

# References

## R1 On Aggregation and Rationality

- [R1.1] Aczel, J., et al.: Procedures for Synthesizing Ratio Judgments. *Jour. Math. Psychology* 27, 93–102
- [R1.2] Alsina, C., et al.: A Characterization of a Class of Aggregation Functions. *Fuzzy Sets and Systems* 53(1), 33–38 (1993)
- [R1.3] Bardossy, A., et al.: Combination of Fuzzy Numbers Representing Expert Opinions. *Fuzzy Sets and Systems* 57, 173–181 (1993)
- [R1.4] Buckley, J.J.: The Multiple Judge, Multiple Criteria Ranking Problem Fuzzy Set Approach. *Fuzzy Sets and Systems* 13, 25–37 (1984)
- [R1.5] Basile, L., et al.: Ordering for Classes of Aggregation Operators. *Intern. Jour. Uncertainty Fuzziness and Knowledge-Based Systems* 4(2), 145–156 (1996)
- [R1.6] Billot, A.: Aggregation of Preferences: The Fuzzy Case. *Theory and Decision* 30(1), 59–93 (1991)
- [R1.7] Blackorby, C., et al.: Utility vs. Equity. *Journal of Public Economics* 7, 365–381 (1977)
- [R1.8] Bye, B.V., et al.: A Fuzzy Algorithmic Approach to the Construction of Composite Indices: An Application to a Functional Limitation Index. *Intern. Jour. of General Systems* 11(2), 163–172 (1985)
- [R1.9] Cheng, C.-H.: A New Approach For Ranking Fuzzy Numbers by Distance Method. *Fuzzy Sets and Systems* 95(3), 307–318 (1998)
- [R1.10] Chichilinsky, G.: Social Aggregation and Continuity. *The Quart Jour. Econ.* 97, 337–352 (1982)
- [R1.11] Cho, S.-B.: Fuzzy Aggregation of Modular Neural Networks with Ordered Weighted Averaging Operators. *Intern. Jour. Approximate Reasoning* 13(4), 359–375 (1995)

- [R1.12] Choobineh, F., et al.: An Index for Ordering Fuzzy Numbers. *Fuzzy Sets and Systems* 54(3), 287–294 (1993)
- [R1.13] Cutello, V., et al.: Hierarchies of Intensity Preference Aggregations. *Intern. Jour. Approximate Reasoning* 10(2), 123–134 (1994)
- [R1.14] Dong, W.M., et al.: Fuzzy Weighted Averages and Implementation of the Extension Principle. *Fuzzy Sets and Systems* 21(2), 183–199 (1987)
- [R1.15] Dubois, D., et al.: Social Choice Axioms for Fuzzy Set Aggregation. *Fuzzy Sets and Systems* 43, 257–274 (1991)
- [R1.16] Dubois, D., et al.: A Review of Fuzzy Sets Aggregation Connectives. *Information Science* 36, 85–126 (1985)
- [R1.17] Gilardoni, G.L., et al.: On Reaching a Consensus Using DeGroot's Iterative Pooling. *Annals Statistics* 21, 391–401 (1993)
- [R1.18] Gorman, W.M.: Separable Utility and Aggregation. *Econometrica* 27, 469–481 (1959)
- [R1.19] Green, J.H.A.: *Aggregation in Economic Analysis: an Introductory Survey*. Princeton Univ. Press, Princeton (1964)
- [R1.20] Grunfield, Y., et al.: Is Aggregation Necessarily Bad. *Rev. Econ. Statistics* 42, 1–13 (1960)
- [R1.21] Harberger, A.C.: On the Use of Distributional Weights in Social Cost-Benefit Analysis. *Jour. Political Economy* 86(2), S87–S120 (1978)
- [R1.22] Harberger, A.C.: Basic Needs Versus Distributional Weights in Social Cost-Benefit Analysis. *Economic Development and Cultural Change* 32, 455–574 (1984)
- [R1.23] Herrera, F., et al.: Direct Approach Processes in Group Decision Making Using Linguistic OWA Operators. *Fuzzy Sets and Systems* 79(2), 175–190 (1996)
- [R1.24] Hsu, H.-M., et al.: Aggregation of Fuzzy Opinions under Group Decision Making. *Fuzzy Sets and Systems* 79(3), 279–286 (1996)
- [R1.25] Hurwicz, L.: Aggregation in Macroeconomic Models. *Econometrica* 20, 489–490 (1952)
- [R1.26] Krishnapuram, R., et al.: Fuzzy Connective-based Hierarchical Aggregation Networks for Decision Making. *Fuzzy Sets and Systems* 46, 11–27 (1992)
- [R1.27] Kuncheva, L.I., et al.: Fuzzy Consensus Aggregation Operator. *Fuzzy Sets and Systems* 79(3), 347–356 (1996)
- [R1.28] Layard, R.: On the Uses of Distributional Weights in Social Cost-Benefit Analysis. *Jour. of Political Economy* 88(5) (October 1986)

- 
- [R1.29] Lee, E.S., et al.: Comparison of Fuzzy Numbers based on the Probability Measures of Fuzzy Events. *Computer, Math. Applications* 15, 887–896 (1988)
- [R1.30] Liou, T., et al.: Fuzzy Weighted Average: An Improved Algorithm. *Fuzzy Sets and Systems* 49(3), 307–315 (1992)
- [R1.31] May, K.O.: Intransitivity, Utility and Aggregation in Preference Patterns. *Econometrica* 22(1), 1–13 (1954)
- [R1.32] McKelvey, R.D., et al.: Common Knowledge Consensus and Aggregate Information. *Econometrica* 54, 109–127 (1986)
- [R1.33] Meier, K.: Methods for Decision Making with Cardinal Numbers and Additive Aggregation. *Fuzzy Sets and Systems* 88(2), 135–159 (1997)
- [R1.34] Montero, J.: Rational Aggregation Rules. *Fuzzy Sets and Systems* 63(3), 267–276 (1994)
- [R1.35] Paun, G.: Impossibility Theorem for Indicators Aggregation. *Fuzzy Sets and Systems* 9(2), 205–210 (1983)
- [R1.36] Peston, M.H.: A View of the Aggregation Problem. *Review of Econ. Studies* 27, 58–64 (1959–1960)
- [R1.37] Sen, A.K.: Interpersonal Aggregation and Partial Comparability. *Econometrica* 38, 393–409 (1970)
- [R1.38] Shafer, G.: The Combination of Evidence. *International Jour. Of Intelligent Systems* 1, 155–179 (1986)
- [R1.39] Skala, H.J.: Concerning Ordered Weighted Averaging Aggregation Operators. *Statistical Papers* 32, 35–44 (1991)
- [R1.40] Theil, H.: *Linear Aggregation of Economic Relations*. North-Holland, Amsterdam (1954)
- [R1.41] Theil, H.: The Aggregation Implications of Identifiable Structural Macro-relations. *Econometrica* 27, 14–29 (1959)
- [R1.42] Yager, R.R.: MAM and MOM Operators for Aggregation. *Information Science* 69, 259–273 (1993)
- [R1.43] Yager, R.R.: Constrained OWA Aggregation. *Fuzzy Sets and Systems* 81(331), 125–145 (1996)
- [R1.44] Yager, R.R.: On the RAGE Aggregation Method with Application to Neural Networks and Decision Making. *Intern. Jour. Of Approximate Reasoning* 11(3), 175–204 (1994)
- [R1.45] Yager, R.R.: Aggregating Fuzzy Sets Represented by Belief Structures. *Jour. of Intelligent and Fuzzy Systems* 1(3), 215–224

## **R2 Cost-Benefit Rationality and Decision-Choice Processes**

- [R2.1] Adams, R.M., Hamilton, S.A., McCarl, B.A.: The Benefits of Pollution Control: The Case of Ozone and U.S. Agriculture. *American Journal of Agricultural Economics* 68(4), 886–893 (1986)
- [R2.2] Adams, R.M., McCarl, B.A.: Assessing the Benefits of Alternative Ozone Standards on Agriculture: The Role on Response Information. *Journal of Environmental Economics and Management* 12(3), 264–276 (1985)
- [R2.3] Anderson, R.C., Ostro, B.: Benefits Analysis and Air Quality Standard. *Natural Resources Journal* 3, 566–575 (1982)
- [R2.4] Bayless, M.: Measuring the Benefits of Air Quality Improvement: A Hedonic Salary Approach. *Journal of Environmental Economics and Management* 9(1), 81–99 (1982)
- [R2.5] Brady, G.L., Bower, B.T., Lakhani, H.A.: Estimates of the National Benefits and Costs of Improving Ambient Air Quality. *Journal of Environmental Management* 16(3), 191–210 (1983)
- [R2.6] Brookings Institution, Can Benefits and Costs of Public Investments be Measured, Brookings Research, Report #32, Washington, D.C. (1965)
- [R2.7] Bulter, J.R., Doessel, D.P.: Measuring Benefits in Health: A Clarification. *Scottish Journal of Political Economy* 28(2), 196–205 (1981)
- [R2.8] Cummings, R.G., et al.: General Methods for Benefit Assessment. In: Bentkover, J.D., et al. (eds.) *Benefit Assessment: The State of the Art*, Boston, Mass. D. Reidel, pp. 161–191 (1986)
- [R2.9] DeSalvo, J.S.: Benefits and Costs of New York City's Middle Income Housing Programs. *Journal of Political Economy* 83(4), 791–806 (1975)
- [R2.10] Dorfman, R. (ed.): *Measuring Benefits of Government Investments*. Brookings Institution, Washington (1965)
- [R2.11] Dunn Jr., R.M.: A Problem of Bias in Benefits of Government-Cost Analysis: Consumer Surplus Reconsidered. *Southern Economic Journal* 33(35), 337–342 (1967)
- [R2.12] Feldstein, M.S.: Net Social Benefit Calculation and the Public Investment Decision. *Oxford Economic Papers* 16(1), 114–131 (1964)
- [R2.13] Feltham, G.A.: The Value of Information. *Accounting Rev.*, 684–696 (1968)

- 
- [R2.14] Fisher, G.W.: Willingness-to-Pay for Probabilistic Improvements in Functional Health Status: A Psychological Perspective. In: Mushkin, S., Dunlop, D.W. (eds.) *Health: What Is It Worth? Measures of Health Benefits*, pp. 167–200. Pergamon Press, New York (1979)
- [R2.15] Foster, C.D., et al.: Estimating the Social Benefit of Constructing an Underground Railway in London. *Jour. of the Royal Stat. Society*, part I 126, 46–92 (1963)
- [R2.16] Freeman III, A.M.: *The Benefit of Environmental Improvement*. John Hopkins University press, Baltimore (1979)
- [R2.17] Freenbury, D.F., et al.: *Measuring Benefits of Water Pollution Abatement*. Academic Press, New York (1980)
- [R2.18] Greenly, D.A., et al.: *Economic Benefits and Improved Water Quality*. Westview Press, Boulder (1982)
- [R2.19] Grerking, S., et al.: What do We Know about Benefits of Reduced Mortality from Air Pollution Control. *Amer. Econ. Review* 71, 228–240 (1981)
- [R2.20] Hammond, C.M.H.: *The Benefits of Subsidized Housing Programs: An Intertemporal Approach*. Cambridge University Press, Cambridge (1987)
- [R2.21] Harrington, W., Portney, P.R.: Valuing the Benefits of Health and Safety Regulation. *Journal of Urban Economics* 22(1), 101–112 (1987)
- [R2.22] Juster, F.T.: *The Distribution of Economic Well-Being*. National Bureau of Economic Research, New York (1977)
- [R2.23] Krutilla, J.V.: Welfare Aspects of Benefit Cost Analysis. *Jour. of Political Econ.* 69(3), 226–235 (1961)
- [R2.24] Margolis, J.: Secondary Benefits, External Economies, and the Justification of Public Investment. *Review of Economics and Statistics* 39(3), 284–291 (1957)
- [R2.25] Mushkin, S., et al. (eds.): *Health: What Is It Worth? Measures of Health Benefits*. Pergamon Press, New York (1979)
- [R2.26] Rhoads, S.E. (ed.): *Valuing Life: Public Policy Dilemmas*. Westview Press, Boulder Colorado (1980)
- [R2.27] Rowe, R., et al.: An Experiment on the Economic Value of Visibility. *Jour. of Environ. Economics and Management* 7, 1–19 (1980)
- [R2.28] Starr, C.: Social Benefit Versus Technological Risk. *Science* 165, 1232–1238 (1969)

- [R2.29] Vaughn, W., et al.: *The Benefits of Water Pollution Control: Fresh Water Recreational Fishing*. Johns Hopkins Univ. Press, Baltimore (1982)
- [R2.30] Weisbrod, B.A.: *Benefit of Manpower Programs: Theoretical and Methodological Issues*. In: Somers, G.G., et al. (eds.) *Cost-Benefit Analysis of Manpower Policies, Proceedings of a North American Conference*, Kingston, Ontario, pp. 3–15 (1969)
- [R2.31] Willig, R.: *Consumer's Surplus without Apology*. *Amer. Econ. Review* 66, 589–597 (1976)

## **R2.1 On Cost-Benefit Rationality and Accounting Theory**

- [R2.1.1] Dean, J.: *Statistical Cost Estimation*. Bloomington. Indiana Univ. Press, IN (1976)
- [R2.1.2] Demski, J.S., et al.: *Cost Determination: A Conceptual Approach*. Iowa State University Press, Iowa (1976)
- [R2.1.3] Dompere, K.K.: *On Accounting Information and the Theory of Economic Aggregates*. Washington, DC A Working Paper, Howard University, Department of economics (1985)
- [R2.1.4] Humphreys, K.K. (ed.): *Project and Cost Engineer's Handbook*, 2nd edn. Dekker Inc., New York (1984)
- [R2.1.5] Johnston, J.: *Statistical Cost Analysis*. McGraw-Hill, New York (1972)
- [R2.1.6] Juster, F.T., et al. (eds.): *Social Accounting Systems*. Academic Press, New York (1981)
- [R2.1.7] Lev, B.: *Accounting and information theory: studies in research #2*, Sarasota, Fl American accounting Association. Brownell Associates Inc., USA (1969)
- [R2.1.8] Malstrom, E.M. (ed.): *Manufacturing Cost Engineering Handbook*. Dekker, New York (1984)
- [R2.1.9] Seidler, L.J., et al.: *Social Accounting: Theory, Issues and Cases*. Marville Pub. Co, Los Angeles (1975)
- [R2.1.10] Sterling, R.R.: *Decision-oriented financial accounting*. *Accounting Business Res.*, 198–208 (1972)

## **R2.2 On Cost-Benefit Rationality and Real Economic Costing**

- [R2.2.1] Akerlof, G., et al.: *The Economic Consequences of Cognitive Dissonance*. *Amer. Econ. Rev.* 72, 307–319 (1981)

- [R2.2.2] Alchian, A.: Costs. In: *International Encyclopedia of Social Sciences*, vol. 3, pp. 404–415. Macmillan, New York (1968)
- [R2.2.3] Andell, N.: Some Notes on Equating Private and Social Costs: Comment. *Southern Economic Journal* 33(1), 112 (1966)
- [R2.2.4] Berger, M.C., et al.: Valuing Changes in Health Risks: A Comparison of Alternative Measures. *Southern Economic Journal* 53(4), 967–984 (1987)
- [R2.2.5] Breckner, N.V., et al.: Costing of Systems. In: Enke, S. (ed.) *Defense Management*, pp. 42–59. Prentice-Hall, Englewood Cliffs (1967)
- [R2.2.6] Buchanan, J.: *Cost and Choice: An Inquiry in Economic Theory*, Chicago, Markham (1969)
- [R2.2.7] Bunker, J.P., Barnes, B.A., Mosteller, F. (eds.): *Cost, Risks and Benefits of Surgery*. Oxford University Press, New York (1977)
- [R2.2.8] Canning, J.B.: Some Divergence of Accounting Theory from Economic Theory. *Accounting Review* 4, 1–8 (1929)
- [R2.2.9] Cheung, S.N.S.: *The Myth of Social Cost: A Critique of Welfare Economics and the Implications for Public Policy*, Lacing, Sussex, U.K. Goron Pro-Print Co. (1978)
- [R2.2.10] Cicchetti, C.J., et al.: *The Cost of Congestion*, Cambridge, Mass, Ballinger (1976)
- [R2.2.11] Coase, R.H.: The Problem of Social Cost. *Journal of Law and Econ.* 3, 1–44 (1960)
- [R2.2.12] Davis, O.A., et al.: Some Notes on Equating Private and Social Cost. *South Econ.Jour.* 32(2), 113–126 (1965)
- [R2.2.13] Devine, E.J.: The treatment of Incommensurables in a Cost-Benefit Analysis. *Land Economics* 42(3), 383–387 (1966)
- [R2.2.14] Diamond, P.A.: The Opportunity Cost of Public Investment: Comment. *Quart. Jour. of Econ.* 82, 682–688 (1968)
- [R2.2.15] Enke, S. (ed.): *Defense Management*. Prentice-Hall, Englewood Cliffs (1967)
- [R2.2.16] Fabrycky, W.J., et al.: *Life-Cycle Cost and Economic Analysis*. Prentice-Hall, Englewood Cliffs (1991)
- [R2.2.17] Feldstein, M.S.: Opportunity Cost Calculations in Cost-Benefit Analysis. *Public Finance* 19(2), 117–139 (1964)
- [R2.2.18] Fisher, G.H.: Cost Functions and Budgets. In: Margolis, J. (ed.) *The Analysis of Public Output*, Washington, D.C., National Bureau of Economic Research, pp. 231–264 (1970)

- [R2.2.19] Fisher, G.: The Role of Cost-Utility Analysis. In: Novick, D. (ed.) Program Budgeting, pp. 61–79. Rinehart and Winston, New York (1969)
- [R2.2.20] Hahn, R.W., Hird, J.A.: The Costs and Benefits of Regulation: Review and Synthesis. *Yale Journal of Regulation* 8(1), 233–278 (1991)
- [R2.2.21] Harberger, A.: On Measuring the Social Opportunity cost of Public Funds. in the Discount Rate in Public Investment Evaluation, Rep. #17, Conference Proc. From Committee on Economics of Water Resources Dev. of Western Agric. Econ. Reach. Coun. Denver, December 17-19 (1968)
- [R2.2.22] Harberger, A.C.: On Measuring the Social Opportunity Cost of Public Funds. In: Harberger, A.C. (ed.) Project Evaluation: Collected Papers, pp. 94–122. Chicago Press, Chicago (1972)
- [R2.2.23] Harberger, A.C.: Project Evaluation: Collected Papers. Chicago Press, Chicago (1972)
- [R2.2.24] Hartunian, N.S., Smart, C.N., Thompson, M.S.: The Incidence and Economic Costs of Cancer, Motor Vehicle Injuries, Coronary Heart Disease and Stroke: A Comparative Analysis. *American Journal of Public Health* 70(12), 1249–1260 (1980)
- [R2.2.25] Hazilla, M., Kop, R.: Social Cost of Environmental Quality Regulations: A General Equilibrium Analysis. *Journal of Political Economy* 98(4), 853–873 (1990)
- [R2.2.26] Hufbauer, G.C., Elliott, K.A.: Measuring the Cost of Protection in the United States. Institute for International Economics, Washington, DC (1994)
- [R2.2.27] Judy, R.W.: Costs: Theoretical and Methodological Issues. In: Somers, G.G., et al. (eds.) Cost-Benefit Analysis of Manpower Policies, Proc. of North Amer. Conf., Industrial Relations Centre, pp. 16–29. Queens Univ., Kingston (1969)
- [R2.2.28] Jurgensen, H.: Private and Social Costs. *German Econ. Rev.* 2(4), 273–288 (1964)
- [R2.2.29] Knight, F.H.: some Fallacies in the Interpretation of Social Cost. In: Stigler, et al. (ed.) Readings in Price Theory, Homewood Ill, Richard Irvin, pp160-179 (1952)
- [R2.2.30] Ledebur, L.C.: The Problem of Social Cost. *American Jour.of Economics and Sociology* 26(4), 399–415 (1967)
- [R2.2.31] Marglis, S.A.: The Opportunity Costs of Public Investment. *Quarterly Journal of Econ.* 77, 249–274 (1963)



