dynamics.**  
*Physics Reports*, 424:175–308, 2006. pdf (E)
- [29] N. Boccaro.  
**Modeling Complex Systems.**  
Springer-Verlag, New York, 2004.
- [30] J. C. Bohorquez, S. Gourley, A. R. Dixon, M. Spagat, and N. F. Johnson.  
**Common ecology quantifies human insurgency.**  
*Nature*, 462:911–914, 2009. pdf (E)
- [31] J. Bollen, H. Van de Sompel, A. Hagberg, L. Bettencourt, R. Chute, M. A. Rodriguez, and B. Lyudmila.  
**Clickstream data yields high-resolution maps of science.**  
*PLoS ONE*, 4:e4803, 2009. pdf (E)
- [32] S. Bornholdt and H. Ebel.  
**World Wide Web scaling exponent from Simon's 1955 model.**  
*Phys. Rev. E*, 64:035104(R), 2001. pdf (E)
- [33] S. Bornholdt and H. G. Schuster, editors.  
**Handbook of Graphs and Networks.**  
Wiley-VCH, Berlin, 2003.
- [34] R. L. Breiger.  
**The duality of persons and groups.**  
*Social Forces*, 53(2):181–190, 1974. pdf (E)

References

References



5 of 24

# References II

- [10] P. Bak, C. Tang, and K. Wiesenfeld.  
**Self-organized criticality - an explanation of 1/f noise.**  
*Phys. Rev. Lett.*, 59(4):381–384, 1987. pdf (E)
- [11] M. Balinski and R. Laraki.  
**A theory of measuring, electing, and ranking.**  
*Proc. Natl. Acad. Sci.*, 104(21):8720–8725, 2007. pdf (E)
- [12] P. Ball.  
**Critical Mass: How One Thing Leads to Another.**  
Farrar, Straus, and Giroux, New York, 2004.
- [13] J. R. Banavar, A. Maritan, and A. Rinaldo.  
**Size and form in efficient transportation networks.**  
*Nature*, 399:130–132, 1999. pdf (E)
- [14] J. R. Banavar, M. E. Moses, J. H. Brown, J. Damuth, A. Rinaldo, R. M. Sibly, and A. Maritan.  
**A general basis for quarter-power scaling in animals.**  
*Proc. Natl. Acad. Sci.*, 107:15816–15820, 2010. pdf (E)
- [15] Y. Bar-Yam.  
**Dynamics of Complex Systems.**  
Westview Press, Boulder, CO, 2003.
- [16] A.-L. Barabási and R. Albert.  
**Emergence of scaling in random networks.**  
*Science*, 286:509–511, 1999. pdf (E)
- [17] M. A. Bedau.  
**Weak emergence.**  
In J. Tomberlin, editor, *Philosophical Perspectives: Mind, Causation, and World*, volume 11, pages 375–399. Blackwell, Malden, MA, 1997. pdf (E)

References

References



3 of 24

# References V

- [35] D. Brockmann, L. Hufnagel, and T. Geisel.  
**The scaling laws of human travel.**  
*Nature*, pages 462–465, 2006. pdf (E)
- [36] S. Brody.  
**Bioenergetics and Growth.**  
Reinhold, New York, 1945.  
reprint.
- [37] S. V. Buldyrev, R. Parshani, G. Paul, H. E. Stanley, and S. Havin.  
**Catastrophic cascade of failures in interdependent networks.**  
*Nature*, 464:1025–1028, 2010. pdf (E)
- [38] J. T. Cacioppo, J. H. Fowler, and N. A. Christakis.  
**Alone in the crowd: The structure and spread of loneliness in a large social network.**  
*Journal of Personality and Social Psychology*, 97:977–991, 2009. pdf (E)
- [39] J. M. Carlson and J. Doyle.  
**Highly optimized tolerance: A mechanism for power laws in design systems.**  
*Phys. Rev. E*, 60(2):1412–1427, 1999. pdf (E)
- [40] J. M. Carlson and J. Doyle.  
**Highly optimized tolerance: Robustness and design in complex systems.**  
*Phys. Rev. Lett.*, 84(11):2529–2532, 2000. pdf (E)
- [41] J. M. Carlson and J. Doyle.  
**Complexity and robustness.**  
*Proc. Natl. Acad. Sci.*, 99:2538–2545, 2002. pdf (E)
- [42] E. Castronova.  
**Synthetic Worlds: The Business and Culture of Online Games.**  
University of Chicago Press, Chicago, IL, 2005.