- 
- [R2.2.32] McCullough, J.D.: Cost Analysis for Planning Programming-Budgeting Cost-Benefit Studies, Santa Monica, Rand Corp. (1966)
- [R2.2.33] Margolis, J. (ed.): The Analysis of Public Output. National Bureau of Econ. Research, Washington (1970)
- [R2.2.34] de Melo, J., Tarr, D.: Welfare Costs of U.S. Quotas in Textiles, Steel and Autos. *The Review of Economics and Statistics* 72(3), 197–489 (1990)
- [R2.2.35] Mishan, E.J.: The Cost of Economic Growth, New York, Praeger (1971)
- [R2.2.36] Nicholas, A.: The Opportunity Costs of Public Investments; Comment. *Quarterly Jour. of Econ.* 78, 499–505 (1964)
- [R2.2.37] Ritter, J.: The Costs of Going Public. *Journal of Financial Economics* 19, 269–281 (1987)
- [R2.2.38] Rosen, H.: The Measurement of Excess Burden with Explicit Utility Functions. *Journal of Political Economy* 86, s121–s135 (1978)
- [R2.2.39] Senauer, B., Kinsey, J.K., Roe, T.: The Cost of Inaccurate Consumer Information: The Case of EPA Gas Mileage. *Journal of Consumer Affairs* 18(2), 193–212 (1984)
- [R2.2.40] Somers, G.G., et al. (eds.): Cost-Benefit Analysis of Manpower Policies. In: Proc. of North Amer. Conf., Industrial Relations Centre. Queens Univ., Kingston (1969)
- [R2.2.41] Steiner, P.G.: The Role of Alternative Cost in Project Design and Selection. *Quarterly, Jour. of Econ.* 79(3), 417–430 (1965)
- [R2.2.42] Steiner, P.G.: Measuring the Opportunity Costs of Government Investment, Research Paper P-490, Institute of Defense Analysis, Washington, D.C (1969)
- [R2.2.43] Stiler, G.J.: The Cost of Subsistence. *Jour. of Farm Economics* 27, 303–314 (1945)
- [R2.2.44] Stober, W., et al.: Cost Bias in Benefit-Cost Analysis: Comment. *Southern Econ. Jour.* 34(4), 563–568 (1968)
- [R2.2.45] Stuart, C.: Welfare Costs per Dollar of Additional Tax Revenue in the U.S. *American Economic Review*, pp. 352–362 (June 1984)
- [R2.2.46] Tullock, G.: Rent-Seeking. In: *The new Palgrave: A Dictionary of Economics*, p. 149. Macmillan, London (1987)
- [R2.2.47] Turvey, R.: On Divergences Between Social Cost and Private Cost. *Economica* 30(119), 309–313 (1963)
- [R2.2.48] Whitbread, M.: Measuring the Costs of Noise Nuisance From Aircraft. *Journal of Transport Economics and Policy* 12(2), 202–208 (1978)

- [R2.2.49] Worchester Jr., D.A.: Pecuniary and Technological Externality Factor and Social Costs. *Amer. Econ. Rev.* 59, 873–885 (1969)

### **R2.3 On Cost-Benefit Rationality and Decision-Choice Criteria**

- [R2.3.1] Arrow, K.J., Kurz, M.: Public Investment, The Rate of Return, and Optimal Fiscal Policy. John Hopkins Univ. Press, Baltimore (1970)
- [R2.3.2] Arzamastve, D.A.: Qualitative Analysis of the Relative Effectiveness of Capital Investment. In: MATEKON, pp. 3–25 (Fall 1970)
- [R2.3.3] Bailey, M.J.: Formal Criteria for Investment Decision. *Jour. of Political Econ.* 67(5), 476–488 (1959)
- [R2.3.4] Datta, B.: The Investment Criterion Problem. *Arthanitti* 1(2), 81–92 (1958)
- [R2.3.5] Davisson, W.: Public Investment Criteria. *Land Economics* 40(2), 154–162 (1964)
- [R2.3.6] Dompere, K.K.: The Theory of Aggregate Investment in Closed Economic Systems. Conn. Greenwood Press, Westport (1999)
- [R2.3.7] Dompere, K.K.: The Theory of Aggregate Investment and Output Dynamics in Open Economic Systems. Conn. Greenwood Press, Westport (1999)
- [R2.3.8] Eckstein, O.: Investment Criteria for Economic Development and the Theory of Intertemporal Welfare Economics. *Quarterly Jour. of Econ.* 71, 56–85 (1957)
- [R2.3.9] Eckstein, O.: Water-resource Development. Harvard Univ. Press, Cambridge (1958)
- [R2.3.10] Fedorovskii, I.P.: The Time Factor in the National Economic Optimality Criterion. In: MATEKON, pp. 281–299 (Spring 1971)
- [R2.3.11] Feldstein, M.S., et al.: The Problem of Time-Stream Evaluation: Present Value Versus Internal Rate of Return Rules. *Bulletin of the Oxford University Institute of Economic Statistics* 26(1), 79–85 (1964)
- [R2.3.12] Flemming, J.S., et al.: Present Value Versus Internal Rate of Return: A Comment. *Economic Jour.* 74(294), 490 (1964)
- [R2.3.13] Haveman, R.H.: Water Resource Investment and Public Interest. Vanderbilt University Press, Nashville (1955)
- [R2.3.14] Hirschleifer, J.: On the Theory of Optimal Investment Decision. *Jour. of Political Econ.* 66(4), 329–352 (1958)

- 
- [R2.3.15] Indin, D.B., et al.: Evaluation of the Information Complexity of Mathematical Program of the Mathematical Programming Programs. In: MATEKON, pp. 3–25 (Winter 1976-1977)
- [R2.3.16] Kantorovich, L.V.: The Best Use of Economic Resources. Harvard University Press, Cambridge (1965)
- [R2.3.17] Marglin, S.A.: Public Investment Criteria: Benefit-Cost Analysis for Planned Economic Growth. MIT Press, Cambridge (1967)
- [R2.3.18] Marglin, S.A.: Approaches to Dynamic Investment Planning. North- Holland, Amsterdam (1963)
- [R2.3.19] Meek, R.L.: Ideal and Reality in the Choice Between Alternative Techniques. Oxford Economic Papers 16(3), 333–354 (1964)
- [R2.3.20] Mills, G.: The Marginal Efficiency of Capital and Present Value Rule. Yorkshire Bulletin of Economic and Social Research 12(1), 28–31 (1960)
- [R2.3.21] Mishan, E.J.: Criteria for Public Investment: Some Simplifying Suggestions. Jour. of Political Economy 75(2), 139–146 (1967)
- [R2.3.22] Mishan, E.J.: A Proposed Normalization Procedure for Public Investment Criteria. Economic Journal 77, 777–796 (1967)
- [R2.3.23] Mishan, E.J.: Criteria for Public Investment: A Reply. Jour. of Political Econ. 78(1), 178–180 (1970)
- [R2.3.24] Mishan, E.J.: Uncertainty and the Evaluation of Public Investment Decisions: Comment. Amer. Econ. Rev. 62, 161–164 (1972)
- [R2.3.25] Pegels, C., et al.: A Comparison of Decision Criteria for Capital Investment Decision. Engineering Economist 13(4), 211–220 (Summer 1968)
- [R2.3.26] Pitchford, J.D., et al.: A Note on the Marginal Efficiency of Capital. Economic Journal 68(271), 597–600 (1958)
- [R2.3.27] Reiter, S.: Choosing an Investment Program Among Interdependent Projects. Rev. of Econ. Stud. 30, 32–36 (1963)
- [R2.3.28] Temurdzhian, A.V.: On the Question of the Normative Coefficient of Effectiveness. In: MATEKON, pp. 355–363 (Summer 1972)
- [R2.3.29] Turvey, R.: Present Value Versus Internal of Return-An Essay in the Theory of the Third Best. Economic Journal 73(289), 93–98 (1963)
- [R2.3.30] Zauberman, A.: Mathematical Theory In Soviet Planning. Oxford Univ. Press, New York (1976)
- [R2.3.31] Zefitsburg, L.M.: Precision and Reliability in Engineering Economic Calculations in the Selection of Capital Investment Alternatives. In: MATEKON, pp. 25–35 (Spring 1974)

**R2.4 On Cost-Benefit Rationality and Pricing**

- [R2.4.1] Dunn Jr., R.M.: Problems of Bias in Input Pricing for Benefit-Cost Analysis: A Reply. *Southern Econ. Jour.* 34(4), 571 (1968)
- [R2.4.2] Farber, S., Rambaldi, A.: Willingness to Pay for Air Quality: The Case of Outdoor Exercise. *Contemporary Policy Issues* 11(4), 19–30 (1993)
- [R2.4.3] Gaffney, M.: The Valuation of Public Good-Discussion. In: Garnsey, M.E., et al. (eds.) *Social Sciences and the Environment*, pp. 154–160. University of Colorado Press, Boulder (1967)
- [R2.4.4] Gray, C.: On Measuring the Shadow Price of Uncommitted Fiscal Resources in Africa. *World Development* 17, 213–221 (1989)
- [R2.4.5] Grossman, S.J., et al.: Information and Competitive Price System. *Proceeding Amer Econ. Rev.* 66, 246–253 (1976)
- [R2.4.6] Ise, J.: The Theory of Value as Applied to Natural Resources. *Amer. Econ. Rev.* 15, 284–291 (1925)
- [R2.4.7] Johnson, J.A.: The Distribution of the Burden of Sewer User Charges Under Various Formulas. *National Tax Jour.* 22, 472–485 (1969)
- [R2.4.8] Koopmans, T.C.: *Three Essays on the State of Economic Science*. McGraw-Hill, New York (1957)
- [R2.4.9] Langholm, O.: *Full Cost and Optimal Price: A Study in the Dynamics of Multiple Production*. Universities of Laget, Oslo (1969)
- [R2.4.10] Layard, R. (ed.): *Cost-Benefit Analysis*. Penguin Press, Baltimore (1972)
- [R2.4.11] Margolis, J.: Welfare Criteria, Pricing and Decentralization of Public Services. *Quarterly Jour. of Econ.* 71(3), 448–463 (1957)
- [R2.4.12] McConnell, K.E.: Congestion and Willingness to Pay: A Case Study of Beach Use. *Land Economics* 53(2), 185–195 (1977)
- [R2.4.13] Menz, F.C., Mullin, J.K.: Expected Encounters and Willingness to Pay for Outdoor Recreation. *Land Economics* 57(1), 33–40 (1981)
- [R2.4.14] Mishan, E.J.: Evaluation of Life and Limb: A Theoretical Approach. *The Jour. of Political Econ.* 79(4), 687–705 (1971)
- [R2.4.15] Millman, J.W.: Beneficiary Charges-Toward a Unified Theory. In: Mushkin, S. (ed.) *Public Prices for Public Products*, pp. 27–52. Urban Institute, Washington (1972)
- [R2.4.16] Mushkin, S. (ed.): *Public Prices for Public Products*. Urban Institute, Washington (1972)

- [R2.4.17] Nelson, J.P.: Residential Choice, Hedonic Prices, and the Demand for Urban Air Quality. *Journal of Urban Economics* 5(3), 357–369 (1978)
- [R2.4.18] Nelson, J.R. (ed.): *Marginal Cost Pricing in Practice*. Prentice-Hall, Englewood Cliffs (1964)
- [R2.4.19] Paul, E.S.: Pricing Rules and Efficiency. In: Mushkin, S. (ed.) *Public Prices for Public Products*, pp. 73–95. Urban Institute, Washington (1972)
- [R2.4.20] Pollack, W.: Pricing Fire Protection Services. In: Mushkin, S. (ed.) *Public Prices for Public Products*, pp. 307–334. Urban Institute, Washington (1972)
- [R2.4.21] Reese, R.: Second Best Rules for Public Enterprise Pricing. *Economica* 35, 260–273
- [R2.4.22] Richer, J.: Willingness to Pay for Desert Protection. *Contemporary Economic Policy* 13(4), 93–104 (1995)
- [R2.4.23] Roberts, K.W.S.: Welfare Considerations of Nonlinear pricing. *Econ. Jour.* 89, 66–83 (1979)
- [R2.4.24] Rosenthal, D.H., Brown, T.C.: Comparability of Market Prices and Consumer Surplus for Resource Allocation Decisions. *Journal of Forestry* 83(2), 105–109 (1985)
- [R2.4.25] Ruggles, N.: The Welfare Basis of Marginal-Cost Pricing Principle. *Rev. of Econ. Studies* 17, 24–46 (1949)
- [R2.4.26] Ruggles, N.: Recent Developments in the Theory of Marginal Cost-Pricing. *Rev. of Econ. Studies* 17, 107–126 (1949-1956)
- [R2.4.27] Scarf, H.E.: The computation of equilibrium prices. In: Scarf, H.E., et al. (eds.) *Applied General Equilibrium Analysis*, pp. 1–49. Cambridge Univ. Press, New York (1984)
- [R2.4.28] Sen, A.K.: Control Areas and Accounting Prices: An Approach to Economic Evaluation. *Econ. Jour.* 82, 486–501 (1972)
- [R2.4.29] Shubik, M.: Voting or a Price System in a Competitive Market Structure. *Amer. Polit. Science Rev.* 64, 179–181 (1970)
- [R2.4.30] Sraffa, P.: Production of Commodities by Means of Commodities. In: *Prelude to Critique of Economic Theory*. Cambridge University Press, Cambridge (1960)
- [R2.4.31] Turvey, R.: How to Judge When Price Change Will Improve Resource Allocation. *Economic Journal* 84, 825–832 (1974)
- [R2.4.32] Turvey, R.: Marginal Cost Pricing. *Economic Jour.* 79, 282–294 (1969)

- [R2.4.33] Vickrey, W.S.: Some Implications of Marginal Cost Pricing for Public Utilities. *Amer. Econ. Rev.* 45, 605–620 (1955)
- [R2.4.34] Vickrey, W.S.: Some objections to Marginal Cost Pricing. *Jour. of Political Econ.* 56(3), 218–238 (1948)
- [R2.4.35] Williams, T.S.: Pricing, Estimating, and Budgeting. North Light Books, Cincinnati (1996)
- [R2.4.36] Wohl, M.: The Short-Run Congestion Cost and Pricing Dilemma. *Traffic Quarterly* 20, 48–70 (1966)
- [R2.4.37] Zauberman, A.: *Mathematical Theory in soviet Planning*. Oxford Univ. Press, New York (1976)
- [R2.4.38] Zettel, R., et al.: *The Basic Theory of Efficiency Tolls: The Tolloed, The Tolloed-Off and Untolloed*. Highway Research Board Record (47) (1964)

## **R2.5 On Cost-Benefit Rationality and Discounting**

- [R2.5.1] Alchian, A.A.: The Rate of Interest, Fisher's Rate of Return Over Costs and Keynes Internal Rate of Returns. *Amer. Econ. Rev.* 45(5), 938–943 (1955)
- [R2.5.2] Arrow, K.J., et al.: *Public Investment, and Optimal Fiscal Policy*. Johns Hopkins Press, Baltimore (1970)
- [R2.5.3] Baumal, W.J.: On the Social Rate of Discount. *Amer. Econ. Review* 58(4), 788–802 (1968)
- [R2.5.4] Baumal, W.J.: On the Social Rate of Discount: Comment on the Comments. *Amer. Econ. Rev.* 59, 930 (1969)
- [R2.5.5] Broussalian, V.L.: *On Discounting and Risk in Military Decisions*. Center for Naval Analysis, Washington (August 1966)
- [R2.5.6] Denison, E.F.: Capital Theory and the Rate of Return. *Amer. Econ. Rev.* 54(5), 721–725 (1964)
- [R2.5.7] Felstein, M.S.: The Social Time Preference Discount Rate in Cost-Benefit Analysis. *Economic Jour.* 74(294), 360–379 (1964)
- [R2.5.8] Feldstein, M.S.: The Derivation of Social Time Preference Rates. *Kyklos* 18, 277–287 (1965)
- [R2.5.9] Fisher, I.: *The Rate of Interest*. Macmillan Publishing Co, New York (1907)
- [R2.5.10] Hann, F.H., et al.: *The Theory of Interest Rates*. In: *Proceedings of Conference Intern. Econ. Assoc.* Macmillan, New York (1965)
- [R2.5.11] Jean, W.: On Multiple Rates of Returns. *Jour. Of Finance* 23(1), 187–191 (1968)

- 
- [R2.5.12] Knight, F.H.: Professor Fisher's Interest Theory: A Case in Point. *Jour. of Political Econ.*, 176–212 (April 1931)
- [R2.5.13] Kubinski, F.M., et al.: Marginal Efficiency of Capital and Effect of Discounting Period. *Economic Records* 36, 424–425 (1960)
- [R2.5.14] Lee, D.R., et al.: The Private Discount Rate and Resource Conservation. *Canadian Jour. of Econ.* 8(3), 351–363 (1975)
- [R2.5.15] Lind, R.C.: The Social Rate of Discount and the Optimal Rate of Investment: Further Comment. *Quarterly Jour. of Economics* 78(2), 336–345 (1964)
- [R2.5.16] Marglin, S.A.: The Social Rate of Discount and Optimal Rate of Investment. *Quarterly Journal of Econ.*, 95–111 (February 1963)
- [R2.5.17] Merrett, A., et al.: Calculating the Rate of Return on Capital Projects. *Jour. of Industrial Econ.* 9(1), 98–115 (1960)
- [R2.5.18] Mikesell, R.E.: The Rate of Discount For Evaluating Public Projects. American Enterprise Institute for Public Policy Research, Washington (1977)
- [R2.5.19] Nichols, A.: On the Social Rate of Discount: Comment. *Amer. Econ. Rev.*, 909–911 (December 1969)
- [R2.5.20] Robichek, A., et al.: Conceptual Problems in the Use of Risk-Adjusted Discount Rates. *Jour. of Finance* 21(4), 727–730 (1966)
- [R2.5.21] Robinson, R.: The Rate of Interest, Fisher's Rate of Return Over Costs and Keynes Internal Rate of Return: Comment. *Amer. Econ. Rev.* 46(5), 972–973 (1956)
- [R2.5.22] Sandmo, A., et al.: Discount Rates for Public Investment in Closed and Open Economies. *Economica* 39, 395–412 (1971)
- [R2.5.23] Sandmo, A.: Discount Rates for Public Investment Under Uncertainty. *Intern. Econ. Rev.* 13, 287–302 (1972)
- [R2.5.24] Sen, A.K.: Isolation, Assurance and the Social Rate of Discount. *Quarterly Jour. of Econ.* 81(1), 112–124 (1967)
- [R2.5.25] Somers, H.M.: On the Demise of the Social Rate. *Jour. of Finance*, 565–578 (May 1974)
- [R2.5.26] Sommers, G.G., et al.: Cost-benefit analysis of manpower policies. In: *Proc. of North Amer. Conf. Industrial Relations Center*. Queens University, Kingston, Ontario (1969)
- [R2.5.27] Tullock, G.: The Social Rate of Discount and the Optimal Rate of Investment: Comment. *Quarterly Jour. of Econ.* 78(2), 331–336 (1964)
- [R2.5.28] Usher, D.: The Social Rate of Discount and the Optimal Rate of Investment: Comment. *Quarterly Jour. of Econ.* 78, 641–644 (1964)

**R2.6 Cost-Benefit Rationality and Contingent Valuation Method (CVM)**

- [R2.6.1] Adamowicz, W., Louviere, J., Williams, M.: Combining Revealed and Stated Preference Methods for Valuing Environmental Amenities. *Journal of Environmental Economics and Management* 26, 271–292 (1994)
- [R2.6.2] Ajzen, I., Fishbein, M.: *Understanding Attitudes and Predicting Social Behavior*. Prentice-Hall, Inc., Englewood Cliffs (1980)
- [R2.6.3] Arrow, K., et al.: Repeat of NOAA Panel on Contingent Valuation. *Federal Register* 58, 4601–4614 (1993)
- [R2.6.4] Bateman, I., Willis, K. (eds.): *Valuing Environmental Preference: Theory and Practice of the Contingent Valuation Method in the US, EC and Developing Countries*. Oxford University Press, Oxford (2002)
- [R2.6.5] Batie, S.S., et al.: Valuing Non-Market Goods-Conceptual and Empirical Issues: Discussion. *Amer. Jour. Of Agricultural Economics* 61(5), 931–932 (1979)
- [R2.6.6] Bentkover, J.D., et al.: *Benefit Assessment: The State of the Art*. D.Reidel, Boston (1986)
- [R2.6.7] Bishop, R.C., Heberlein, T.A.: The Contingent Valuation Method. In: Johnson, R.L., Johnson, G.V. (eds.) *Economic Valuation of Natural Resources: Issues, Theory, and Applications*, pp. 81–104. Westview Press, Boulder (1990)
- [R2.6.8] Bishop, R.C., et al.: Contingent Valuation of Environmental Assets: Comparison with a Simulated Market. *Natural Resources Jour.* 23(3), 619–634 (1983)
- [R2.6.9] Brookshire, D.S., et al.: The Advantage of Contingent Valuation Methods for Benefit Cost Analysis. *Public Choice* 36(2), 235–252 (1981)
- [R2.6.10] Brookshire, D.S., et al.: Valuing Public Goods: A Compromise of Survey and Hedonic Approaches. *Amer. Economic Review* 72(1), 165–177 (1982)
- [R2.6.11] Burness, H.S., et al.: Valuing Policies which Reduce Environmental Risk. *Natural Resources, Jour.* 23(3), 675–682 (1983)
- [R2.6.12] Carson, R.T., et al.: Temporal Reliability of Estimates from Contingent Valuations, Discussion Paper, Washington, D.C. *Resource for the Future*, pp. 95–37 (August 1995)



- 
- [R2.6.13] Carson, R.T., Mitchell, R.C.: The Value of Clean Water: The Public's Willingness to Pay for Boatable, Fishable, and Swimmable Quality Water. *Water Resources Research* 29, 2445–2454 (1993)
- [R2.6.14] Carson, R., et al.: A Contingent Valuation Study of Lost Passive Use Values Resulting from the Exxon Valdez Oil Spill, Report to the Attorney General of Alaska, Natural Resource Damage Assessment, Inc. La Jolla, CA (November 1992)
- [R2.6.15] Cummings, R.G., Brookshire, D.S., Schulze, W.D., et al. (eds.): *Valuing Environmental Goods: An Assessment of the Contingent Valuation Method*. Rowman and Allanheld, Totowa (1996)
- [R2.6.16] Diamond, P.A., Hausman, J., Leonard, G.K., Denning, M.A.: Does Contingent Valuation Measure Preferences? Experimental Evidence. In: Hausman, J.A. (ed.) *Contingent Valuation: A Critical Assessment*, pp. 41–89. North-Holland, New York (1993)
- [R2.6.17] Diamond, P.A., Hausman, J.A.: On Contingent Valuation Measurement of Nonuse Values. In: Hausman, J. (ed.) *Contingent Valuation: A Critical Assessment*, pp. 3–38. North-Holland Press, Amsterdam (1993)
- [R2.6.18] Diamond, P.A., et al.: Contingent Valuation: Is Some Number Better than no Number? *Jour. Economics Perspectives* 8, 45–64 (1994)
- [R2.6.19] Fishkin, J.S.: *Democracy and Deliberation: New Direction for Democratic Reform*. Yale University Press, New Haven (1991)
- [R2.6.20] Freeman, A.: *Myrick, The Measurement of Environment and Resource Values: theory and Method*. Resources for the Future, Washington (1993)
- [R2.6.21] Gregory, R.: Interpreting Measures of Economic Loss: Evidence from Contingent Valuation and Experimental Studies. *Jour. Of Environmental Economics and Management* 13, 325–337 (1986)
- [R2.6.22] Groves, R.M.: *Survey Errors and Survey Costs*. John Wiley and Sons, New York (1989)
- [R2.6.23] Hanemann, W.M.: Welfare Evaluations in Contingent Valuation Experiments with Discrete Responses. *American Journal of Agricultural Economics* 66, 332–341 (1984)
- [R2.6.24] Hanemann, W.M.: Valuing the Environment through Contingent Valuation. *Jour. of Economic Perspectives* 8, 19–44 (1994)
- [R2.6.25] Harrison, G.W.: Valuing Public Goods with the Contingent Valuation Method: A Critique of Kahneman and Knetsch. *Journal of Environmental Economics and Management* 23, 248–257 (1992)

- [R2.6.26] Hausman, J.A.: *Contingent Valuation: A Critical Assessment*. North-Holland, New York (1993)
- [R2.6.27] Hoehn, J.P., Randall, A.: Too Many Proposals Pass the Benefit Cost Test. *American Economic Review* 79, 544–551 (1989)
- [R2.6.28] Kahneman, D.: Comments on the Contingent Valuation Method. In: Cummings, R.G., Brookshire, D.S., Schulze, W.D. (eds.) *Valuing Environmental Goods: A State of the Arts Assessment of the Contingent Valuation Method*, pp. 185–194. Rowman and Allanheld, Totowa (1986)
- [R2.6.29] McNeal, B.J.: On the elicitation of Preferences for alternative Therapies. *New England Jour. of Medicine* 306, 1259–1262 (1982)
- [R2.6.30] Mitchell, R.C., Carson, R.T.: *Using Surveys to Value Public Goods: the Contingent Valuation Method*. Resources for the Future, Washington (1989)
- [R2.6.31] Portney, P.R.: The Contingent Valuation Debate: Why Economists Should Care. *Jour. of Economic Perspectives* 8, 3–17 (1994)
- [R2.6.32] Randall, A., et al.: Contingent Valuation Survey for Evaluating Environmental Assets. *Natural Resources Jour.* 23, 635–648 (1983)
- [R2.6.33] Smith, V.L.: Experimental Economics: Induced Value Theory, *American Economic Review Proceedings* 66, 274–279 (1976)
- [R2.6.34] Smith, V.L.: Experiments with a Decentralized Mechanism for Public Good Decision. *American Economic Review* 70, 584–599 (1980)
- [R2.6.35] Smith, V.K.: An Experimental Comparison of Three Public Good Decision Mechanisms. *Scandinavian Jour. of Economics* 81, 198–215 (1979)
- [R2.6.36] Smith, V.K.: Indirect Revelation of demand for Public Goods: An Overview and Critique. *Scot. Jour. of Political Econ.* 26, 183–189 (1979)
- [R2.6.37] Thayer, M.A.: Contingent Valuation Technique for Assessing Environmental Impacts: Further Evidence. *Jour. of Environmental Economics and Management* 8, 27–44 (1981)
- [R2.6.38] Weisbrod, B.A.: Costs and Benefits of Medical Research: A Case Study of Poliomyelitis. In: *Benefit-Cost and Policy Analysis*, Chicago, Aldine, pp. 142–160 (1972)

- [R2.6.39] Weisbrod, B.A.: A Guide to Benefit-Cost Analysis, as seen Through a Controlled Experiment in Treating the Mentally Ill, Institute for Research on Poverty, Discussion Papers, DP #559-798, University of Wisconsin- Madison (1979)
- [R2.6.40] Tversky, A., et al.: The Framing of Decisions and the Psychology of Choice. *Science* 211, 453-458 (1981)

## **R2.7 Cost-Benefit Rationality and the Revealed Preference Approach (RPA)**

- [R2.7.1] Bain, J.S.: Criteria for Undertaking Water-Resource Development. *Amer. Econ. Rev. Papers and Proceedings* 50(2), 310-320 (1960)
- [R2.7.2] Barsb, S.L.: *Cost-Benefit Analysis and Manpower Programs*. Heath& Co, Toronto (1972)
- [R2.7.3] *Benefit-Cost and Policy Analysis 1973, An Aldine Annual*. Aldine Pub. Co, Chicago (1974)
- [R2.7.4] *Benefit-Cost Analysis and Policy Analysis 1974, An Aldine Annual*. Aldine Pub. Co, Chicago (1975)
- [R2.7.5] *Benefit-Cost Analysis and Policy Analysis 1971, An Aldine Annual*. Aldine Pub. Co, Chicago (1972)
- [R2.7.6] Brookings Institution, *Applying Benefit-Cost Analysis to Public Programs*, Brookings Research Report #79, Washington, D.C (1968)
- [R2.7.7] Devine, E.T.: The Treatment of Incommensurables in Cost-Benefit Analysis. *Land Economics* 42(3), 383-387 (1966)
- [R2.7.8] Gramlich, E.M.: *Benefit-Cost Analysis of Government Programs*. Prentice-Hall, Inc., Englewood Cliffs (1981)
- [R2.7.9] Hansen, W.L., et al.: The Distribution of Costs and Direct Benefits of Public Higher Education. The Case of California. *Journal of Human Resources* 4(2), 176-191 (1969)
- [R2.7.10] Haveman, R.H.: Benefit-Cost Analysis: Its Relevance to Public Investment Decisions: Comment. *Quarterly, Jour. of Econ.* 81(4), 695-702 (1967)
- [R2.7.11] Haveman, R.H.: *Water Resource Investment and Public Interest*. Vanderbilt Univ. Press, Nashville (1965)
- [R2.7.12] Haveman, R.H., et al.: Unemployment Excess Capacity and Benefit-Cost Investment Criteria. *Rev. of Econ. Stat.* 49, 382-392 (1967)
- [R2.7.13] Knesse, A.V.: Research Goals and Progress Toward them. In: Jarrett, H. (ed.) *Environmental Quality in a Growing Economy*, pp. 69-87. John Hopkins Press, Washington (1966)

- [R2.7.14] Krutilla, J.V. (ed.): *Natural Environments: Studies in Theoretical and Applied Analysis*. John Hopkins Univ. Press, Baltimore (1972)
- [R2.7.15] Layard, R. (ed.): *Cost-Benefit Analysis*. Penguin, Baltimore (1972)
- [R2.7.16] Lesourne, J.: *Cost-Benefit Analysis and Economic theory*. North-Holland, New York (1975)
- [R2.7.17] Little, I.M.D., et al.: *Manual of Industrial Project Analysis in Developing Countries, Social Cost Benefit Analysis, Vol. II*. OECD Pub., Paris (1968)
- [R2.7.18] Mass, A.: *Benefit-Cost Analysis: Its Relevance to Public Investment Decisions*. *Quarterly Jour. of Economics* 80(2), 208–226 (1966)
- [R2.7.19] MacDonald, J.S.: *Benefits and Costs: Theoretical and Methodological Issues: Discussion*. In: Somers, G.G., et al. (eds.) *Cost-Benefit Analysis of Manpower Policies, Proceedings of a North American Conference*, pp. 30–37. Kingston, Ontario (1969)
- [R2.7.20] Marciariello, J.A.: *Dynamic Benefit-Cost Analysis*. Heath and Co., Toronto (1975)
- [R2.7.21] Mishan, E.J.: *Cost-Benefit Analysis*, New York, Praeger (1976)
- [R2.7.22] Musgrave, R.A.: *Cost-Benefit Analysis and the Theory of Public Finance*. *Journal of Econ. Literature* 7, 797–806 (1967)
- [R2.7.23] Prest, A.R., et al.: *Cost-Benefit Analysis: A Survey*. In: *Survey in Economic Theory*, 75th edn., vol. III, pp. 685–705. St. Martin Press, New York (1966); *Economic Jour.* 75, 685–705 (1965)
- [R2.7.24] Raynauld, A.: *Benefits and Costs: Theoretical and Methodological Issue: Discussion*. In: Somers, G.G., et al. (eds.) *Cost-Benefit Analysis of Manpower Policies, Proceedings of a North American Conference*, Kingston, Ontario, pp. 37–41 (1969)
- [R2.7.25] Schwartz, H., et al. (eds.): *Social and Economic Dimensions of Project Evaluation*. In: *Symposium on the Use of Socioeconomic Investment Criteria*. Inter-American Dev. Bank, Washington (1973)
- [R2.7.26] Sen, A., Marlgin, S.: *Guidelines for project Evaluation*. U.N. publication Series #2, New York (1972)
- [R2.7.27] Solo, R.A.: *Benefit-Cost Analysis and Externalities in Private Choice: Comment*. *Southern Econ. Jour.* 34(4), 569–570 (1968)

- [R2.7.28] Somers, G.G., et al. (eds.): Cost-Benefit Analysis of Manpower Policies. In: Proceedings of a North American Conference, Kingston, Ontario (1969)
- [R2.7.29] Sugden, R., et al.: The Principles of Practical Cost-Benefit Analysis. Oxford Univ. Press, Oxford (1978)
- [R2.7.30] United States of America Committee on Interstate and Foreign Commerce House of Representatives, Use of Cost-Benefit Analysis By Regulatory Agencies, Joint and Subcommittee on Consumer Protection and Finance, Serial #96-157 (1979)
- [R2.7.31] Water Resource Council of USA, Procedures for evaluation of national economic development (NED) benefits and costs in water resources planning (level C) final rule, Fed. Register 44, 72892–72977 (1979)

### **R3 On Rationality and Social Decision-Choice Process**

- [R3.1] Aaron, H.J., et al.: Efficiency and Equity in the Optimal Supply of a Public Good. *Rev. of Econ. Stat.* 51, 31–39 (1969)
- [R3.2] Aaron, H.J., et al.: Public Goods and Income Distribution. *Econometrica* 38, 907–920 (1970)
- [R3.3] Archibald, G.C.: Welfare Economics Ethics and Essentialism. *Economica (New Series)* 26, 316–327 (1959)
- [R3.4] Arrow, K.J.: *Social Choice and Individual Values*. Wiley, New York (1951)
- [R3.5] Arrow, K.J.: Behavior under Uncertainty and Its Implication for Policy, Technical Report #399, Center for Research on Organizational Efficiency, Stanford, Stanford University (1983)
- [R3.6] Arrow, K.J.: A Difficulty in the Concept of Social Welfare. *Jour. of Political Econ.* 58, 246–328 (1950)
- [R3.7] Arrow, K.J.: Equality in Public Expenditure. *Quarterly Jour. of Econ.* 85, 409–415 (1971)
- [R3.8] Arrow, K.J., et al. (eds.): *Readings in Welfare Economics*, Homewood, Irwin (1969)
- [R3.9] Atkinson, A.B., et al.: *Lecture on Public Economics*. McGraw-Hill, New York (1980)
- [R3.10] Atkinson, A.B.: Optimal Taxation and the Direct Versus Indirect Tax Controversy. *Canadian Jour. of Economics* 10, 590–606 (1977)

- 
- [R3.11] Atkinson, A.B.: Optimal Taxation and Direct versus Indirect Tax Controversy. *Canadian Jour. of Economics* 10(4), 590–606 (1977)
- [R3.12] Atkinson, A.B., et al.: The Structure of Indirect Taxation and Economic Efficiency. *Jour. of Public Economics* 1, 97–119 (1972)
- [R3.13] Atkinson, A.B.: The Design of Tax Structure: Direct Versus Indirect Taxation. *Journal of Public Econ.* 6, 55–75 (1977)
- [R3.14] Axelrod, R.: *Conflict of Interest*. Markham, Chicago (1970)
- [R3.15] Balassa, B., et al.: *Economic Progress, Private Values and Public Policy*. North-Holland, New York (1977)
- [R3.16] Barr, N.A., et al.: *Self-Assessment for Income Tax*. Heinemann, London (1977)
- [R3.17] Baumol, W.J.: *Welfare Economics and the Theory of the State*. Harvard University Press, Cambridge (1967)
- [R3.18] Becker, G.S.: A Theory of the Allocation of Time. *Economic Journal* 75, 493–517 (1965)
- [R3.19] Becker, G.S.: A Theory of Competition among pressure Groups for Political Influence. *Quarterly Jour. of Econ.* 97(XCVII), 371–400 (1983)
- [R3.20] Becker, G.S.: A Theory of Social Interactions. *Jour. of Political Economy* 82, 1063–1093 (1974)
- [R3.21] Bentley, A.F.: *The Process of Government*. University of Chicago Press, Chicago (1907)
- [R3.22] Bergson, A.: A Reformation of Certain Aspects of Welfare Economics. *Quart. Jour. of Econ.* 52, 314–344 (1938)
- [R3.23] Bergson, A.: On the Concept of Social Welfare. *Quarterly Jour. of Econ.* 68, 233–253 (1954)
- [R3.24] Bernholz, P.: Economic Policies in a Democracy. *Kyklos*, Vol 19(1), 48–80 (1966)
- [R3.25] Black, D.: On the Rationale of Group Decision Making. *Jour. of Political Economy* 56, 23–34 (1948)
- [R3.26] Black, D.: *The Theory of Committees and Elections*. Cambridge Univ. Press, Cambridge (1958)
- [R3.27] Blackorby, C., et al.: Utility vs. Equity. *Jour. Public Economics* 7, 365–381 (1977)
- [R3.28] Blau, J.H., et al.: Social Decision Functions and the Veto. *Econometrica* 45, 871–879 (1977)
- [R3.29] Bowen, H.R.: The Interpretation of Voting in the Allocation of Economic Resources. *Quart. Jour. of Econ.* 58, 27–48 (1943)

- 
- [R3.30] Breton, A.: *The Economic Theory of Representative Government*. Aldine Pub. Co, Chicago (1974)
- [R3.31] Brown, D.J.: Aggregation of Preferences. *Quart. Jour. of Econ.* 89, 456–469 (1975)
- [R3.32] Buchanan, J.M.: Individual Choice in Voting and the Market. *Jour. of Political Econ.* 62, 334–343 (1954)
- [R3.33] Buchanan, J.M.: An Economic Theory of Clubs. *Economica* 32, 1–14 (1965)
- [R3.34] Buchanan, J.M.: Notes for an Economic Theory of Socialism. *Public Choice*, vol. 8, pp. 29–43 (Spring 1970)
- [R3.35] Buchanan, J.M.: *The Demand and Supply of Public Goods*. Rand McNally, Chicago (1968)
- [R3.36] Buchanan, J.M.: Public Finance and Public Choice. *National Tax Jour.* 28, 383–394 (1975)
- [R3.37] Buchanan, J.M., et al. (eds.): *Theory of Public Choice*. The University of Michigan Press, Ann Arbor (1972)
- [R3.38] Buchanan, J.M., et al. (eds.): *Toward a Theory of the Rent Seeking Society*. Texas A and M Univ. Press, Texas (1980)
- [R3.39] Buchanan, J.M., et al.: *The Calculus of Consent*. University of Michigan Press, Ann Arbor (1962)
- [R3.40] Chipman, J.S.: The Welfare Ranking of Pareto Distributions. *Jour. of Econ. Theory* 9, 275–282 (1974)
- [R3.41] Coleman, J.S.: Foundations for a Theory of Collective Decisions. *Amer. Jour. of Sociology* 71, 615–627 (1966)
- [R3.42] Coleman, J.S.: The Possibility of a Social Welfare Function. *Amer. Econ. Rev.* 56, 1105–1112 (1966)
- [R3.43] Coleman, J.S.: The Possibility of a Social Welfare Function: A Reply. *Amer. Econ. Rev.* 57, 1311–1317 (1967)
- [R3.44] Comanor, W.S.: The Median Voter and the Theory of Political Choice. *Jour. of Public Econ.* 5, 169–177 (1976)
- [R3.45] Corlette, W., et al.: Complementality and Excess Burden of Taxation. *Rev. Econ. Studies* 21, 21–30 (1953–1954)
- [R3.46] D’Aspermont, C., et al.: Equity and the Information Basis of Collective Choice. *Rev. of Econ. Stud.* 44, 119–209 (1977)
- [R3.47] DeMeyer, F., et al.: A Welfare Function Using Relative Intensity of Preferences. *Quart. Jour. of Econ.* 85, 179–186 (1971)
- [R3.48] Diamond, P.: Cardinal Welfare, Individualistic Ethics, and Interpersonal Comparisons of Utility: A Comment. *Jour. of Political Econ.* 75, 765–766 (1967)