References

References



6 of 24

## References VI

- [43] I. D. Chasa, C. Tovey, D. Spangler-Martin, and M. Manfredonia. Individual differences versus social dynamics in the formation of animal dominance hierarchies. *Proc. Natl. Acad. Sci.*, 99(8):5744–5749, 2002. pdf (📄)
- [44] N. A. Christakis and J. H. Fowler. The spread of obesity in a large social network over 32 years. *New England Journal of Medicine*, 357:370–379, 2007. pdf (📄)
- [45] N. A. Christakis and J. H. Fowler. The collective dynamics of smoking in a large social network. *New England Journal of Medicine*, 358:2249–2256, 2008. pdf (📄)
- [46] R. B. Cialdini. *Influence: Science and Practice*. Allyn and Bacon, Boston, MA, 4th edition, 2000.
- [47] A. Clauset, C. Moore, and M. E. J. Newman. Structural inference of hierarchies in networks, 2006. pdf (📄)
- [48] A. Clauset, C. Moore, and M. E. J. Newman. Hierarchical structure and the prediction of missing links in networks. *Nature*, 453:98–101, 2008. pdf (📄)
- [49] A. Clauset, M. Young, and K. S. Gleditsch. On the Frequency of Severe Terrorist Events. *Journal of Conflict Resolution*, 51(1):58–87, 2007. pdf (📄)
- [50] J. S. Coleman. *Foundations of Social Theory*. Belknap Press, Cambridge, MA, 1994.
- [51] M. H. DeGroot. *Probability and Statistics*. Addison-Wesley, Reading, Massachusetts, 1975.

References

References



7 of 24

## References IX

- [68] R. Foote. Mathematics and complex systems. *Science*, 318:410–412, 2007. pdf (📄)
- [69] J. H. Fowler and N. A. Christakis. Dynamic spread of happiness in a large social network: longitudinal analysis over 20 years in the Framingham Heart Study. *BMJ*, 337:article #2338, 2008. pdf (📄)
- [70] G. Gallie. *Dialogues Concerning Two New Sciences*. Kessinger Publishing, 2010. Translated by Henry Crew and Alfonso De Salvia.
- [71] M. T. Gastner and M. E. J. Newman. Shape and efficiency in spatial distribution networks. *J. Stat. Mech.: Theor. & Exp.*, 1:P01015, 2006. pdf (📄)
- [72] R. Gibrat. *Les inégalités économiques*. Librairie du Recueil Sirey, Paris, France, 1931.
- [73] M. Gladwell. *The Tipping Point*. Little, Brown and Company, New York, 2000.
- [74] D. S. Glazier. Beyond the '3/4-power law': variation in the intra- and interspecific scaling of metabolic rate in animals. *Biol. Rev.*, 80:611–662, 2005. pdf (📄)
- [75] D. S. Glazier. The 3/4-power law is not universal: Evolution of isometric, ontogenetic metabolic scaling in pelagic animals. *BioScience*, 56:325–332, 2006. pdf (📄)