- [R3.49] Dobb, M.A.: *Welfare Economics and the Economics of Socialism*. Cambridge Univ. Press, Cambridge (1969)
- [R3.50] Downs, A.: *Economic Theory of Democracy*. Harper and Row, New York (1957)
- [R3.51] Dubins, L.E., et al.: How to Cut a Cake Fairly. *Amer. Math Monthly* 1961, *Readings in Mathematical Economics*, vol. 1, Value Theory, Baltimore, MD. John Hopkins Univ. Press, pp. 1–17 (1968) (reprinted in P.Newman)
- [R3.52] Ellickson, B.: A Generalization of the Pure Theory of Public Goods. *American Econ. Rev.* 63, 417–432 (1973)
- [R3.53] Farquharson, R.: *Theory of Voting*. Yale University Press, New Haven (1969)
- [R3.54] Fontaine, E.: *Economic Principles for Project Evaluation*. Organization of American States, Washington (1975)
- [R3.55] Green, J., Laffont, J.-J.: Characterization of Satisfactory Mechanisms for Revelation of Preferences for Public Goods. *Econometrica* 45, 427–438 (1977)
- [R3.56] Green, J., et al.: Imperfect Personal Information and the Demand Revealing Process: A Sampling Approach. *Public Choice* 29, 79–94 (Spring 1977)
- [R3.57] Green, J.R., et al. (eds.): *Incentives in Public Decision-Making*. North-Holland, New York (1979)
- [R3.58] Haeefele, E.T.: A Utility Theory of Representative Government. *Amer. Econ. Rev.* 61, 350–367 (1971)
- [R3.59] Hammond, P.J.: Why Ethical Measures of Inequality Need Interpersonal Comparisons. *Theory and Decision* 7, 263–274 (1976)
- [R3.60] Harberger, A.C.: The Basic Postulates for Applied Welfare Economics; An Interpretive Essay. *Jour. of Econ. Lit.* 9(3), 785–793 (1971)
- [R3.61] Hardin, R.: Collective Action as an Agreeable n-Prisoner's Dilemma. *Behav. Science* 16, 471–481 (1971)
- [R3.62] Hause, J.C.: The Theory of Welfare Cost Measurement. *Jour. of Polit. Econ.* 83, 1145–1182 (1975)
- [R3.63] Head, J.G., et al.: Public Goods, Private Goods and Ambiguous Goods. *Econ. Journal* 79, 567–572 (1969)
- [R3.64] Heineke, J.M.: *Economic Model of Criminal Behavior*. North-Holland, New York (1978)
- [R3.65] Hicks, J.R.: The Four Consumer's Surpluses. *Rev. of Econ. Stud.* 13, 68–73 (1944)



- 
- [R3.66] Hicks, J.R.: The Foundations of Welfare Economics. *Economic Journal* 59, 696–712 (1949)
- [R3.67] Intrilligator, M.D.: A Probabilistic Model of Social Choice. *Rev. Econ. Stud.* 40, 553–560 (1973)
- [R3.68] Jakobsson, U.: On the Measurement of the Degree of Progression. *Jour. of Public Economics* 14, 161–168 (1976)
- [R3.69] Kaldor, N.: Welfare Propositions of Economics and Interpersonal Comparison. *Economic Jour.* 49, 549–552 (1939)
- [R3.70] Kaldor, N. (ed.): *Conflicts in Policy objectives*. Oxford Univ. Press, Oxford (1971)
- [R3.71] Kemp, M.C., et al.: More on Social Welfare Functions: The Incompatibility of Individualism and Ordinalism. *Economica* 44, 89–90 (1977)
- [R3.72] Kemp, M.C., et al.: On the Existence of Social Welfare Functions: Social Orderings and Social Decision Function. *Economica* 43, 59–66 (1976)
- [R3.72a] Krueger, A.: The Political Economy of Rent Seeking Society. *American Econ. Rev.* 64, 291–302 (1974)
- [R3.73] Laffont, J.-J. (ed.): *Aggregation and Revelation of Preferences*. North-Holland, New York (1979)
- [R3.74] Lancaster, K.J.: A New Approach to Consumer Theory. *Jour. of Political Economy* 74, 132–157 (1966)
- [R3.75] Lancaster, K.J.: *Variety, Equity, and Efficiency*. Columbia University Press, New York (1979)
- [R3.76] Lin, S.A.Y. (ed.): *Theory and Measurement of Economic Externalities*. Academic Press, New York (1976)
- [R3.77] Lindsay, C.M.: A Theory of Government Enterprise. *Jour. Of Political Econ.* 84, 1061–1077 (1976)
- [R3.78] Lipsey, R.G., et al.: The General Theory of Second Best. *Rev. of Econ. Stud.* 24, 11–32 (1957)
- [R3.79] Little, I.M.D.: Social Choice and Individual Values. *Jour. of Political Econ.* 60, 422–432 (1952)
- [R3.80] Little, I.M.D.: *A Critique of Welfare Economics*. Clarendon Press, Oxford (1957)
- [R3.81] McFadden, D.: The Revealed Preferences of a Public Bureaucracy Theory. *Bell Jour. of Econ.* 6(2), 55–72 (1975)
- [R3.82] McFadden, D.: The Revealed Preferences of a Government Bureaucracy: Empirical Evidence. *Bell Jour. of Econ.* 7(1), 55–72 (1976)

- [R3.83] McGuire, M.: Private Good Clubs and Public Good Clubs: Economic Model of Group Formation. *Swedish Jour. of Econ.* 74, 84–99 (1972)
- [R3.84] McGuire, M.: Group Segregation and Optimal Jurisdiction. *Jour. of Political Econ.* 82, 112–132 (1974)
- [R3.85] Mirkin, B.: *Group Choice*. John Wiley, New York (1979)
- [R3.86] Millerson, J.C.: Theory of Value with Public Goods: A Survey Article. *Jour. Econ. Theory* 5, 419–477 (1972)
- [R3.87] Mishan, E.J.: Survey of Welfare Economics: 1939–1959. In: *Surveys of Economic Theory*, vol. 1, pp. 156–222. Macmillan, New York (1968)
- [R3.88] Mishan, E.J.: Welfare Criteria: Resolution of a Paradox. *Economic Journal* 83, 747–767 (1973)
- [R3.89] Mishan, E.J.: Flexibility and Consistency in Cost Benefit Analysis. *Economica* 41, 81–96 (1974)
- [R3.90] Mishan, E.J.: The Use of Compensating and Equivalent Variation in Costs-Benefit Analysis. *Economica* 43, 185–197 (1976)
- [R3.91] Mishan, E.J.: *Introduction to Normative Economics*. Oxford Univ. Press, New York (1981)
- [R3.92] Mueller, D.C.: Voting Paradox. In: Rowley, C.K. (ed.) *Democracy and Public Choice*, pp. 77–102. Basil Blackwell, New York (1987)
- [R3.93] Mueller, D.C.: Public Choice: A Survey. *Jour. of Econ. Lit.* 14, 396–433 (1976)
- [R3.94] Mueller, D.C.: The Possibility of a Social Welfare Function: Comment. *Amer. Econ. Rev.* 57, 1304–1311 (1967)
- [R3.95] Mueller, D.C.: Constitutional Democracy and Social Welfare. *Quart. Jour. of Econ.* 87, 60–80 (1973)
- [R3.96] Mueller, D.C.: Allocation, Redistribution and Collective Choice. *Public Finance* 32, 225–244 (1977)
- [R3.97] Mueller, D.C.: Voting by Veto. *Jour. of Public Econ.* 10, 57–75 (1978)
- [R3.98] Mueller, D.C.: *Public Choice*. Cambridge Univ. Press, New York (1979)
- [R3.99] Mueller, D.C., et al.: Solving the Intensity Problem in a Representative Democracy. In: Leiter, R.D., et al. (eds.) *Economics of Public Choice*, pp. 54–94. Cyro Press, New York (1975)
- [R3.100] Musgrave, R.A., et al. (eds.): *Classics in the Theory of Public Finance*. St. Martin's Press, New York (1994)

- 
- [R3.101] Musgrave, R.A.: *Public Finance in a Democratic Society: Collected Paper*. New York Univ. Press, New York (1986)
- [R3.102] Newbery, D., et al. (eds.): *The Theory of Taxation for Developing Countries*. Oxford University Press, New York (1987)
- [R3.103] Niskanen, W.A.: *Bureaucracy and Representative Government*. Adine-Atherton, Chicago (1971)
- [R3.104] Nti, K.O.: Rent-Seeking with Asymmetric Valuation. *Public Choice* 98, 415–430 (1999)
- [R3.105] Olson, M.: *The Logic of Collective Action*. Harvard Univ. Press, Cambridge (1965)
- [R3.106] Park, R.E.: The Possibility of a Social Welfare Function: Comment. *Amer. Econ. Rev.* 57, 1300–1304 (1967)
- [R3.107] Pattanaik, P.K.: *Voting and Collective Choice*. Cambridge Univ. Press, New York (1971)
- [R3.108] Pauly, M.V.: Cores and Clubs. *Public Choice* 9, 53–65 (1970)
- [R3.109] Plott, C.R.: Ethics, Social Choice Theory and the Theory of Economic Policy. *Jour. of Math. Soc.* 2, 181–208 (1972)
- [R3.110] Plott, C.R.: Axiomatic Social Choice Theory: An Overview and Interpretation. *Amer. Jour. Polit. Science* 20, 511–596 (1976)
- [R3.111] Prest, A.R.: The Budget and Interpersonal Distribution. *Public Finance* 23, 80–98 (1968)
- [R3.112] Rae, D.W.: Decision-Rules and Individual Values in Constitutional Choice. *Amer. Polit. Science Rev.* 63, 40–56 (1969)
- [R3.113] Rae, D.W.: The Limit of Consensual Decision. *Amer. Polit. Science Rev.* 69, 1270–1294 (1975)
- [R3.114] Rapport, A., et al.: *Prisoner's Dilemma*. Michigan University Press, Ann Arbor (1965)
- [R3.115] Rawls, J.A.: *A Theory of Justice*, Cambridge, Mass. Harvard Univ. Press, Cambridge (1971)
- [R3.116] Rawls, J.A.: Concepts of Distributional Equity: Some Reasons for the maximum Criterion. *Amer. Econ. Rev.* 64, 141–146 (1974)
- [R3.117] Ray, P.: Independence of Irrelevant Alternatives. *Econometrica* 41, 987–991 (1973)
- [R3.118] Reimer, M.: The Case for Bare Majority Rule. *Ethics* 62, 16–32 (1951)
- [R3.119] Reimer, M.: *The Theory of Political Coalition*. Yale Univ. Press, New Haven (1962)

- 
- [R3.120] Roberts, F.S.: *Measurement Theory: with Applications to Decision Making, Utility and the Social Science*. Addison-Wesley, Reading (1979)
- [R3.121] Roberts, K.W.S.: Voting Over Income Tax Schedules. *Jour. of Public Econ.* 8, 329–340 (1977)
- [R3.122] Rothenberg, J.: *The Measurement of Social Welfare*. Prentice-Hall, Englewood Cliffs (1961)
- [R3.123] Rowley, C.K. (ed.): *Democracy and Public Choice*. Basil Blackwell, New York (1987)
- [R3.124] Saposnik, R.: On the Transitivity of the Social Preference Relation Under Simple Majority Rule. *Jour. Econ. Theory* 10, 1–7 (1975)
- [R3.125] Satterthwaite, M.A.: Strategy-Proofness and Arrows Conditions: Existence and Correspondence Theorem for Voting Procedures and Social Welfare Functions. *Jour. of Econ. Theory* 10, 187–217 (1975)
- [R3.126] Schneider, H.: *National Objectives and Project Appraisal in Developing Countries*. Development Centre of OECD, Paris (1975)
- [R3.127] Sen, A.K.: A Possibility Theorem on Majority Decisions. *Econometrica* 34, 491–499 (1966)
- [R3.128] Sen, A.K.: Quasi-transitivity, Rational Choice and Collective Decisions. *Rev. Econ. Stud.* 36, 381–394 (1969)
- [R3.129] Sen, A.K.: Rawls versus Benthan: An Axiomatic Examination of the Pure Distribution Problem. *Theory and Decision*, vol. 4, pp. 301–310 (Februaury/April 1974)
- [R3.130] Sen, A.K.: Informational Basis of Alternative Welfare Approaches Aggregation and Income Distribution. *Jour. Public Econ.* 3, 387–403 (1974)
- [R3.131] Sen, A.K.: Liberty, Unanimity and Rights. *Economica* 43, 217–245 (1976)
- [R3.132] Sen, A.K.: Social Choice Theory: A Re-examination. *Econometrica* 45, 43–89 (1977)
- [R3.133] Sen, A.K.: On Weight and Measures Informational Constraints in Social Welfare Analysis. *Econometrica* 45, 1539–1572 (1977)
- [R3.134] Sen, A.K.: *Collective Choice and Social Welfare*. Holden-Day, San Francisco (1970)
- [R3.135] Siegan, B.H.: *Economic Liberties and the Constitution*. Univ. of Chicago Press, Chicago (1980)
- [R3.136] Stone, A.H., et al.: Generalized Sandwich Theorems. *Duke Math. Jour.* 9, 356–359 (1942)

- [R3.137] Taylor, M.J.: Graph Theoretical Approach to the Theory of Social Choice. *Public Choice* 4, 35–48 (1968)
- [R3.138] Taylor, M.J.: Proof of a Theorem on Majority Rule. *Behavioral Science* 14, 228–231 (1969)
- [R3.139] Tideman, J.N., et al.: A New and Superior Process for Making Social Choice. *Jour. of Polit. Economy* 84, 1145–1159 (1976)
- [R3.140] Tollison, R.D.: Rent-Seeking: A Survey. *Kyklos* 35, 575–602 (1982)
- [R3.141] Tollison, R.M., et al.: Information and Voting: An Empirical Note. *Public Choice* 24, 43–49 (1975)
- [R3.142] Tullock, G.: Some Problems of Majority Voting. *Jour. of Polit. Econ.* 67, 571–579 (1959)
- [R3.143] Tullock, G.: *The Politics of Bureaucracy*. Public Affairs Press, Washington (1965)
- [R3.144] Varian, H.R.: Equity, Envy and Efficiency. *Jour. Econ. Theory* 9, 63–91 (1974)
- [R3.145] Varian, H.R.: Two Problems in the Theory of Fairness. *Jour. of Public Econ.* 5, 249–260 (1976)
- [R3.146] Williamson, O.E., et al.: Social Choice: A Probabilistic Approach. *Econ. Jour.* 77, 797–813 (1967)
- [R3.147] Wilson, R.: A Game-Theoretic Analysis of Social Choice. In: Liebermann, B. (ed.) *Social Choice*, pp. 393–407. Gordon and Breach, New York (1971)
- [R3.148] Wilson, R.A.: Stable Coalition Proposals in Majority-Rule Voting. *Jour. of Econ. Theory* 3, 254–271 (1971)
- [R3.149] Wingo, L., et al. (eds.): *Public Economics and Quality of Life*. Hopkins Univ. Press, John Baltimore (1977)
- [R3.150] Yaari, M.E., et al.: On Dividing Justly. *Social Choice and Welfare* 1, 1–24 (1984)

## **R4 On Expectations, Uncertainty and Rationality**

- [R4.1] Bowman, M.J. (ed.): *Expectations, Uncertainty and Business Decisions*, New York, Social Science Research Council (1958)
- [R4.2] Bray, M.M., Kreps, D.: Rational Learning and Rational Expectations. In: Feiwel, G. (ed.) *Arrow and the Ascent of Modern Economic Theory*, pp. 597–625. New York University Press, New York (1987)

- 
- [R4.3] Brock, W.A.: On Models of Expectations Generated by Maximizing Behavior of Economic Agents Over Time. *Journal of Economic Theory* 5, 479–513 (1972)
- [R4.4] Carter, C.F.: A Revised Theory of Expectations. In: Carter, C.F., et al. (eds.) *Uncertainty and Business Decisions*, p. 56. Liverpool University Press, Liverpool (1957)
- [R4.5] Carter, C.F.: A Revised Theory of Expectations. *Economic Journal* 63, 811–820 (1953)
- [R4.6] Carter, C.F., Ford, J.L. (eds.): *Expectations and Uncertainty in Economics*. Basil Blackwell, Malden (1972)
- [R4.7] Champernowne, D.G.: *Uncertainty and Estimation in Economics*, Edingburgh, U.K., Oliver Boyd, vol. I, II (1969)
- [R4.8] Christopher, T.: *Equilibrium, Expectations, and Information: a Study of the General Theory and Modern Classical Economics*, Boulder Colo. Westview Press (1988)
- [R4.9] Cyert, R.M., DeGroot, M.H.: Rational Expectations and Bayesian Analysis. *Journal of Political Economy* 82, 521–536 (1974)
- [R4.10] DeCanio, S.J.: Rational Expectations and Learning from Experience. *Quarterly Journal of Economics* 93, 47–57 (1979)
- [R4.11] Diamond, P., Rothschild, M. (eds.): *Uncertainty in Economics: Readings and Exercises*. Academic Press, New York (1978)
- [R4.12] Dompere, K.K.: Some Theorems on Rational Expectations and Optimal Forecast. Working Paper, Department of Economics, Howard University, Washington, D.C (1987)
- [R4.13] Dompere, K.K.: Rational Expectations, Optimal Forecast and Optimal Control Theoretic Decisions. Working Paper, Department of Economics, Howard University, Washington, D.C (1988)
- [R4.14] Dornbusch, R.: Expectations and Exchange Rate Dynamics. *Journal of Political Economy* 84, 1161–1176 (1976)
- [R4.15] Dorfman, R.: Review of *Uncertainty and Business Decisions*. In: Carter, C.F., et al. (eds.) *Uncertainty and Business Decisions*. Liverpool University Press, Liverpool (1957)
- [R4.16] Evans, G.: Expectational Stability and Multiple Equilibria Problem in Linear Rational Expectations Models. *Quarterly Journal of Economics* 100, 1217–1234 (1985)
- [R4.17] Fellner, W.: *Probability and Profit*, Homewood, Ill. Richard D. Irwin Inc.(1965)
- [R4.18] Ford, J.L.: *Choice, Expectation and Uncertainty: An Appraisal of G.L.S. Shackle's Theory*. Barnes and Noble Books, Totowa (1983)

- 
- [R4.19] Fischer, S. (ed.), *Rational Expectations and Economic Policy*, Chicago, National Bureau of Economic Research (1980)
- [R4.20] Friedman, B.: *Optimal Expectations and the Extreme Information Assumptions of Rational Expectations Macromodels*. *Journal of Monetary Economics* 6, 23–41 (1979)
- [R4.21] Friedman, B.: *Survey Evidence on ‘Rationality’ of Interest Rate Expectations*. *Journal of Monetary Economics* 6, 453–465 (1980)
- [R4.22] Frydman, R., Phelps, E.S. (eds.): *Individual Forecasting and Aggregate Outcomes: “Rational Expectations” Examined*. Cambridge University Press, Cambridge (1983)
- [R4.23] Georgescu-Roegen, N.: *Choice Expectation and Measurability*. *Quarterly Journal of Economics* 68, 503–534 (1954)
- [R4.24] Georgescu-Roegen, N.: *The Nature of Expectations and Uncertainty*. In: Bowman, M.J. (ed.) *Expectations, Uncertainty and Business Decisions*. Social Science Research Council, New York, pp. 13–16 (1958)
- [R4.25] Gorman, W.M.: *A Note on Revised Theory of Expectations*. *Economic Journal* 68, 549–551 (1957)
- [R4.26] Graaf, V., De, J., Baumol, W.J.: *Three Notes on Expectations in Economics*. *Economica*, 338–342 (November 1949)
- [R4.27] Hamouda, O.F., Rowley, R.: *Expectations, Equilibrium, and Dynamics: A History of Recent Economic Ideas and Practices*. St. Martin’s Press, New York (1988)
- [R4.28] Hey, J.D.: *Uncertainty in Microeconomics*. Oxford Martin Robertson Pub. (1979)
- [R4.29] Hirshleifer, J.: *The Analytics of Uncertainty and Information*. Cambridge University Press, Cambridge (1992)
- [R4.30] Hirshleifer, J.: *The Analytics of Uncertainty and Information: An Expository Survey*. *Journal of Economic Literature* 17, 1375–1421 (1979)
- [R4.31] Holden, K., et al.: *Expectations: Theory and Evidence*. St. Martins Press, New York (1985)
- [R4.32] Huntzinger, R.L.: *Market Analysis with Rational Expectations*. *Journal of Econometrics* 10, 127–145 (1979)
- [R4.33] Kantor, B.: *Rational Expectations and Economic Thought*. *Journal of Economic Literature* 17, 1422–1441 (1979)
- [R4.34] Knight, F.: *Risk, Uncertainty and Profit*. Houghton Mifflin and Co., Boston (1921)

- [R4.35] Kollintzas, T. (ed.): *The Rational Expectations and Equilibrium Inventory Model: Theory and Applications*. Springer, New York (1989)
- [R4.36] Krugman, P.R.: *History vs. Expectations*, Cambridge, Mass., National Bureau of Economic Research NBER working paper, 32971 (May 1989)
- [R4.37] Lachmann, L.M.: *Expectations and the Meaning of Institutions: Essays in Economics*. Routledge, New York (1994)
- [R4.38] Lachman, L.M.: *Capital, Expectations, and the Market Process: Essays in the Theory of Market Economy*, Kansas City. Sheed Andrews and McMeel, Inc. (1977)
- [R4.39] Lucas, R.E., Sargent, T.J. (eds.): *Rational Expectations and Economic Practice*. University of Minnesota Press, Minneapolis (1981)
- [R4.40] Mars, J.: *A Study in Expectations: Reflection on Shackle's Expectation in Economics*. Yorkshire Bulletin of Economic and Social Research 2(2), 63–98 (1950)
- [R4.41] Masuch, M., Polos, L. (eds.): *Knowledge Representation and Reasoning Under Uncertainty: Logic at Work*. Springer, Berlin (1994L)
- [R4.42] Minford, P., Peel, D.: *Rational Expectations and the New Macroeconomics*. Oxford University Press, Oxford (1983)
- [R4.43] Muth, J.F.: *Rational Expectations and the Theory of Price Movements*. *Econometrica* 29, 315–335 (1961)
- [R4.44] Nelson, C.R.: *Rational Expectations and the Predictive Efficiency of Economic Models*. *Journal of Business* 48, 331–343
- [R4.45] Ozga, A.S.: *Expectations in Economic Theory*. Wiedenfeld and Nicolson Pub., London (1965)
- [R4.46] Pesando, J.E.: *A Note on the Rationality of the Livingston Price Expectations*. *Journal of Political Economy* 83, 849–858 (1975)
- [R4.47] Pesaran, M.H.: *The Limits to Rational Expectations*. Blackwell, New York (1988)
- [R4.48] Price, W.C., Chissick, S.S. (eds.): *The Uncertainty Principle and Foundations of Quantum Mechanics: A Fifty Years' Survey*. Wiley, New York (1977)
- [R4.49] Radner, R.: *Rational Expectations Equilibrium: Generic Existence and information Revealed by Prices*. *Econometrica* 47, 655–678 (1979)



- [R4.50] Sargent, T.: Rational Expectations and the Theory of Economic Policy. *Journal of Monetary Economics* 2, 169–184 (1976)
- [R4.51] Shackle, G.L.S.: *Expectations in Economics*. Cambridge University Press, Cambridge (1952)
- [R4.52] Shackle, G.L.S.: *Expectations in Economics and Other Reflections*. Cambridge University Press, Cambridge (1954)
- [R4.53] Shackle, G.L.S.: *Expectations in Enterprise and Profit*. George Allen and Unwin, London (1970)
- [R4.54] Sheffrin, S.M.: *Rational Expectations*. Cambridge University Press, Cambridge (1983)
- [R4.55] Spear, S.: Learning Rational Expectations under Computable Constraints. *Econometrica* 57, 889–910 (1989)
- [R4.56] Swamy, P.A.V.B., Barth, J.R., Tinsley, P.A.: The Rational Expectations Approach to Economic Modelling. *Journal of Economic Dynamics and Control* 4, 125–148 (1982)
- [R4.57] Turvey, R., et al.: Three Notes on Expectations in Economics. *Economica* 16, 339–351 (1949)

## **R5 On Decision-Choice Process, Fuzziness and Rationality**

- [R5.1] Adamo, J.M.: Fuzzy Decision Trees. *Fuzzy Sets and Systems* 4(3), 207–219 (1980)
- [R5.2] Asai, K., Tanaka, H.: Applications of Fuzzy Sets Theory To Decision Making and Control. *Jour. JAACE* 19, 235–242 (1975)
- [R5.3] Asai, K., et al.: Decision Making and Its Goal in Fuzzy Environment. In: Zadeh, L.A., et al. (eds.) *Fuzzy Sets and Their Applications to Cognitive and Decision Processes*, pp. 257–277. Academic Press, New York (1975)
- [R5.4] Baldwin, N.C.F., et al.: Comparison of Fuzzy Sets on the Decision Spaces. *Fuzzy Sets and Systems* 2(3), 213–231 (1979)
- [R5.5] Banerjee, A.: Fuzzy Choice Functions, Revealed Preference and Rationality. *Fuzzy Sets and Systems* 70, 31–44 (1995)
- [R5.6] Basu, A., Dutta, A.: Reasoning with Imprecise Knowledge to enhance Intelligent Decision Support. *IEEE Tran. On System, man, and Cybernetics* 19(4), 756–770 (1989)
- [R5.7] Bellman, R.E., Zadeh, L.A.: Decision-making in Fuzzy Environment. *Management Science* 17, 141–164 (1970)

- [R5.8] Bezdek, J., et al.: Fuzzy Measures of Preference and Consensus in Group Decision-Making. In: Proceeding of the 1977 IEE Conference on Decision and Control, pp. 1303–1308 (1977)
- [R5.9] Bezdek, J.: A Fuzzy Relation Space for Group Decision Theory. *Fuzzy Sets and Systems* 1, 255–268 (1978)
- [R5.10] Bezdek, J.: Fuzzy Relation Spaces for Group Decision Theory: An Application. *Fuzzy Sets and Systems* 2(1), 5–14 (1979)
- [R5.11] Bezdek, J.C., et al.: Convex Decomposition of Fuzzy Partitions. *Jour. of Math. Analysis and Applications* 67(2), 490–512 (1979)
- [R5.12] Bezdek, J.C.: *Pattern Recognition with Fuzzy Objective Function Algorithms*. Plenum Press, New York (1981)
- [R5.13] Bezdek, J.C. (ed.): *Analysis of Fuzzy Information*, 3 volumes. FL CRC Press, Boca Raton (1987)
- [R5.14] Bezdek, J.C., Pal, S.K. (eds.): *Fuzzy Models for Pattern Recognition: Methods that Search for Patterns in Data*. IEEE Press, New York (1992)
- [R5.15] Bhakat, S.K., Das, P.: On the definition of a fuzzy subgroup. *Fuzzy Sets and Systems* 51(2), 235–241 (1992)
- [R5.16] Bit, A.K., et al.: Fuzzy Programming Approach to Multicriteria decision-Making Transportation Problem. *Fuzzy Sets and Systems* 50(2), 135–141 (1992)
- [R5.17] Bliss, J.M.: Fuzzy Sets in Multiple Criteria Decision Making. *TIMS Studies in Management Science* 6, 21–30 (1977)
- [R5.18] Blin, J.M.: Fuzzy Relations in Group Decision Theory. *Jour. Cybernetics* 4, 17–22 (1974)
- [R5.19] Blin, J.M., et al.: Fuzzy Sets and Social Choice. *Jour. Cybernetics* 3, 28–33 (1973)
- [R5.20] Bocklish, S., et al.: *Fuzzy Sets Applications, Methodological Approaches and Results*, Berlin, Verlag (1986)
- [R5.21] Borisov, A.N.: A Theory of Possibility for Decision-Making. *Fuzzy Sets and Systems* 9(1), 13–23 (1983)
- [R5.22] Bouchon, B.: Fuzzy Questionnaires. *Fuzzy Sets and Systems* 6(1), 1–9 (1981)
- [R5.23] Bouchon, B., et al. (eds.): *Uncertainty and Intelligent Systems*. Springer, New York (1988)
- [R5.24] Bouchon, B., et al. (eds.): *Uncertainty and Knowledge-Based Systems*. Springer, New York (1987)
- [R5.25] Bouchon-Meunien, B., et al.: Towards General Measures of Comparison of Objects. *Fuzzy Sets and Systems* 84(2), 143–154 (1996)

- 
- [R5.26] Buckley, J.J.: Fuzzy Decision Making with Data: Applications to Statistics. *Fuzzy Sets and Systems* 16(2), 139–147 (1985)
- [R5.27] Capocelli, R.M.: Fuzzy Sets and Decision Theory. *Information and Control* 23, 446–473 (1973)
- [R5.28] Carlsson, C.: *Fuzzy Set Theory for Management Decision*. TUV Rheinland, Koln (1990)
- [R5.29] Chen, S.J., et al.: *Fuzzy Multiple Attribute Decision Making: Methods and Applications*. Springer, New York (1992)
- [R5.30] Chen, S.J., et al.: *Fuzzy Multiple Decision Making*. *Lecture Notes in Economics and Math. Systems*, vol. 375. Springer, New York (1992)
- [R5.31] Chen, S.M.: A New Method for Handling Multicriteria Fuzzy Decision-Making Problems. *Cybernetics and Systems* 25(5), 409–420 (1994)
- [R5.32] Cox, E.: *The Fuzzy Systems Handbook*. Academic Press, Cambridge (1994)
- [R5.33] Capocelli, R.M., et al.: Fuzzy Sets and Decision Theory. *Information and Control* 23, 446–473 (1973)
- [R5.34] Czogala, E., et al.: Aspects for the Evaluation of Decision Situations. In: Gupta, M.M., et al. (eds.) *Fuzzy Information and Decision Processes*, pp. 41–49. North-Holland, New York (1982)
- [R5.35] Dimitrov, V.: Group Choice Under Fuzzy Information. *Fuzzy Sets and Systems* 9(1), 25–40 (1983)
- [R5.36] Dimitrov, V.: Creative Decision-Making Through Fuzzy Catastrophes. In: Gupta, M.M., et al. (eds.) *Approximate Reasoning in Expert Systems*, pp. 391–399. North-Holland, New York (1982)
- [R5.37] Di Nola, A., et al.: Hyperpatial Representation of a Particular Set of Fuzzy Preference Relations. *Fuzzy Sets and Systems* 7(1), 79–88 (1982)
- [R5.38] Di Nola, A., et al.: Fuzzy Relation Equations Theory as a Basis of Fuzzy Modelling: An Overview. *Fuzzy Sets and Systems* 40(3), 415–429 (1991)
- [R5.39] Di Nola, A., et al.: Fuzzy Relational Equation Under a Class of Triangular Norms: A Survey and New Results. *Stochastica* 8(2), 99–146 (1984)
- [R5.40] Dompere, K.K.: The Theory of Fuzzy Decisions. In: Gupta, M.M., et al. (eds.) *Fuzzy Information and Decision Processes*, pp. 365–379. North-Holland, New York (1982)

- [R5.41] Dubois, D., et al.: *Fuzzy Sets and Systems: Theory and Applications*. Academic Press, New York (1980)
- [R5.42] Dubois, D., et al.: *Measuring and Updating information*. *Information Science* 57-58, 181–195 (1991)
- [R5.43] Dubois, D., et al.: *Possibility Theory*. Plenum Press, New York (1988)
- [R5.44] Dubois, D., et al.: *The Use of Fuzzy Numbers in Decision Analysis*. In: Gupta, M.M., et al. (eds.) *Fuzzy Information and Decision Processes*, pp. 309–322. North-Holland, New York (1982)
- [R5.45] Efstathiou, J., et al.: *Multi-attribute Decision-making Using a Fuzzy Heuristic Approach*. *IEEE Trans. On System, Man and Cybernetics* 9, 326–333 (1979)
- [R5.46] Eick, C.F., et al.: *Decision Making Involving Imperfect Knowledge*. *IEEE Transactions on Systems, Man and Cybernetics* 23(3), 840–851 (1993)
- [R5.47] Ento, Y.: *Fuzzy Decision Theory*. In: Lasker, G.E. (ed.) *Applied Systems and Cybernetics*, vol. 6, pp. 2980–2990. Pergamon Press, New York (1980)
- [R5.48] Francioni, J.M., et al.: *Imprecise Decision Tables and Their Optimization*. In: Gupta, M.M., et al. (eds.) *Approximate Reasoning in Expert Systems*, pp. 89–96. North-Holland, New York (1982)
- [R5.49] Freire, E., et al.: *A Method of Multi-criteria Analysis*. In: Gupta, M.M., et al. (eds.) *Approximate Reasoning in Expert Systems*, pp. 289–300. North-Holland, New York (1982)
- [R5.50] Fung, L.W.: *An Axiomatic Approach to Rational Decision-Making in a Fuzzy Environment*. In: Zadeh, L.A., et al. (eds.) *Fuzzy Sets and Their Applications to Cognitive and Decision Processes*, pp. 227–256. Academic Press, New York (1975)
- [R5.51] Fung, L.W., et al.: *The K'th Optimal Policy Algorithm for Decision-Making in Fuzzy Environments*. In: Eykhoff, P. (ed.) *Identification and System Parameter Estimation*, pp. 1025–1059. North-Holland, New York (1974)
- [R5.52] Gluss, B.: *Fuzzy Multistage Decision-Making*. *Intern. Jour. of Control* 17, 177–192 (1973)
- [R5.53] Gupta, M.M., et al. (eds.): *Fuzzy Automata and Decision Processes*. North-Holland, New York (1977)
- [R5.54] Gupta, M.M., et al. (eds.): *Fuzzy Information and Decision Processes*. North-Holland, New York (1982)

- 
- [R5.55] Gupta, M.M., et al. (eds.): *Approximate Reasoning in Expert Systems*. North-Holland, New York (1982)
- [R5.56] Gupta, M.M., et al. (eds.): *Fuzzy Computing: Theory, Hardware and Applications*. North-Holland, New York (1988)
- [R5.57] Gupta, M.M., et al. (eds.): *Fuzzy Logic In Knowledge-Based Systems, Decision and Control*. North-Holland, New York (1988)
- [R5.58] Gupta, M.M., et al. (eds.): *Advances in Fuzzy Set Theory and Applications*. North-Holland, New York (1978)
- [R5.59] Gupta, M.M., et al.: *On the Principles of Fuzzy Neural Networks*. *Fuzzy Sets and Systems* 61(1), 1–18 (1994)
- [R5.60] Hagg, C.: *Possibility and Cost in Decision Analysis*. *Fuzzy Sets and Systems* 1(2), 81–86 (1978)
- [R5.61] Herrera, F., et al.: *A Rationale Consensus Model in Group Decision Making Using Linguistic Assessments*. *Fuzzy Sets and Systems* 88(1), 31–49 (1997)
- [R5.62] Hwang, C.L., et al.: *Multiple Attribute Decision Making: Methods and Applications*. Springer, New York (1981)
- [R5.63] Jacobson, D.H.: *On Fuzzy Goals and Maximizing Decisions in Stochastic Optimal Control*. *Jour. Math., Anal. and Appl.* 55, 434–440 (1976)
- [R5.64] Jain, R.: *Decision-making in the Presence of Fuzzy Variable*. *IEEE Trans. System, Man and Cybernetics*, 698–703 (1976)
- [R5.65] Jain, R.: *Procedure for Multi-aspect Decision Making Using Fuzzy Sets*. *Intern. Jour. of Systems Science* 8, 1–7 (1977)
- [R5.66] Jain, R.: *Decision-Making in the Presence of Fuzziness and Uncertainty*. In: *Proceedings of the IEEE Conference on Decision and control*, New Orleans, pp. 1318–1323 (1978)
- [R5.67] Jamshidi, M., et al. (eds.): *Fuzzy Logic and Control*. Prentice-Hall, Englewood Cliffs (1993)
- [R5.68] Janko, W.H., et al. (eds.): *Progress in Fuzzy Sets and Systems*. Kluwer, Boston (1990)
- [R5.69] Johnston, D.M., et al.: *Application of Fuzzy Decision Making: An Evaluation*. *Civil Engineering Systems* 5(2), 87–92 (1988)
- [R5.70] Jones, A., et al. (eds.): *Fuzzy Sets Theory and Applications*. D. Reidal, Boston (1986)
- [R5.71] Kacprzyk, J.: *Multistage Decision Processes in a Fuzzy Environment: A Surey*. In: Gupta, M.M., et al. (eds.) *Fuzzy Information and Decision Processes*, pp. 251–266. North-Holland, New York (1982)

- [R5.72] Kacprzyk, J.: *Multistage Decision-Making Under Fuzziness*. TUV Rheinland, Koln (1983)
- [R5.73] Kacprzyk, J.: *Group Decision-Making with a Fuzzy Majority via Linguistic Quantifiers, Part I: A Consensory-Like Pooling*. *Cybernetics and Systems* 16(2-3), 119–129 (1985)
- [R5.74] Kacprzyk, J.: *Group Decision-Making with a Fuzzy Majority via Linguistic Quantifiers. Part II: A Competitive-Like Pooling*. *Cybernetics and Systems* 16(2-3), 131–144
- [R5.75] Kacprzyk, J., et al. (eds.): *Multiperson Decision Making Using Fuzzy Sets and Possibility Theory*. Kluwer, Dordrecht (1990)
- [R5.76] Kacprzyk, J., et al. (eds.): *Non-Conventional Preference Relations in Decision Making*. Springer, New York (1988)
- [R5.77] Kaymak, U., et al.: *A Sensitivity Analysis Approach to Introducing Weights Factors into Decision Functions in Fuzzy Multicriteria Decision Making*. *Fuzzy Sets and Systems* 97, 169–182 (1988)
- [R5.78] Kickert, W.J.M.: *Fuzzy Theories on Decision-Making*. Maritinus Nighoff, Boston (1978)
- [R5.79] Kim, J.B.: *Fuzzy Rational Choice Functions*. *Fuzzy Sets and Systems* 10(1), 37–44 (1983)
- [R5.80] Kitainik, L.: *Fuzzy Decision Procedures with Binary Relations: Toward a Unified Theory*. Kluwer, Boston (1993)
- [R5.81] Klir, G.J., et al.: *Fuzzy Sets and Fuzzy Logic: Theory and Applications*. Prentice-Hall, Englewood Cliffs (1995)
- [R5.82] Kuz'min, V.B., Ovchinnikov, S.V.: *Groupe Decision I: In Arbitrary Spaces of Fuzzy Binary Relations*. *Fuzzy Sets and Systems* 4(1), 53–62
- [R5.83] Kuz'min, V.B., Ovchinnikov, S.V.: *Design of Group Decisions II: In Spaces of Partial Order Fuzzy Relations*. *Fuzzy Sets and Systems* 4(2), 153–166 (1980)
- [R5.84] Leung, Y.: *A Concept of a Fuzzy Ideal for Multicriteria Conflict Resolution*. In: Wang, P.P. (ed.) *Advances in Fuzzy Set Theory and Application*, pp. 387–403. Plenum, New York (1982)
- [R5.85] Leung, Y.: *Dynamic Conflict Resolution Through A Theory of A Displaced Fuzzy Ideal*. In: Gupta, M.M., et al. (eds.) *Approximate Reasoning in Expert Systems*, pp. 381–390. North-Holland, New York (1982)
- [R5.86] Liou, T.S., et al.: *Subjective Assessment of Mental Workload: A Fuzzy Multicriteria Approach*. *Fuzzy Sets and Systems* 62, 155–165 (1994)