References

References



10 of 24

## References VII

- [52] P. S. Dodds. Optimal form of branching supply and collection networks. *Phys. Rev. Lett.*, 104(4):048702, 2010. pdf (📄)
- [53] P. S. Dodds, R. Muhamad, and D. J. Watts. An experimental study of search in global social networks. *Science*, 301:827–829, 2003. pdf (📄)
- [54] P. S. Dodds and D. H. Rothman. Unified view of scaling laws for river networks. *Physical Review E*, 59(5):4865–4877, 1999. pdf (📄)
- [55] P. S. Dodds and D. H. Rothman. Scaling, universality, and geomorphology. *Annu. Rev. Earth Planet. Sci.*, 28:571–610, 2000. pdf (📄)
- [56] P. S. Dodds, D. H. Rothman, and J. S. Weitz. Re-examination of the '3/4-law' of metabolism. *Journal of Theoretical Biology*, 209:9–27, 2001. pdf (📄)
- [57] P. S. Dodds and D. J. Watts. Universal behavior in a generalized model of contagion. *Phys. Rev. Lett.*, 92:218701, 2004. pdf (📄)
- [58] P. S. Dodds and D. J. Watts. A generalized model of social and biological contagion. *J. Theor. Biol.*, 232:587–604, 2005. pdf (📄)
- [59] S. N. Dorogovtsev and J. F. F. Mendes. *Evolution of Networks*. Oxford University Press, Oxford, UK, 2003.

References

References



8 of 24

## References X

- [76] K.-I. Goh, G. Salvi, B. Kahng, and D. Kim. Skeleton and fractal scaling in complex networks. *Phys. Rev. Lett.*, 96:018701, 2006. pdf (📄)
- [77] M. C. González, C. A. Hidalgo, and A.-L. Barabási. Understanding individual human mobility patterns. *Nature*, 453:779–782, 2008. pdf (📄)
- [78] I. Gradshteyn and I. Ryzhik. *Table of Integrals, Series, and Products*. Academic Press, San Diego, fifth edition, 1994.
- [79] M. Granovetter. Threshold models of collective behavior. *Am. J. Sociol.*, 83(6):1420–1443, 1978. pdf (📄)
- [80] M. Granovetter and R. Soong. Threshold models of diversity: Chinese restaurants, residential segregation, and the spiral of silence. *Sociological Methodology*, 18:69–104, 1988. pdf (📄)
- [81] M. S. Granovetter and R. Soong. Threshold models of interpersonal effects in consumer demand. *Journal of Economic Behavior & Organization*, 7:83–99, 1986. Formulates threshold as function of price, and introduces exogenous supply curve. pdf (📄)
- [82] J. T. Hack. Studies of longitudinal stream profiles in Virginia and Maryland. *United States Geological Survey Professional Paper*, 294-B:45–97, 1957.
- [83] A. Halevy, P. Norvig, and F. Pereira. The unreasonable effectiveness of data. *IEEE Intelligent Systems*, 24:8–12, 2009. pdf (📄)

References

References



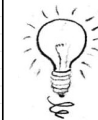
11 of 24

## References VIII

- [60] S. Douady and Y. Couder. Phyllotaxis as a dynamical self organizing process Part I: The spiral modes resulting from time-periodic iterations. *J. Theor. Biol.*, 178:255–274, 1996. pdf (📄)
- [61] S. Douady and Y. Couder. Phyllotaxis as a dynamical self organizing process Part II: The spontaneous formation of a periodicity and the coexistence of spiral and whorled patterns. *J. Theor. Biol.*, 178:275–294, 1996. pdf (📄)
- [62] S. Douady and Y. Couder. Phyllotaxis as a dynamical self organizing process Part III: The simulation of the transient regimes of ontogeny. *J. Theor. Biol.*, 178:295–312, 1996. pdf (📄)
- [63] R. M. D'Souza, C. Borgs, J. T. Chayes, N. Berger, and R. D. Kleinberg. Emergence of tempered preferential attachment from optimization. *Proc. Natl. Acad. Sci.*, 104:6112–6117, 2007. pdf (📄)
- [64] A. E. Economos. Elastic and/or geometric similarity in mammalian design. *Journal of Theoretical Biology*, 103:167–172, 1983. pdf (📄)
- [65] W. Feller. *An Introduction to Probability Theory and Its Applications*, volume I. John Wiley & Sons, New York, third edition, 1968.
- [66] R. Ferrer i Cancho and R. Solé. The small world of human language. *Proc. R. Soc. Lond. B*, 26:2261–2265, 2001. pdf (📄)
- [67] R. Ferrer i Cancho and R. V. Solé. Zipf's law and random texts. *Advances in Complex Systems*, 5(1):1–6, 2002.