- 
- [R5.87] Loo, S.G.: Fuzzy Relations in the Social and Behavioral Sciences. *Jour. of Cybernetics* 8(1), 1–16 (1978)
- [R5.88] Lowen, R.: Comments on Zeleny's Paper Concerning Cognitive Equilibria. *Intern. Jour. of General Systems* 19(4), 387–393 (1991)
- [R5.89] Mamdani, E.H., et al. (eds.): *Fuzzy Reasoning and its Applications*. Academic Press, London (1981)
- [R5.90] Manes, E.G.: A Class of Fuzzy Theories. *Jour. of Math. Analysis and Applications* 85(2), 409–451 (1982)
- [R5.91] Mares, M.: *Computation Over Fuzzy Quantities*. CRC Press, Boca Raton (1994)
- [R5.92] Marin, R.S., et al.: Modeling the representation of Time from a Fuzzy Perspective. *Cybernetics and Systems* 25(2), 217–231 (1994)
- [R5.93] Marks II, R.J. (ed.): *Fuzzy Logic Technology and Applications*. IEEE Press, New York (1994)
- [R5.94] Menges, G., et al.: Linear Partial Information as Fuzziness. In: Bossel, H., et al. (eds.) *Systems Theory in the Social Sciences*, pp. 307–322. Birkhauser, Basel (1976)
- [R5.95] Nakamura, K.: Preference Relation on a Set of Fuzzy Utilities as a Basis for Decision Making. *Fuzzy Sets and Systems* 20, 147–162 (1986)
- [R5.96] Negoita, C.V., et al.: *Applications of Fuzzy Sets to Systems Analysis*. Basel an Stuttgart and Halster Press, New York (1975)
- [R5.97] Nie, J., et al.: *Fuzzy Neural Control: Principles, Algorithms and Applications*. Prentice-Hall, Englewood Cliffs (1994)
- [R5.98] Nojiri, H.: On the Fuzzy Team Decision in a Changing Environment. *Fuzzy Sets and Systems* 3(2), 137–150 (1980)
- [R5.99] Nojiri, H.: A Model of Fuzzy Team Decision. *Fuzzy Sets and Systems* 2(3), 201–212 (1973)
- [R5.100] Novak, V.J., et al.: *Fuzzy Approach to Reasoning and Decision-Making*. Kluwer, Boston (1992)
- [R5.101] Novak, V.: *Fuzzy Sets and Their Applications*. Adam Hilger, Bristol (1987)
- [R5.102] Nowakowska, M.: A New Theory of Time: Generation of Time from Fuzzy Temporal Relation. In: Lasker, G.E. (ed.) *Applied Systems and Cybernetics*, vol. VI, pp. 2742–2747. Pergamon Press, New York (1981)
- [R5.103] Nurmi, H.: A Fuzzy Solution to a Majority Voting Game. *Fuzzy Sets and Systems* 5(2), 187–198 (1981)

- [R5.104] Nurmi, H.: Approaches to Collective Decision-making with Fuzzy Preference Relations. *Fuzzy Sets and Systems* 6(3), 249–260 (1981)
- [R5.105] Orlovsky, S.A.: Decision-making With a Fuzzy Preference Relation. *Fuzzy Sets and Systems* 1, 155–167 (1978)
- [R5.106] Ostermark, R.: Temporal Interdependence in Fuzzy MCDM Problems. *Fuzzy Sets and Systems* 88(1), 69–80 (1997)
- [R5.107] Otto, K.N., et al.: Approximating  $\alpha$ -cuts with the Vertex Method. *Fuzzy Sets and Systems* 55(1), 43–50 (1993)
- [R5.108] Ovchinnikov, S.V.: The Duality Principle in Fuzzy Set Theory. *Fuzzy Sets and Systems* 42(1), 133–144 (1991)
- [R5.109] Ovchinnikov, S.V.: Choice Theory for Cardinal Scales. In: Gupta, M.M., et al. (eds.) *Fuzzy Information and Decision Processes*, pp. 323–338. North-Holland, New York (1982)
- [R5.110] Pedrycz, W.: Why triangular Membership Functions? *Fuzzy Sets and Systems* 64(1), 21–30 (1994)
- [R5.111] Pedrycz, W.: Neural Structures of Fuzzy Decision-making. *Jour. of Intelligent and Fuzzy Systems* 2(2), 161–178 (1994)
- [R5.112] Prade, H., et al.: *Fuzzy Logic in Knowledge Engineering*. TUV Rheinland, Koln (1986)
- [R5.113] Ragade, R.K., Gupta, M.M.: Fuzzy sets theory and applications - a synthesis. In: Gupta, M.M., et al. (eds.) *Advances in Fuzzy Set Theory and Applications*, pp. 19–25. North-Holland, New York (1978)
- [R5.114] Ragade, R.K.: Profile Transformation Algebra and Group Consensus Formation Through Fuzzy Sets. In: Gupta, M.M., et al. (eds.) *Fuzzy Automata and Decision Processes*, pp. 331–356. North-Holland, New York (1977)
- [R5.115] Roubens, M.: Choice Procedures in Fuzzy Multicriteria Decision Analysis Based on Pairwise Comparisons. *Fuzzy Sets and Systems* 84(2), 135–142 (1996)
- [R5.116] Saaty, T.L.: Exploring the Interface Between Hierarchies, Multiple Objectives and Fuzzy Sets. *Fuzzy Sets and Systems* 1(1), 57–68 (1978)
- [R5.117] Sakawa, M., et al.: Interactive Decision Making for Multiobjective linear Fractional Programming Problem with Fuzzy Parameters. *Cybernetics and Systems* 16(4), 377–394 (1985)
- [R5.118] Sanchez, E. (ed.): *Fuzzy Information, Knowledge Representation and Decision Analysis*. Pergamon Press, Oxford (1984)



- 
- [R5.119] Sanchez, E., et al. (eds.): *Approximate Reasoning in Intelligent Systems, Decision and Control*. Pergamon Press, Oxford (1987)
- [R5.120] Sekita, Y., et al.: *A Fuzzified Relevance Tree Approach for Solving the Complex Planning*. In: Gupta, M.M., et al. (eds.) *Approximate Reasoning in Expert Systems*, pp. 401–410. North-Holland, New York (1982)
- [R5.121] Seo, F., et al.: *Fuzzy Multiattribute Utility Analysis for Collective Choice*. *IEEE Transactions on Systems, Man and Cybernetics* 15(1), 45–53 (1985)
- [R5.122] Shimura, M.: *Fuzzy Sets Concept in Rank-ordering Objects*. *Jour. Math. Anal. and Appl.* 43, 717–733 (1973)
- [R5.123] Spillman, B., et al.: *A Dynamic Perspective On Leadership: Development of a Fuzzy Measurement Procedure*. *Fuzzy Sets and Systems* 7, 19–33 (1982)
- [R5.124] Sugeno, M.: *Fuzzy Decision-making Problems*. *Trans. SICE* 11, 709–714 (1975)
- [R5.125] Takeda, E.: *Interactive Identification of Fuzzy Outranking Relation in Multi-criteria Decision Problem*. In: Gupta, M.M., et al. (eds.) *Fuzzy Information and Decision Processes*, pp. 301–322. North-Holland, New York (1982)
- [R5.126] Takeda, E., et al.: *Multiple Criteria Decision Problems with Fuzzy Domination Structures*. *Fuzzy Sets and Systems* 3(2), 123–136 (1980)
- [R5.127] Tanaka, H., et al.: *A Formulation of Fuzzy Decision Problems and Its Application to an Investment Problem*. *Kybernetics* 5, 25–30 (1976)
- [R5.128] Tanino, T.: *Fuzzy Preference Ordering in Group Decision Making*. *Fuzzy Sets and Systems* 12, 117–131 (1984)
- [R5.129] Tanino, T.: *On Group Decision Making, Under Fuzzy Preferences*. In: Kacprzyk, J., et al. (eds.) *Multiperson Decision Making Using Fuzzy Sets and Possibility Theory*, pp. 172–185. Kluwer, Dordrecht (1990)
- [R5.130] Tseng, T.Y., et al.: *A New Algorithm for Fuzzy Multicriteria Decision Making*. *Intern. Jour. of Approximate Reasoning* 6, 45–66 (1992)
- [R5.131] Uemura, Y.: *A Simple Decision Rule on Fuzzy Events*. *Cybernetics and Systems* 24(5), 509–521 (1993)

- [R5.132] Uemura, Y.: A Decision Rule on Fuzzy Events Under an Observation. *Jour. of Fuzzy Mathematics* 1(1), 39–52 (1993)
- [R5.133] Uhr, L.: Toward Integrated Cognitive Systems Which must Make Fuzzy Decisions About Fuzzy Problems. In: Zadeh, L.A., et al. (eds.) *Fuzzy Sets and Their Applications to Cognitive and Decision Processes*, pp. 353–393. Academic Press, New York (1975)
- [R5.134] Wang, P.P., et al.: *Fuzzy Sets*. Plenum Press, New York (1980)
- [R5.135] Wang, P.P.: *Advances in Fuzzy Sets, Possibility Theory and Applications*. Plenum Press, New York (1983)
- [R5.136] Yager, R.R.: A Model of Participatory Learning. *IEEE Transactions on Systems, Man and Cybernetics* 20(5), 1229–1234 (1990)
- [R5.137] Yager, R.R., et al.: Decision-making with Fuzzy Sets. *Decision Science* 6, 590–600 (1975)
- [R5.138] Yager, R.R.: Fuzzy Decision Making Including Unequal Objectives. *Fuzzy Sets and Systems* 1(2), 87–95 (1978)
- [R5.139] Yager, R.R.: Decisions with Ordinal Preferences and Importances. *Kybernetics* 9, 109–114 (1980)
- [R5.140] Yager, R.R.: Satisfaction and Fuzzy Decision Functions. In: Wang, P.P. (ed.) *Fuzzy Sets*, pp. 171–194. Plenum Press, New York (1980)
- [R5.141] Yager, R.R.: On Considerations of Credibility of Evidence. *Intern. Jour. of Approximate Reasoning* 71(1-2), 45–72 (1992)
- [R5.142] Yao, Y.Y., et al.: A Decision Theoretic Framework for Approximating Concepts. *Intern. Jour. of Man-Machine Studies* 37(6), 793–809 (1992)
- [R5.143] Yu, P.L.: Cone Convexity, Cone Extreme Points and nondominated Solutions in Decision Problem with Multiobjectives. *Jour. of Optim., Theory and Appl.* 14, 319–377 (1974)
- [R5.144] Yu, P.L.: Cone Convexity, Cone Extreme points and Nondominated Solutions in Decision Problems with Multiobjectives. In: Leitman, G. (ed.) *Multicriteria Decision Making and Differential Games*, pp. 1–59. Plenum press, New York (1979)
- [R5.145] Zadeh, L.A.: Similarity Relations and Fuzzy Ordering. *Information Science* 3, 117–200 (1971)
- [R5.146] Zadeh, L.A.: Outline of a New Approach to the Analysis of Complex System and Decision Processes. *IEEE Trans. on System, Man., and Cybernetics* 3(1), 28–44 (1973)
- [R5.147] Zadeh, L.A., et al.: *Fuzzy Sets and Their Applications to Cognitive and Decision Processes*. Academic Press, New York (1975)

- [R5.148] Zhang, D., et al.: State-dependent Weights in Multicriteria Value Functions. *Jour. of Optimization Theory and Applications* 74(1), 1–21 (1992)
- [R5.149] Zhang, H., et al.: A Technique for Handling Fuzzy Decision-Making Problems Concerning two kinds of Uncertainty. *Cybernetics and Systems* 22(6), 681–698 (1991)
- [R5.150] Zimmerman, H.J.: *Fuzzy Sets, Decision Making and Expert Systems*. Kluwer, Boston (1987)
- [R5.151] Zimmerman, H.J.: *Fuzzy Set Theory and its Applications*. Kluwer, Boston (1991)
- [R5.152] Zimmerman, H.J., et al. (eds.): *Fuzzy Sets and Decision Analysis, TIMS Studies in the Management Science*, vol. 20. North-Holland/Elsevier, Amsterdam (1984)
- [R5.153] Zimmerman, H.J., et al.: Latent Connectives in Human Decisions Making. *Fuzzy Sets and Systems* 4(1) (1980)
- [R5.154] Zimmerman, H.-J., et al.: Decisions and Evaluation by Hierarchical Aggregation of Information. *Fuzzy Sets and Systems* 10(3), 243–260 (1983)

## **R6 On Fuzzy Decisions, Applications and Rationality**

- [R6.1] Adlassning, K.P.: A Survey on Medical Diagnosis and Fuzzy Subsets. In: Gupta, M.M., et al. (eds.) *Fuzzy Information and Decision Processes*, pp. 203–218. North-Holland, New York (1982)
- [R6.2] Adlassning, K.P., et al.: Computer-Assisted Medical Diagnosis Using Fuzzy Subsets. In: Gupta, M.M., et al. (eds.) *Fuzzy Information and Decision Processes*, pp. 219–248. North-Holland, New York (1982)
- [R6.3] Albin, M.: *Fuzzy Sets and Their Application to Medical Diagnosis*, A Ph.D. Dissertation, Dept. of Math., University of California, Berkeley, California, USA (1975)
- [R6.4] Allen, A.D.: A Method of Evaluating Technical Journals on the Basis of Published Comments Through Fuzzy Implication: A Survey of the Major IEEE Transactions. *IEEE Trans. Syst. Man and Cybernetics SMC-3*, 422–425 (1973)
- [R6.5] Allen, A.D.: Measuring the Empirical Properties of Sets. *IEEE Trans. System, Man and Cybernetics SMC-A*, 66–73 (1974)

- [R6.6] Bardossy, A., et al.: Fuzzy Fatigue Life Prediction. *Structural Safety* 6, 25–38 (1989)
- [R6.7] Bardossy, A.: Kriging with Imprecise (Fuzzy) Variogram, Part I: Theory Part II: Application. *Mathematical Geology* 22(1), 63–94 (1990)
- [R6.8] Bardossy, A., et al.: Fuzzy Rule-Based Modeling with Applications to Geophysical, Biological and Engineering Systems. CRS Press, New York (1995)
- [R6.9] Bardossy, A., et al.: Fuzzy rule-based Models for Infiltration. *Water Resources Research* 29, 373–382 (1993)
- [R6.10] Bardossy, A.: Analysis of a Karstic aquifer Management Problem by Fuzzy Composite Programming. *Water Resource Bulletin* 28(1), 63–74 (1992)
- [R6.11] Bezded, J.C.: A Physical Interpretation of Fuzzy ISODATA. *IEEE Transactions, Syst. Man and Cybern.* 6, 387–389 (1976)
- [R6.12] Bezded, J.C., et al.: Optimal Fuzzy Partitions: A Heuristic For Estimating the Parameters in Mixture of Normal Distributions. *IEEE Trans. Comp. C-24*, 835–838 (1975)
- [R6.13] Cao, H., et al.: Some Applications of Fuzzy Sets to Meteorological Forecasting. *Fuzzy Sets and Systems* 9(1), 1–12 (1983)
- [R6.14] Carlsson, C., et al. (eds.): Multiple Criteria Decision Making: Selected Case Studies. McGraw-Hill, New York (1981)
- [R6.15] Carlsson, C.: Tackling an MCDM - problem with the Help of Some Results from Fuzzy Sets Theory. *European Jour. of Operational Research* 10(3), 270–281 (1982)
- [R6.16] Cavallo, R.E. (ed.): *Systems Methodology in Social Science Research*. Kluwer, Boston (1982)
- [R6.17] Cervin, V.B., et al.: Toward Fuzzy Algorithms in Behavioral Modification. In: Gupta, M.M., et al. (eds.) *Fuzzy Information and Decision Processes*, pp. 291–296. North-Holland, New York (1982)
- [R6.18] Chanas, S., et al.: Maximum Flow in a Network with Fuzzy Arc Capacities. *Fuzzy Sets and Systems* 8(2), 165–173 (1982)
- [R6.19] Chang, R.L.P., et al.: Application of Fuzzy Sets in Curve Fitting. *Fuzzy Sets and Systems* 2(1), 67–74 (1979)
- [R6.20] Cheng, Y.Y.M., et al.: An Algorithm for Multiple Attribute, Multiple Alternative Decision Problems Based on Fuzzy Sets with Application to Medical Diagnosis. *IEEE Transactions on Systems, Man and Cybernetics* 10(10), 645–650 (1980)

- 
- [R6.21] Davidson, J., et al.: A Fuzzy Decision Model for the Design of Rural Natural Gas Networks. *Fuzzy Sets and Systems* 53(3), 241–252 (1993)
- [R6.22] Degani, R., et al.: The Problem of Linguistic Approximation in Clinical Decision Making. *Intern. Jour. of Approximate Reason* 2(2), 143–162 (1988)
- [R6.23] Dockery, J.T.: Fuzzy Design of Military Information Systems. *Intern. Jour. of Man-Machine Studies* 16(1), 1–38 (1982)
- [R6.24] Esogbue, A.O., et al.: Fuzzy Sets and the Modelling of Physician Decision Processes: Part I: The Initial Interview-Information Gathering Process. *Fuzzy Sets and Systems* 2, 279–291 (1979)
- [R6.25] Esogbue, A.O., et al.: Fuzzy Sets and the Modelling of Physician Decision process Part II: Fuzzy Diagnosis Decision Models. *Fuzzy Sets and Systems* 3(1), 1–9 (1980)
- [R6.26] Esogbue, A.O., et al.: Measurement and Valuation of a Fuzzy Mathematical Model for Medical Diagnosis. *Fuzzy Sets and Systems* 10, 223–242 (1983)
- [R6.27] Esogbue, A.O., et al.: On the Application of Fuzzy Set Theory to the Optimal Flood Control Problem Arising in Water Resources Systems. *Fuzzy Sets and Systems* 48(2), 155–172 (1992)
- [R6.28] Esogbue, A.O.: A Fuzzy Set Model For the Evaluation of Best Management Practices in Nonpoint Source Water Pollution Policy Formulation. In: Gupta, M.M., et al. (eds.) *Fuzzy Information and Decision Processes*, pp. 431–438. North-Holland, New York (1982)
- [R6.29] Feng, D.Y., et al.: *Fuzzy Mathematics in Earthquake Research*, vol. 1 and 2. Seismological Press, Beijing (1986)
- [R6.30] Feng, D.Y., et al.: Application of Fuzzy Decision-making in Earthquake Research. *Fuzzy Sets and Systems* 36(1), 15–26 (1990)
- [R6.31] Fordon, W.A., et al.: The Application of Fuzzy Set Theory to Medical Diagnosis. In: Gupta, M.M., et al. (eds.) *Advances in Fuzzy Set Theory and Applications*, pp. 445–461. North-Holland, New York (1978)
- [R6.32] Frank, P.M., et al.: Fuzzy Supervision and Application to Lean Production. *Intern. Jour. of Systems Science* 24(10), 1935–1944 (1993)