References

References



9 of 24

## References XI

- [84] A. Hemmingsen. The relation of standard (basal) energy metabolism to total fresh weight of living organisms. *Rep. Steno Mem. Hosp.*, 4:1–58, 1950. pdf (📄)
- [85] A. Hemmingsen. Energy metabolism as related to body size and respiratory surfaces, and its evolution. *Rep. Steno Mem. Hosp.*, 9:1–110, 1960. pdf (📄)
- [86] A. A. Hausser. Size and power in mammals. *Journal of Experimental Biology*, 160:25–54, 1991. pdf (📄)
- [87] C. A. Hidalgo, B. Klinger, A.-L. Barabási, and R. Hausman. The product space conditions the development of nations. *Science*, 317:482–487, 2007. pdf (📄)
- [88] R. A. Hill, R. A. Bentley, and R. I. M. Dunbar. Network scaling reveals consistent fractal pattern in hierarchical mammalian societies. *Biology Letters*, 2008. pdf (📄)
- [89] T. P. Hill. The first-digit phenomenon. *American Scientist*, 86:358–, 1998.
- [90] E. Hoffer. *The True Believer: On The Nature Of Mass Movements*. Harper and Row, New York, 1951.
- [91] E. Hoffer. *The Passionate State of Mind: And Other Aphorisms*. Buccaneer Books, 1954.
- [92] B. A. Huberman and L. A. Adamic. Evolutionary dynamics of the World Wide Web. Technical report, Xerox Palo Alto Research Center, 1999.

References

References



12 of 24

## References XII

- [93] B. A. Huberman and L. A. Adamic.  
**The nature of markets in the World Wide Web.**  
*Quarterly Journal of Economic Commerce*, 1:5–12, 2000.
- [94] J. S. Huxley and G. Teisnier.  
**Terminology of relative growth.**  
*Nature*, 137:760–781, 1936. pdf (E)
- [95] H. J. Jensen.  
**Self-Organized Criticality: Emergent Complex Behavior in Physical and Biological Systems.**  
Cambridge Lecture Notes in Physics. Cambridge University Press, Cambridge, UK, 1998.
- [96] N. F. Johnson, M. Spagat, J. A. Restrepo, O. Becerra, J. C. Bohorquez, N. Suarez, E. M. Restrepo, and R. Zarama.  
**Universal patterns underlying ongoing wars and terrorism, 2006.** pdf (E)
- [97] L. Jost.  
**Entropy and diversity.**  
*Oikos*, 113:363–375, 2006. pdf (E)
- [98] E. Katz and P. F. Lazarsfeld.  
**Personal Influence.**  
The Free Press, New York, 1955.
- [99] S. Kauffman.  
**The Origins of Order.**  
Oxford, 1993.
- [100] M. Kearns, S. Suri, and N. Montfort.  
**An experimental study of the coloring problem on human subject networks.**  
*Science*, 313:824–827, 2006. pdf (E)
- [101] W. O. Kermack and A. G. McKendrick.  
**A contribution to the mathematical theory of epidemics.**  
*Proc. R. Soc. Lond. A*, 115:700–721, 1927. pdf (E)