- [R6.33] Fieschi, M., et al.: SPHINX: An Interactive System for Medical Diagnosis Aids. In: Gupta, M.M., et al. (eds.) *Fuzzy Information and Decision Processes*, pp. 269–276. North-Holland, New York (1982)
- [R6.34] Giering III, E.W., et al.: The Application of Fuzzy Set Theory to the Modeling of Competition in Ecological Systems. *Fuzzy Sets and Systems* 9(2), 103–128 (1983)
- [R6.35] Gunaratne, M., et al.: Fuzzy Multi-attribute Decision Making in Pavement Management. *Civil Engineering Systems* 2(3), 166–170 (1985)
- [R6.36] Hammerbarch, I.M., et al.: The Personalization of Security Selection: An Application of Fuzzy Sets Theory. *Fuzzy Sets and Systems* 5(1), 1–10 (1981)
- [R6.37] Hora, F.: Fuzzy Simulation Model of Civil Evacuation From Large - Scale Earthquake - Generated Fires. In: Gupta, M.M., et al. (eds.) *Approximate Reasoning in Expert Systems*, pp. 313–328. North-Holland, New York (1982)
- [R6.38] Karwowski, W., et al. (eds.): *Applications of Fuzzy Set Theory in Human Factors*. Elsevier, New York (1986)
- [R6.39] Kerre, E.E.: The Use of Fuzzy Set Theory in Electrocardiological Diagnostics. In: Gupta, M.M., et al. (eds.) *Fuzzy Information and Decision Processes*, pp. 277–282. North-Holland, New York (1982)
- [R6.40] Kochen, M.: Applications of Fuzzy Sets in Psychology. In: Zadeh, L.A., et al. (eds.) *Fuzzy Sets and Their Applications to Cognitive and Decision Processes*, pp. 395–408. Academic Press, New York (1975)
- [R6.41] Kokawa, M., et al.: Experimental Approach to Fuzzy Simulation of Memorizing, Forgetting and Interference Process. In: Zadeh, L.A., et al. (eds.) *Fuzzy Sets and Their Applications to Cognitive and Decision Processes*, pp. 409–428. Academic Press, New York (1975)
- [R6.42] Kokawa, M., et al.: Fuzzy-theoretic and Concept - Formational Approach to Hint-effect Experiments in Human Decision Processes. *Fuzzy Sets and Systems* 2(1), 25–36 (1979)
- [R6.43] Lee, S.C., et al.: Fuzzy Sets and Neural Networks. *Jour. of Cybernetics* 4, 83–103 (1974)
- [R6.44] Leung, Y.: *Spacial Analysis and Planning Under Imprecision*. North-Holland, New York (1988)

- 
- [R6.45] Lusk, E.J.: Evaluating Performance Statistics Used to Monitor Performance: A Fuzzy Approach. *Fuzzy Set and Systems* 5(1), 149–158 (1981)
- [R6.46] Mou-chao, M., et al.: The Multistage Evaluation Method in Psychological Measurement: An Application of Fuzzy Sets Theory to Psychology. In: Gupta, M.M., et al. (eds.) *Fuzzy Information and Decision Processes*, pp. 307–312. North-Holland, New York (1982)
- [R6.47] Narasimhan, R.: A Fuzzy Subset Characterization of a Site-selection Problem. *Decision Sciences* 10(10), 618–628 (1979)
- [R6.48] Negoita, C.V.: Fuzzy Models for Social Processes. In: Bossel, H., et al. (eds.) *Systems Theory in the Social Science*, pp. 283–291. Birkhäuser, Basel (1976)
- [R6.49] Negoita, C.V., et al.: Fuzzy Systems and Artificial Intelligence. *Kybernetics* 3, 173–178 (1974)
- [R6.50] Negoita, C.V.: *Management Applications of Systems Theory*. Birkhauser, Basel (1979)
- [R6.51] Oguntade, O.O., et al.: Ophthalmological Prognosis via Fuzzy Subsets. *Fuzzy Sets and Systems* 7(2), 123–138 (1982)
- [R6.52] Oguntade, O.O., et al.: Evaluation of Architectural Design Profiles Using Fuzzy Sets. *Fuzzy Sets and Systems* 5(3), 221–234 (1981)
- [R6.53] Oheigeartaigh, M.: A Fuzzy Transportation Algorithm. *Fuzzy Sets and Systems* 8(3), 225–234 (1982)
- [R6.54] Olbero, A., et al.: The Structure of Relations in Personnel Management. *Fuzzy Sets and System* 5(2), 115–126 (1981)
- [R6.55] Onisawa, T., et al.: Fuzzy Human Reliability Analysis on the Chernobyl Accident. *Fuzzy Sets and Systems* 28(2), 115–127 (1988)
- [R6.56] Roberts, D.W.: Analysis of Forest Succession with Fuzzy Graph Theory. *Ecological Modelling* 45(4), 261–274 (1989)
- [R6.57] Saaty, T.L.: Exploring the Interface Between Hierarchies, Multiple Objectives and Fuzzy Sets. *Fuzzy Sets and Systems* 1(1), 57–68 (1978)
- [R6.58] Saitto, P., et al.: Fuzzy Characterization of Coronary Disease. *Fuzzy Sets and Systems* 5(3), 245–258 (1981)
- [R6.59] Sakawa, M., et al.: An Interactive Fuzzy Satisfying Method Using Augmented Minimax Problems and its Application to Environmental Systems. *IEEE Transactions on Systems, Man and Cybernetics* 15(6), 720–729 (1985)

- [R6.60] Sanchez, E.: Medical Applications with Fuzzy Sets. In: Jones, A., et al. (eds.) *Fuzzy Sets Theory and Applications*, pp. 331–347. D. Reidal, Boston (1986)
- [R6.61] Sanchez, E.: Medical Diagnosis and Composite Fuzzy Relations. In: Gupta, M.M., et al. (eds.) *Advances in Fuzzy Set Theory and Applications*, pp. 437–444. North-Holland, New York (1978)
- [R6.62] Sanchez, E.: Inverse of Fuzzy Relations: Application to Possibility Distributions and Medical Diagnosis. *Fuzzy Sets and Systems* 2(1), 75–86 (1979)
- [R6.63] Sanchez, E.: Solutions in Composite Fuzzy Relation Equations: Application to Medical Diagnosis in Brouwerian Logic. In: Gupta, M.M., et al. (eds.) *Fuzzy Automata and Decision Processes*, pp. 387–402. North-Holland, New York (1977)
- [R6.64] Saridis, G.N., et al.: Fuzzy Decision-making in Prosthetic Devices. In: Gupta, M.M., et al. (eds.) *Fuzzy Automata and Decision Processes*, pp. 387–402. North-Holland, New York (1977)
- [R6.65] Seif, A., et al.: Multi-group Classification Using Fuzzy-Correlation. *Fuzzy Sets, and Systems* 3(1), 109–122 (1980)
- [R6.66] Sekita, Y., et al.: A Fuzzified Relevance Tree Approach for Solving the Complex Planning. In: Zadeh, L.A., et al. (eds.) *Fuzzy Sets and Their Applications to Cognitive and Decision Processes*, pp. 401–410. Academic Press, New York (1975)
- [R6.67] Shortliffe, E.H., et al.: A Model of Inexact Reasoning in Medicine. *Math. Biosciences* 23, 351–379 (1975)
- [R6.68] Smets, P.: Medical Diagnosis: Fuzzy Sets and Degrees of Belief. *Fuzzy Sets and Systems* 5(3), 259–266 (1981)
- [R6.69] Song, Q., et al.: Forecasting Enrollments with Fuzzy Time Series - Part I. *Fuzzy Sets and Systems* 54(1), 1–9 (1993)
- [R6.70] Song, Q., et al.: Forecasting Enrollments with Fuzzy Time Series - Part II. *Fuzzy Sets and Systems* 62(1), 1–8 (1994)
- [R6.71] Soula, G., et al.: Soft Deduction Rules in Medical Diagnosis Processes. In: Gupta, M.M., et al. (eds.) *Fuzzy Information and Decision Processes*, pp. 89–98. North-Holland, New York (1982)
- [R6.72] Spillman, B., et al.: A Dynamic Perspective on Leadership: Development of a Fuzzy Measurement Procedure. *Fuzzy Sets and Systems* 1(1), 19–34 (1982)
- [R6.73] Tazaki, E., et al.: Structural Modeling in a Class of Systems Using Fuzzy Sets Theory. *Fuzzy Sets and Systems* 2(1), 87–104 (1979)



- [R6.74] Van de Walle, B., et al.: Fuzzy Multi-criteria Analysis of Cutting Techniques in Nuclear Reactor Dismantling Project. *Fuzzy Sets and Systems* 74(1), 115–126 (1995)
- [R6.75] Vila, M.A., et al.: Problems of Classification in a Fuzzy Environment. *Fuzzy Sets and Systems* 9, 229–241 (1983)
- [R6.76] Vila, M.A., et al.: On Medical Diagnosis Using Possibility Measures. *Fuzzy Sets and Systems* 10(3), 211–222 (1983)
- [R6.77] Wierzechon, S.T.: Application of Fuzzy Decision-making Theory to Coping with Ill-defined Problems. *Fuzzy Sets and Systems* 7(1), 1–18 (1982)
- [R6.78] Wierzechon, S.T.: An Algorithm for Identification of Fuzzy Measure. *Fuzzy Sets and Systems* 9(1), 69–78 (1983)
- [R6.79] Wierzechon, S.T.: Ill-Defined Problems - How to Cope with them. In: Lasker, G.E. (ed.) *Applied Systems and Cybernetics*, vol. VI, pp. 2748–2752. Pergamon Press, New York (1981)
- [R6.80] Woodbury, M.A., et al.: Clinical Pure Types as a Fuzzy Partition. *Jour. of Cybernetics* 4(3), 111–121 (1974)
- [R6.81] Yen, J., et al.: *Industrial Applications of Fuzzy Logic and Intelligent Systems*. IEEE Press, New York (1994)
- [R6.82] Zadeh, L.A.: Biological Applications of the Theory of Fuzzy Sets and Systems. In: Proctor, L.D. (ed.) *Biocybernetics of Central Nervous System*, pp. 199–212. Little Brown, Boston (1969)
- [R6.83] Zetenyi, T. (ed.): *Fuzzy Sets in Psychology*. North-Holland, New York (1988)
- [R6.84] Zhang, W., et al.: Mathematical Models of Multifactorial Decision and Weather Forecast. In: Sanchez, E. (ed.) *Fuzzy Information, Knowledge Representation and Decision Analysis*, pp. 265–269. Pergamon Press, Oxford (1984)

## **R7 On Game Theory, Risk Analysis. Fuzziness and Rationality**

- [R7.1] Aluja, G.J.: Towards a New Paradigm of Investment Selection in Uncertainty. *Fuzzy Sets and Systems* 84(2), 187–198 (1996)
- [R7.2] Aubin, J.P.: Cooperative Fuzzy Games. *Mathematics of Operations Research* 6, 1–13 (1981)
- [R7.3] Aubin, J.P.: *Mathematical Methods of Game and Economic Theory*. North-Holland, New York (1979)

- 
- [R7.4] Ayyub, B.M., et al. (eds.): *Analysis and Management of Uncertainty*. Elsevier, New York (1992)
- [R7.5] Basu, K.: Fuzzy Revealed Preference Theory. *Jour. of Econ. Theory* 32, 212–227 (1984)
- [R7.6] Bhattacharya, U., et al.: Fuzzy Multi-criteria Facility Location Problem. *Fuzzy Sets and Systems* 51(3), 277–287 (1997)
- [R7.7] Billot, A.: *Economic Theory of Fuzzy Equilibria: An Axiomatic Analysis*. Springer, New York (1992)
- [R7.8] Blin, J.M., et al.: Fuzzy Sets and Social Choice. *Jour. of Cybernetics* 3(4), 28–36 (1973)
- [R7.9] Buckles, B.P., et al.: A Fuzzy Representation of Data for Relational Databases. *Fuzzy Sets and Systems* 7(3), 213–226 (1982)
- [R7.10] Buckley, J.J.: The Fuzzy Mathematics of Finance. *Fuzzy Sets and Systems* 21(3), 257–273 (1987)
- [R7.11] Buckley, J.J.: Solving Fuzzy Equations in Economics and Finance. *Fuzzy Sets and Systems* 48(3), 289–296 (1992)
- [R7.12] Buckley, J.J., et al.: The Utility of Information and Risk-taking Fuzzy Expert Systems. *Intern. Jour. of Intelligent Systems* 3(2), 17–197 (1988)
- [R7.13] Buckley, J.J.: Portfolio Analysis Using Possibility Distributions. In: Sanchez, E., et al. (eds.) *Approximate Reasoning in Intelligent Systems, Decision and Control*, pp. 69–76. Pergamon Press, Oxford (1987)
- [R7.14] Buckley, J.J.: Fuzzy Input-Output Analysis. *European Jour. of Operations Research* 30, 56–60 (1989)
- [R7.15] Buckley, J.J.: Fuzzy PERT. In: Evans, G.W., et al. (eds.) *Applications of Fuzzy Sets Methodologies in Engineering*, pp. 103–114. Elsevier, Amsterdam (1989)
- [R7.16] Butnariu, D.D.: Fuzzy Games: A Description of the Concept. *Fuzzy Sets and Systems* 1, 181–192 (1978)
- [R7.17] Butnariu, D.: Stability and Shapely Value for a n-Persons Fuzzy Game. *Fuzzy Sets and Systems* 4(1), 63–72 (1980)
- [R7.18] Calzi, M.L.: Towards a General Setting for the Fuzzy Mathematics of Finance. *Fuzzy Sets and Systems* 35, 265–280 (1990)
- [R7.19] Cao, B.: Input-Output Mathematical Model with T-Fuzzy Data. *Fuzzy Sets and Systems* 59(1), 15–23 (1993)
- [R7.20] Carlucci, D., et al.: Fuzzy Cluster of Demand With a Regional Service System. In: Gupta, M.M., et al. (eds.) *Fuzzy Automata and Decision Processes*, pp. 379–386. North-Holland, New York (1977)

- 
- [R7.21] Cavallo, R.E. (ed.): *Systems Methodology in Social Science Research*. Kluwer, Boston (1982)
- [R7.22] Chang, P.L., et al.: A Fuzzy Multi-criteria Decision Making Method for Technology Transfer Strategy Selection in Biotechnology. *Fuzzy Sets and Systems* 63(2), 131–139
- [R7.23] Chanas, S., et al.: The Use of Fuzzy Variables in PERT. *Fuzzy Sets and Systems* 5, 11–20 (1981)
- [R7.24] Chang, S.S.L.: On Risk and Decision-making in a Fuzzy Environment. In: Zadeh, L.A., et al. (eds.) *Fuzzy Sets and Their Applications to Cognitive and Decision Processes*, pp. 219–226. Academic Press, New York (1975)
- [R7.25] Chen, G.Q., et al.: Application of Fuzzy Set Theory to Economics. In: Wang, P.P. (ed.) *Advances in Fuzzy Sets, Possibility Theory, and Applications*, pp. 275–305. Plenum Press, New York (1983)
- [R7.26] Cobb, L., et al. (eds.): *Mathematical Frontiers of the Social and Policy Science*. Westview Press, Boulder (1981)
- [R7.27] Czogola, E.: *Probabilistic Sets: Fuzzy and Stochastic Approach to Decision, Control and Recognition Processes*. Rheinland, Koln (1986)
- [R7.28] Dompere, K.K.: The Theory of Fuzzy Decisions, Cost Distribution Principle in Social Choice and Optimal Tax Distribution. *Fuzzy Sets and Systems* 53, 253–274 (1993)
- [R7.29] Dompere, K.K.: A Fuzzy-Decision Theory of Optimal Social Discount Rate: Collective-Choice-Theoretic. *Fuzzy Sets and Systems* 58, 269–301 (1993)
- [R7.30] Dompere, K.K.: The Theory of Social Costs and Costing for Cost-Benefit Analysis in a Fuzzy Decision Space. *Fuzzy Sets and Systems* 76, 1–24 (1995)
- [R7.31] Dompere, K.K.: The Theory of Approximate Prices: Analytical Foundations of Experimental Cost-Benefit Analysis in a Fuzzy-Decision Space. *Fuzzy Sets and Systems* 87, 1–26 (1997)
- [R7.32] Dompere, K.K.: Cost-Benefit Analysis, Benefit Accounting and Fuzzy Decisions I: Theory. *Fuzzy Sets and Systems* 92, 275–287 (1987)
- [R7.33] Dompere, K.K.: Cost-Benefit Analysis, Benefit Accounting and Fuzzy Decisions: Part II, Mental Illness in Hypothetical Community. *Fuzzy Sets and Systems* 100, 101–116 (1998)

- [R7.34] Dompere, K.K.: Cost-Benefit Analysis of Information Technology. In: Kent, A., et al. (eds.) *Encyclopedia of Computer Science and Technology*, vol. 41(supp. 26), pp. 27–44. Marcal Dekker, New York (1999)
- [R7.35] Dompere, K.K.: *Cost-Benefit Analysis and the Theory of Fuzzy Decision: Identification and Measurement Theory*. Springer, New York (2004)
- [R7.36] Dompere, K.K.: *Cost-Benefit Analysis and the Theory of Fuzzy Decision: Fuzzy Value Theory*. Springer, New York (2004)
- [R7.37] Dufresne, D.: The Distribution of Perpetuity, with Application to Risk Theory and Pension Funding. *Scandinavian Actuarial Jour.*, 39–79 (1990)
- [R7.38] Dumitru, V., et al.: Membership Functions, Some Mathematical Programming Models and Production Scheduling. *Fuzzy Sets and Systems* 8(1), 19–33 (1982)
- [R7.39] Esogbue, A.O.: Dynamic Programming, Fuzzy Sets, and the Modeling of R&D Management Constol Systems. *IEEE Transactions, on System, Man and Cybernetics* 13(1), 18–29 (1983)
- [R7.40] Evans, G.W., et al. (eds.): *Applications of Fuzzy Sets Methodologies in Engineering*. Elsevier, Amsterdam (1989)
- [R7.41] Fodor, J.C.: An Axiomatic Approach to Fuzzy Preference Modeling. *Fuzzy Sets and Systems* 52(1), 47–52 (1992)
- [R7.42] Giles, R.: A Utility-valued Logic for Decision Making. *International Jour. of Approximate Reasoning* 2(2), 113–142 (1988)
- [R7.43] Gupta, C.P.: A Note on the Transformation of Possibilistic Information into Probabilistic Information for Investment Decisions. *Fuzzy Sets and Systems* 56(2), 175–182 (1993)
- [R7.44] Ikejima, K., et al.: Risk assessment for gas Pipelines Using Fuzzy Sets. *Civil Engineering Systems* 4(3), 147–152
- [R7.45] Kacprzyk, J., et al.: Long-Term Inventory Policy-making Through Fuzzy Decision - making Models. *Fuzzy Sets and Systems* 8(2), 117–132 (1982)
- [R7.46] Kacprzyk, J., et al.: A Fuzzy Approach to the Stability of Integrated Regional Development. In: Laskers, G.E. (ed.) *Applied Systems and Cybernetics*, vol. VI, pp. 2997–3004. Pergamon Press, New York (1981)
- [R7.47] Kandel, A.: Application of Fuzzy Logic to the Detection of Static Hazards in Combinational Switching Systems. *Intern. Jour. Comp. Inf. Science* 3, 129–139 (1974)