References

References



13 of 24

## References XV

- [118] O. Malcai, O. Biham, and S. Solomon.  
**Power-law distributions and lévy-stable intermittent fluctuations in stochastic systems of many autocatalytic elements.**  
*Phys. Rev. E*, 60(2):1299–1303, 1999. pdf (E)
- [119] B. B. Mandelbrot.  
**An informational theory of the statistical structure of languages.**  
In W. Jackson, editor, *Communication Theory*, pages 486–502. Butterworth, Woburn, MA, 1953. pdf (E)
- [120] B. B. Mandelbrot.  
**A note on a class of skew distribution function. analysis and critique of a paper by H. A. Simon.**  
*Information and Control*, 2:90–99, 1959.
- [121] B. B. Mandelbrot.  
**Final note on a class of skew distribution functions: analysis and critique of a model due to H. A. Simon.**  
*Information and Control*, 4:198–216, 1961.
- [122] B. B. Mandelbrot.  
**Post scriptum to 'final note'.**  
*Information and Control*, 4:300–304, 1961.
- [123] T. McMahon.  
**Size and shape in biology.**  
*Science*, 179:1201–1204, 1973. pdf (E)
- [124] T. A. McMahon.  
**Allometry and biomechanics: Limb bones in adult ungulates.**  
*The American Naturalist*, 109:547–563, 1975. pdf (E)
- [125] T. A. McMahon and J. T. Bonner.  
**On Size and Life.**  
Scientific American Library, New York, 1983.

References

References



16 of 24

## References XIII

- [102] W. O. Kermack and A. G. McKendrick.  
**A contribution to the mathematical theory of epidemics. III. Further studies of the problem of endemicity.**  
*Proc. R. Soc. Lond. A*, 141(843):94–122, 1927. pdf (E)
- [103] W. O. Kermack and A. G. McKendrick.  
**Contributions to the mathematical theory of epidemics. II. The problem of endemicity.**  
*Proc. R. Soc. Lond. A*, 138(834):55–83, 1927. pdf (E)
- [104] M. Kleiber.  
**Body size and metabolism.**  
*Hilgardia*, 6:315–353, 1932. pdf (E)
- [105] J. Kleinberg.  
**Navigation in a small world.**  
*Nature*, 406:845, 2000. pdf (E)
- [106] J. M. Kleinberg.  
**Authoritative sources in a hyperlinked environment.**  
*Proc. 9th ACM-SIAM Symposium on Discrete Algorithms*, 1998. pdf (E)
- [107] G. Kossinets.  
**Effects of missing data in social networks.**  
*Social Networks*, 28(3):247–268, 2006. pdf (E)
- [108] G. Kossinets and D. J. Watts.  
**Empirical analysis of evolving social networks.**  
*Science*, 311:888–90, 2006. pdf (E)
- [109] M. Kretzschmar and M. Morris.  
**Measures of concurrency in networks and the spread of infectious disease.**  
*Math. Biosci.*, 133:165–95, 1996. pdf (E)

References

References



14 of 24

## References XVI

- [126] G. A. Miller.  
**Some effects of intermittent silence.**  
*American Journal of Psychology*, 70:311–314, 1957. pdf (E)
- [127] J. H. Miller and S. E. Page.  
**Complex Adaptive Systems: An introduction to computational models of social life.**  
Princeton University Press, Princeton, NJ, 2007.
- [128] R. Milo, N. Kashtan, S. Itzkovitz, M. E. J. Newman, and U. Alon.  
**On the uniform generation of random graphs with prescribed degree sequences, 2003.** pdf (E)
- [129] M. Mitzenmacher.  
**A brief history of generative models for power law and lognormal distributions.**  
*Internet Mathematics*, 1:226–251, 2003. pdf (E)
- [130] D. R. Montgomery and W. E. Dietrich.  
**Channel initiation and the problem of landscape scale.**  
*Science*, 255:826–30, 1992. pdf (E)
- [131] E. W. Montroll and M. W. Shlesinger.  
**On 1/f noise and other distributions with long tails.**  
*Proc. Natl. Acad. Sci.*, 79:3380–3383, 1982. pdf (E)
- [132] E. W. Montroll and M. W. Shlesinger.  
**Maximum entropy formalism, fractals, scaling phenomena, and 1/f noise: a tale of tails.**  
*J. Stat. Phys.*, 32:209–230, 1983.
- [133] C. D. Murray.  
**A relationship between circumference and weight in trees and its bearing on branching angles.**  
*J. Gen. Physiol.*, 10:725–729, 1927. pdf (E)
- [134] J. D. Murray.  
**Mathematical Biology.**  
Springer, New York, Third edition, 2002.

References

References



17 of 24

## References XIV

- [110] P. Krugman.  
**The self-organizing economy.**  
Blackwell Publishers, Cambridge, Massachusetts, 1995.
- [111] T. Kuran.  
**Now out of never: The element of surprise in the east european revolution of 1989.**  
*World Politics*, 44:7–48, 1991. pdf (E)
- [112] T. Kuran.  
**Private Truths, Public Lies: The Social Consequences of Preference Falsification.**  
Harvard University Press, Cambridge, MA, Reprint edition, 1997.
- [113] P. Laureti, L. Moret, and Y.-C. Zhang.  
**Aggregating partial, local evaluations to achieve global ranking.**  
*Physica A*, 345(3–4):705–712, 2004. pdf (E)
- [114] L. B. Leopold.  
**A View of the River.**  
Harvard University Press, Cambridge, MA, 1994.
- [115] E. Lieberman, J.-B. Michel, J. Jackson, T. Tang, and M. A. Nowak.  
**Quantifying the evolutionary dynamics of language.**  
*Nature*, 449:713–716, 2007. pdf (E)
- [116] A. J. Lotka.  
**The frequency distribution of scientific productivity.**  
*Journal of the Washington Academy of Science*, 16:317–323, 1926.
- [117] T. Maillart, D. Sornette, S. Spaeth, and G. von Krogh.  
**Empirical tests of Zipf's law mechanism in open source Linux distribution.**  
*Phys. Rev. Lett.*, 101(21):218701, 2008. pdf (E)

References

References



15 of 24

## References XVII

- [135] S. Newcomb.  
**Note on the frequency of use of the different digits in natural numbers.**  
*American Journal of Mathematics*, 4:39–40, 1881. pdf (E)
- [136] M. Newman.  
**Assortative mixing in networks.**  
*Phys. Rev. Lett.*, 89:208701, 2002. pdf (E)
- [137] M. E. J. Newman.  
**The structure and function of complex networks.**  
*SIAM Review*, 45(2):167–256, 2003. pdf (E)
- [138] M. E. J. Newman, M. Girvan, and J. D. Farmer.  
**Optimal design, robustness, and risk aversion.**  
*Phys. Rev. Lett.*, 89:028301, 2002.
- [139] M. A. Nowak.  
**Five rules for the evolution of cooperation.**  
*Science*, 314:1560–1563, 2006. pdf (E)
- [140] W. H. Press, S. A. Teukolsky, W. T. Vetterling, and B. P. Flannery.  
**Numerical Recipes in C.**  
Cambridge University Press, second edition, 1992.
- [141] D. J. d. S. Price.  
**Networks of scientific papers.**  
*Science*, 149:510–515, 1965. pdf (E)
- [142] D. J. d. S. Price.  
**A general theory of bibliometric and other cumulative advantage processes.**  
*J. Amer. Soc. Inform. Sci.*, 27:292–306, 1976.
- [143] F. Radicchi, J. J. Ramasco, A. Barrat, and S. Fortunato.  
**Complex networks renormalization: Flows and fixed points.**  
*Phys. Rev. Lett.*, 101:148701, 2008. pdf (E)

References

References



18 of 24

## References XVIII

- [144] J. M. V. Rayner.  
Linear relations in biomechanics: the statistics of scaling functions.  
*J. Zool. Lond. (A)*, 206:415–439, 1985.
- [145] P. J. Rentfrow, S. D. Gosling, and J. Potter.  
A theory of the emergence, persistence, and expression of geographic variation in psychological characteristics.  
*Perspectives on Psychological Science*, 3:339–369, 2008. pdf (📄)
- [146] C. J. Rhodes and R. M. Anderson.  
Power laws governing epidemics in isolated populations.  
*Nature*, 381:600–602, 1996. pdf (📄)
- [147] I. Rodriguez-Iturbe and A. Rinaldo.  
**Fractal River Basins: Chance and Self-Organization**.  
Cambridge University Press, Cambridge, UK, 1997.
- [148] S. Rosen.  
The economics of superstars.  
*Am. Econ. Rev.*, 71:845–858, 1981. pdf (📄)
- [149] M. Rubner.  
Ueber den einfluss der körpergrösse auf stoffund kraftwechsel.  
*Z. Biol.*, 19:535–562, 1883. pdf (📄)
- [150] M. J. Salganik, P. S. Dodds, and D. J. Watts.  
An experimental study of inequality and unpredictability in an artificial cultural market.  
*Science*, 311:854–856, 2006. pdf (📄)
- [151] P. A. Samuelson.  
A note on alternative regressions.  
*Econometrica*, 10:80–83, 1942. pdf (📄)

References

References



19 of 24

## References XXI

- [169] W. R. Stahl.  
Scaling of respiratory variables in mammals.  
*Journal of Applied Physiology*, 22:453–460, 1967.
- [170] D. Stauffer and A. Aharony.  
**Introduction to Percolation Theory**.  
Taylor & Francis, Washington, D.C., Second edition, 1992.
- [171] S. H. Strogatz.  
**Romanesque networks**.  
*Nature*, 433:365–366, 2005. pdf (📄)
- [172] C. R. Sunstein.  
**Infotopia: How many minds produce knowledge**.  
Oxford University Press, New York, 2006.
- [173] N. N. Taleb.  
**The Black Swan**.  
Random House, New York, 2007.
- [174] D. W. Thompson.  
**On Growth and Form**.  
Cambridge University Press, Great Britain, 2nd edition, 1952.
- [175] D. W. Thompson.  
**On Growth and Form — Abridged Edition**.  
Cambridge University Press, Great Britain, 1961.
- [176] E. Tokunaga.  
The composition of drainage network in Toyohira River Basin and the valuation of Horton's first law.  
*Geophysical Bulletin of Hokkaido University*, 15:1–19, 1966.
- [177] J. Travers and S. Milgram.  
An experimental study of the small world problem.  
*Sociometry*, 32:425–443, 1969. pdf (📄)

References

References



22 of 24

## References XIX

- [152] Sarrus and Rameaux.  
Rapport sur une mémoire adressé à l'Académie de Médecine.  
*Bull. Acad. R. Méd. (Paris)*, 3:1094–1100, 1838–39.
- [153] V. M. Savage, E. J. Deeds, and W. Fontana.  
Sizing up allometric scaling theory.  
*PLoS Computational Biology*, 4:e1000171, 2008. pdf (📄)
- [154] M. Scheffer, J. Bascompte, W. A. Brock, V. Brovkin, S. R. Carpenter, V. Dakos, H. Held, E. H. van Nes, M. Rietkerk, and G. Sugihara.  
Early-warning signals for critical transition.  
*Nature*, 461:53–59, 2009. pdf (📄)
- [155] A. E. Scheidegger.  
The algebra of stream-order numbers.  
*United States Geological Survey Professional Paper*, 525-B:187–B189, 1967.
- [156] T. Schelling.  
Dynamic models of segregation.  
*J. Math. Sociol.*, 1:143–186, 1971.
- [157] T. C. Schelling.  
Hockey helmets, concealed weapons, and daylight saving: A study of binary choices with externalities.  
*J. Conflict Resolut.*, 17:381–428, 1973. pdf (📄)
- [158] T. C. Schelling.  
**Micromotives and Macrobehavior**.  
Norton, New York, 1978.
- [159] S. S. Shen-Orr, R. Milo, S. Mangan, and U. Alon.  
Network motifs in the transcriptional regulation network of *Escherichia coli*.  
*Nature Genetics*, pages 64–68, 2002. pdf (📄)

References

References



20 of 24

## References XXII

- [178] P. Turchin.  
**Historical Dynamics: Why States Rise and Fall**.  
Princeton University Press, Princeton, NJ, 2003.
- [179] D. L. Turcotte, J. D. Pelletier, and W. I. Newman.  
Networks with side branching in biology.  
*Journal of Theoretical Biology*, 193:577–592, 1998. pdf (📄)
- [180] P. B. Umbanhowar, F. Melo, and H. L. Swinney.  
Localized excitations in a vertically vibrated granular layer.  
*Nature*, 382:793–6, 1996. pdf (📄)
- [181] F. Vega-Redondo.  
**Complex Social Networks**.  
Cambridge University Press, 2007.
- [182] S. Wasserman and K. Faust.  
**Social Network Analysis: Methods and Applications**.  
Cambridge University Press, Cambridge, UK, 1994.
- [183] D. J. Watts.  
A simple model of global cascades on random networks.  
*Proc. Natl. Acad. Sci.*, 99(9):5766–5771, 2002. pdf (📄)
- [184] D. J. Watts.  
**Six Degrees**.  
Norton, New York, 2003.
- [185] D. J. Watts, P. S. Dodds, and M. E. J. Newman.  
Identity and search in social networks.  
*Science*, 296:1302–1305, 2002. pdf (📄)
- [186] D. J. Watts and S. J. Strogatz.  
Collective dynamics of 'small-world' networks.  
*Nature*, 393:440–442, 1998. pdf (📄)

References

References



23 of 24

## References XX

- [160] G. Simmel.  
The number of members as determining the sociological form of the group. I.  
*American Journal of Sociology*, 8:1–46, 1902.
- [161] H. A. Simon.  
On a class of skew distribution functions.  
*Biometrika*, 42:425–440, 1955. pdf (📄)
- [162] H. A. Simon.  
Some further notes on a class of skew distribution functions.  
*Information and Control*, 3:80–88, 1960.
- [163] H. A. Simon.  
Reply to Dr. Mandelbrot's post scriptum.  
*Information and Control*, 4:305–308, 1961.
- [164] H. A. Simon.  
Reply to 'final note' by Benoît Mandelbrot.  
*Information and Control*, 4:217–223, 1961.
- [165] C. Song, S. Havlin, and H. A. Makse.  
Self-similarity of complex networks.  
*Nature*, 433:392–395, 2005. pdf (📄)
- [166] C. Song, S. Havlin, and H. A. Makse.  
Origins of fractality in the growth of complex networks.  
*Nature Physics*, 2:275–281, 2006. pdf (📄)
- [167] D. Sornette.  
**Critical Phenomena in Natural Sciences**.  
Springer-Verlag, Berlin, 2nd edition, 2003.
- [168] J. Speakman.  
On Blum's four-dimensional geometric explanation for the 0.75 exponent in metabolic allometry.  
*J. Theor. Biol.*, 144(1):139–141, 1990. pdf (📄)

References

References



21 of 24

## References XXIII

- [187] G. B. West, J. H. Brown, and B. J. Enquist.  
A general model for the origin of allometric scaling laws in biology.  
*Science*, 276:122–126, 1997. pdf (📄)
- [188] C. R. White, P. Cassey, and T. M. Blackburn.  
Allometric exponents do not support a universal metabolic allometry.  
*Ecology*, 88:315–323, 2007. pdf (📄)
- [189] C. R. White and R. S. Seymour.  
Allometric scaling of mammalian metabolism.  
*J. Exp. Biol.*, 208:1611–1619, 2005. pdf (📄)
- [190] U. Wilensky.  
**Netlogo segregation model**.  
<http://ccl.northwestern.edu/netlogo/models/Segregation>. Center for Connected Learning and Computer-Based Modeling, Northwestern University, Evanston, IL., 1998.
- [191] G. U. Yule.  
A mathematical theory of evolution, based on the conclusions of Dr J. C. Willis, F.R.S.  
*Phil. Trans. B*, 213:21–, 1924.
- [192] K. Zhang and T. J. Sejnowski.  
A universal scaling law between gray matter and white matter of cerebral cortex.  
*Proceedings of the National Academy of Sciences*, 97:5621–5626, 2000. pdf (📄)
- [193] G. K. Zipf.  
**Human Behaviour and the Principle of Least-Effort**.  
Addison-Wesley, Cambridge, MA, 1949.

References

References



24 of 24