- 
- [R7.48] Karwowski, W., et al.: Fuzzy Concepts in Production Management Research: A Review. *International Journal of Production Research* 24(1), 129–147 (1986)
- [R7.49] Lasek, M.: Hierarchical Structures of Fuzzy Rating in the Analysis of Strategic Goals of Enterprises. *Fuzzy Sets and Systems* 50(2), 127–134 (1992)
- [R7.50] McCain, R.A.: Fuzzy Confidence Intervals in a Theory of Economic Rationality. *Fuzzy Sets and Systems* 23(2), 205–218 (1987)
- [R7.51] Nakamura, K.: Preference Relation on a Set of Fuzzy Utilities as a Basis for Decision Making. *Fuzzy Sets and Systems* 20, 147–162 (1986)
- [R7.52] Nishizaki, I., et al.: A Solution Concept Based on Fuzzy Decisions in n-Person Cooperative Games. *Japanese Jour. of Fuzzy Theory and Systems* 4(2), 183–194 (1992)
- [R7.53] Nojiri, H.: A Model of the Executive's Decision Processes in New Product Development. *Fuzzy Sets and Systems* 7(3), 227–242 (1982)
- [R7.54] Nowakowska, M.: Methodological Problems of Measurement of Fuzzy Concepts in the Social Sciences. *Behavioral Science* 22(2), 107–115 (1977)
- [R7.55] Nurmi, H.: A Fuzzy Solution to a Majority Voting Game. *Fuzzy Sets and Systems* 5, 187–198 (1981)
- [R7.56] Ostaszewski, K.: An Investigation into Possible Application of Fuzzy Sets Method in Actuarial Science. *Society of Actuaries, Schaumburg* (1993)
- [R7.57] Ostermark, R.: Profit Apportionment in Concerns with Mutual Ownership - An Application of Fuzzy Quantities. *Fuzzy Sets and Systems* 26(3), 283–297 (1988)
- [R7.58] Park, K.S.: Fuzzy Set Theoretic Interpretation of Economic Order Quantity. *IEEE Transaction on Systems, Man and Cybernetics* 17(6), 1082–1084 (1987)
- [R7.59] Ponsard, C.: An Application of Fuzzy Sets Theory to the Analysis of Consumer's Spatial Preferences. *Fuzzy Sets and Systems* 5(3), 235–244 (1981)
- [R7.60] Ponsard, C.: Fuzzy Mathematical Models in Economics. *Fuzzy Sets and Systems* 28(3), 273–283 (1988)
- [R7.61] Ponsard, C., et al.: *Fuzzy Economics and Spatial Analysis*. Librairie de L'Universite, Dijon (1986)

- [R7.62] Prade, H.: Using Fuzzy Set Theory in a Scheduling Problem. A Case Study. *Fuzzy Sets and Systems* 2(2), 153–166 (1979)
- [R7.63] Regade, R.K.: Fuzzy Games in the Analysis of Options. *Jour. Cybernetics* 6, 213–221 (1976)
- [R7.64] Schmucker, K.J.: Fuzzy Sets, Natural Language Computation and Risk Analysis. Computer Science Press, Rockville (1984)
- [R7.65] Schott, B., et al.: Fuzzy Uncertainty in Imperfect Competition. *Information Science: Intelligent Systems* 76 (3-4), 339–354 (1994)
- [R7.66] Seo, F., et al.: On Construction of a Cooperative Fuzzy Game in International Fuzzy Decision Environment: A Possibilitic Approach. *Control and Cybernetics* 21(1), 277–294 (1992)
- [R7.67] Shnaider, E., et al.: The Use of Fuzzy Set Theory for Forecasting Corporate Tax Revenues. *Fuzzy Sets and Systems* 31(2), 187–204 (1989)
- [R7.68] Smithson, M.: Applications of Fuzzy Set Concepts to Behavioral Sciences. *Jour. of Mathematical Social Science* 2, 257–274 (1982)
- [R7.69] Smithson, M.: Fuzzy Set Analysis for Behavioral and Social Sciences. Springer, New York (1987)
- [R7.70] Smithson, M.: Fuzzy Set Theory and the Social Sciences: The Scope for Applications. *Fuzzy Sets and Systems* 26(1), 1–21 (1988)
- [R7.71] Spillman, B., et al.: Coalition Analysis with Fuzzy Sets. *Kybernetes* 8, 203–211 (1979)
- [R7.72] Tanaka, H., et al.: A Formulation of Fuzzy Decision Problems and Its Applications to an Investment Problem. *Kybernetics* 5, 25–30 (1976)
- [R7.73] Teng, J.-Y., et al.: Transportation Investment Project Selection Under Fuzzy Multi-objective Programming. *Fuzzy Sets and Systems* 96(3), 259–280 (1998)
- [R7.74] Turksen, I.B.: Approximate Reasoning for Production Planning. *Fuzzy Sets and Systems* 26(1), 23–37 (1988)
- [R7.75] Turksen, I.B., et al.: An Expert System Prototype for Inventory Capacity Planning: An Approximate Reasoning Approach. *Intern. Jour. of Approximate Reasoning* 5(3), 223–252 (1981)
- [R7.76] Wang, P.P., et al. (eds.): Fuzzy Sets: Theory and Applications to Policy Analysis and Information Systems. Plenum Press, New York (1980)
- [R7.77] Wernerfelt, B.: Semifuzzy Games. *Fuzzy Sets and Systems* 19, 21–28 (1986)

- [R7.78] Zadeh, L.A.: Possibility Theory and Soft Data Analysis. In: Cobb, L., et al. (eds.) *Mathematical Frontiers of the Social and Policy Sciences*, pp. 69–129. Westview Press, Boulder (1981)
- [R7.79] Zadeh, L.A.: Fuzzy Systems Theory: A Framework for the Analysis of Humanistic System. In: Cavallo, R.E. (ed.) *Systems Methodology in Social Science Research*, pp. 25–41. Kluwer, Boston (1982)

## **R8 On Fuzzy Logic and Rationality**

- [R8.1] Baldwin, J.F.: A New Approach to Approximate Reasoning Using a Fuzzy Logic. *Fuzzy Sets and Systems* 2(4), 309–325 (1979)
- [R8.2] Baldwin, J.F.: Fuzzy Logic and Fuzzy Reasoning. *Intern. J. Man-Machine Stud.* 11, 465–480 (1979)
- [R8.3] Baldwin, J.F.: Fuzzy Logic and Its Application to Fuzzy Reasoning. In: Gupta, M.M., et al. (eds.) *Advances in Fuzzy Set Theory and Applications*, pp. 96–115. North-Holland, New York (1979)
- [R8.4] Baldwin, J.F., et al.: Fuzzy Relational Inference Language. *Fuzzy Sets and Systems* 14(2), 155–174 (1984)
- [R8.5] Baldsin, J., Pilsworth, B.W.: Axiomatic Approach to Implication For Approximate Reasoning With Fuzzy Logic. *Fuzzy Sets and Systems* 3(2), 193–219 (1980)
- [R8.6] Baldwin, J.F., et al.: The Resolution of Two Paradoxes by Approximate Reasoning Using A Fuzzy Logic. *Synthese* 44, 397–420 (1980)
- [R8.7] Fine, K.: Vagueness, Truth and Logic. *Synthese* 30, 265–300 (1975)
- [R8.8] Fukami, S., et al.: Some Considerations On Fuzzy Conditional Inference. *Fuzzy Sets and Systems* 4(3), 243–273 (1980)
- [R8.9] Gaines, B.R.: Fuzzy Reasoning and the Logic of Uncertainty. In: *Proc. 6th International Symp. of Multiple-Valued Logic*, IEEE 76CH 1111-4C, pp. 179–188 (1976)
- [R8.10] Gaines, B.R.: Foundations of Fuzzy Reasoning. *Inter. Jour. of Man-Machine Studies* 8, 623–668 (1976)
- [R8.11] Gaines, B.R.: Foundations of Fuzzy Reasoning. In: Gupta, M.M., et al. (eds.) *Fuzzy Information and Decision Processes*, pp. 19–75. North-Holland, New York (1982)
- [R8.12] Gaines, B.R.: Precise Past, Fuzzy Future. *International Journal of Man-Machine Stududies* 19(1), 117–134 (1983)

- [R8.13] Gains, B.R.: Fuzzy and Probability Uncertainty Logics. *Information and Control* 38, 154–169 (1978)
- [R8.14] Gains, B.R.: Modeling Practical Reasoning. *Intern. Jour. of Intelligent Systems* 8(1), 51–70 (1993)
- [R8.15] Gaines, B.R.: Logic and Fuzzy Set Theory. *International Jour. of Man-Machine Studies* 8, 313–327 (1976)
- [R8.16] Giles, R.: Lukasiewics Logic and Fuzzy Set Theory. *Intern. J. Man-Machine Stud.* 8, 313–327 (1976)
- [R8.17] Giles, R.: Formal System for Fuzzy Reasoning. *Fuzzy Sets and Systems* 2(3), 233–257 (1979)
- [R8.18] Ginsberg, M.L. (ed.): *Readings in Non-monotonic Reason.* Morgan Kaufmann, Los Altos (1987)
- [R8.19] Goguen, J.A.: The Logic of Inexact Concepts. *Synthese* 19, 325–373 (1969)
- [R8.20] Gottinger, H.W.: Towards a Fuzzy Reasoning in the Behavioral Science. *Cybernetica* 16(2), 113–135 (1973)
- [R8.21] Gottinger, H.W.: Some Basic Issues Connected With Fuzzy Analysis. In: Klaczro, H., Muller, N. (eds.) *Systems Theory in Social Sciences*, pp. 323–325. Birkhauser Verlag, Basel (1976)
- [R8.22] Gottwald, S.: Fuzzy Propositional Logics. *Fuzzy Sets and Systems* 3(2), 181–192 (1980)
- [R8.23] Gupta, M.M., et al. (eds.): *Fuzzy automata and Decision Processes.* North Holland, New York (1977)
- [R8.24] Gupta, M.M., et al. (eds.): *Approximate Reasoning In Decision Analysis.* North Holland, New York (1982)
- [R8.25] Hersh, H.M., et al.: A Fuzzy Set Approach to Modifiers and Vagueness in Natural Language. *J. Experimental* 105, 254–276 (1976)
- [R8.26] Ulrich, H., Klement, E.P.: *Non-Classical Logics and their Applications to Fuzzy Subsets: A Handbook of the Mathematical Foundations of Fuzzy Set Theory.* Kluwer, Boston (1995)
- [R8.27] Kaipov, V.Kh., et al.: Classification in Fuzzy Environments. In: Gupta, M.M., et al. (eds.) *Advances in Fuzzy Set Theory and Applications*, pp. 119–124. North-Holland, New York (1979)
- [R8.28] Kandel, A.: Codes Over Languages. *IEEE Transactions on Systems Man and Cybernetics* 4, 135–138 (1975)
- [R8.29] Kaufman, A.: Progress in Modeling of Human Reasoning of Fuzzy Logic. In: Gupta, M.M., et al. (eds.) *Fuzzy Information and Decision Process*, pp. 11–17. North-Holland, New York (1982)



- 
- [R8.30] Lakoff, G.: Hedges: A Study in Meaning Criteria and the Logic of Fuzzy Concepts. *Jour. Philos. Logic* 2, 458–508 (1973)
- [R8.31] Lasker, G.E. (ed.): *Applied Systems and Cybernetics*, vol. 6. Pergamon Press, New York (1980)
- [R8.32] Lee, E.T., et al.: Some Properties of Fuzzy Logic. *Information and Control* 19, 417–431 (1971)
- [R8.33] Lee, E.T., et al.: Notes On Fuzzy Languages. *Information Science* 1, 421–434 (1969)
- [R8.34] Lee, R.C.T.: Fuzzy Logic and the Resolution Principle. *Jour. of Assoc. Comput. Mach.* 19, 109–119 (1972)
- [R8.35] Lee, R.C.T.: Some Properties of Fuzzy Logic. *Information and Control* 19, 417–431 (1971)
- [R8.36] LeFaivre, R.A.: The Representation of Fuzzy Knowledge. *Jour. of Cybernetics* 4, 57–66 (1974)
- [R8.37] Mitra, S., Pal, S.K.: Logical Operation based Fuzzy MLP for Classification and Rule Generation. *Neural Networks* 7(2), 353–373 (1994)
- [R8.38] Mizumoto, M.: Fuzzy Conditional Inference Under Max-Composition. *Information Sciences* 27(3), 183–207 (1982)
- [R8.39] Mizumoto, M., et al.: Several Methods For Fuzzy Conditional Inference. In: *Proc. of IEEE Conf. on Decision and Control*, Florida, December 12-14, pp. 777–782 (1979)
- [R8.40] Montero, F.J.: Measuring the Rationality of a Fuzzy Preference Relation. *Busefal* 26, 75–83 (1986)
- [R8.41] Morgan, C.G.: Methods for Automated Theorem Proving in Non-Classical Logics. *IEEE Trans. Comput.* C-25, 852–862 (1976)
- [R8.42] Negoita, C.V.: Representation Theorems for Fuzzy Concepts. *Kybernetes* 4, 169–174 (1975)
- [R8.43] Nguyen, H.T., Walker, E.A.: *A First Course In Fuzzy Logic*. CRC Press, Boca Raton (1997)
- [R8.44] Nowakowska, M.: Methodological Problems of Measurements of Fuzzy Concepts in Social Sciences. *Behavioral Sciences* 22(2), 107–115 (1977)
- [R8.45] Pinkava, V.: Fuzzification of Binary and Finite Multivalued Logical Calculi. *Intern. Jour. Man-Machine Stud.* 8, 171–730 (1976)
- [R8.46] Skala, H.J.: *Non-Archimedean Utility Theory*. D. Reidel, Dordrecht (1975)
- [R8.47] Skala, H.J.: On Many-Valued Logics, Fuzzy Sets, Fuzzy Logics and Their Applications. *Fuzzy Sets and Systems* 1(2), 129–149 (1978)

- [R8.48] Sugeno, M., Takagi, T.: Multi-Dimensional Fuzzy Reasoning. *Fuzzy Sets and Systems* 9(3), 313–325 (1983)
- [R8.49] Tamura, S., et al.: Learning of Formal Language. *IEEE Trans. Syst. Man. Cybernetics SMC-3*, 98–102 (1973)
- [R8.50] Tan, S.K., et al.: Fuzzy Inference Relation Based on the Theory of Falling Shadows. *Fuzzy Sets and Systems* 53(2), 179–188 (1993)
- [R8.51] Thornber, K.K.: A Key to Fuzzy Logic Inference. *Intern. Jour. of Approximate Reasoning* 8(2), 105–129 (1993)
- [R8.52] Tong, R.M., et al.: A Critical Assessment of Truth Functional Modification and its Use in Approximate Reasoning. *Fuzzy Sets and Systems* 7(1), 103–108 (1982)
- [R8.53] Van Fraassen, B.C.: Comments: Lakoff's Fuzzy Propositional Logic. In: Hockney, D., et al. (eds.) *Contemporary Research in Philosophical Logic and Linguistic Semantics* Holland, Reild, pp. 273–277 (1975)
- [R8.54] Verma, R.R.: Vagueness and the Principle of the Excluded Middle. *Mind* 79, 66–77 (1970)
- [R8.55] Wiredu, J.E.: Truth as a Logical Constant With an Application to the Principle of the Excluded Middle. *Philos. Quart.* 25, 305–317 (1975)
- [R8.56] Yager, R.R., et al. (eds.): *An Introduction to Fuzzy Logic Applications in Intelligent Systems*. Kluwer, Boston (1992)
- [R8.57] Yan, J., et al.: *Using Fuzzy Logic: Towards Intelligent Systems*. Prentice-Hall, Englewood Cliffs (1994)
- [R8.58] Yang, X.M.: A Note on Convex Fuzzy Sets. *Fuzzy Sets and Systems* 53(1), 117–118 (1993)
- [R8.59] Ying, M.S.: Some Notes on Multidimensional Fuzzy Reasoning. *Cybernetics and Systems* 19(4), 281–293 (1988)
- [R8.60] Zadeh, L.A.: Quantitative Fuzzy Semantics. *Inform. Science* 3, 159–176 (1971)
- [R8.61] Zadeh, L.A.: A Fuzzy Set Interpretation of Linguistic Hedges. *Jour. Cybernetics* 2, 4–34 (1972)
- [R8.62] Zadeh, L.A.: Fuzzy Logic and Its Application to Approximate Reasoning. In: *Information Processing 74, Proc. IFIP Congress*, vol. 74(3), pp. 591–594. North Holland, New York (1974)
- [R8.63] Zadeh, L.A.: The Concept of a Linguistic Variable and Its Application to Approximate Reasoning. In: Fu, K.S., et al. (eds.) *Learning Systems and Intelligent Robots*, pp. 1–10. Plenum Press, New York (1974)

- [R8.64] Zadeh, L.A.: Fuzzy Logic and Approximate Reasoning. Syntheses 30, 407–428 (1975)
- [R8.65] Zadeh, L.A., et al. (eds.): Fuzzy Logic for the Management of Uncertainty. Wiley and Sons, New York (1992)
- [R8.66] Zadeh, L.A., et al. (eds.): Fuzzy Sets and Their Applications to Cognitive and Decision Processes. Academic Press, New York (1974)

## **R9 On Fuzzy Optimization and Decision-Choice Rationality**

- [R9.1] Bose, R.K., Sahani, D.: Fuzzy Mappings and Fixed Point Theorems. Fuzzy Sets and Systems 21, 53–58 (1987)
- [R9.2] Buckley, J.J.: Fuzzy Programming And the Pareto Optimal Set. Fuzzy Set and Systems 10(1), 57–63 (1983)
- [R9.3] Butnariu, D.: Fixed Points for Fuzzy Mappings. Fuzzy Sets and Systems 7, 191–207 (1982)
- [R9.4] Carlsson, G.: Solving Ill-Structured Problems Through Well Structured Fuzzy Programming. In: Brans, J.P. (ed.) Operation Research, vol. 81, pp. 467–477. North-Holland, Amsterdam (1981)
- [R9.5] Carlsson, C.: Tackling an AMDM - Problem with the Help of Some Results From Fuzzy Set Theory. European Journal of Operational Research 10(3), 270–281 (1982)
- [R9.6] Cerny, M.: Fuzzy Approach to Vector Optimization. Intern. Jour. of General Systems 20(1), 23–29
- [R9.7] Chang, C.L.: Interpretation and Execution of Fuzzy Programs. In: Zadeh, L.A., et al. (eds.) Fuzzy Sets and Their Applications to Cognitive and Decision Processes, pp. 191–218. Academic Press, New York (1975)
- [R9.8] Chang, S.K.: On the Execution of Fuzzy Programs Using Finite State Machines. IEEE, Trans. Comp. C-12, 214–253 (1982)
- [R9.9] Chang, S.S.: Fixed Point Theorems for Fuzzy Mappings. Fuzzy Sets and Systems 17, 181–187 (1985)
- [R9.10] Chang, S.S.L.: Fuzzy Dynamic Programming and the Decision Making Process. In: Proc. 3rd Princeton Conference on Information Science and Systems, Princeton, pp. 200–203 (1969)
- [R9.11] Chang, S.Y., et al.: Modeling To Generate Alternatives: A Fuzzy Approach. Fuzzy Sets and Systems 9(2), 137–151 (1983)

- [R9.12] Dubois, D., et al.: Systems of Linear Fuzzy Constraints. *Fuzzy Sets and Systems* 3(1), 37–48 (1980)
- [R9.13] Dubois, D.: An Application of Fuzzy Arithmetic to the Optimization of Industrial Machining Processes. *Mathematical Modelling* 9(6), 461–475 (1987)
- [R9.14] Edwards, W.: The Theory of Decision Making. *Psychological Bulletin* 51, 380–417 (1954)
- [R9.15] Eaves, B.C.: Computing Kakutani Fixed Points. *Journal of Applied Mathematics* 21, 236–244 (1971)
- [R9.16] Feng, Y.J.: A Method Using Fuzzy Mathematics to Solve the Vector Maxim Problem. *Fuzzy Set and Systems* 9(2), 129–136 (1983)
- [R9.17] Hamacher, H., et al.: Sensitivity Analysis in Fuzzy Linear Programming. *Fuzzy Sets and Systems* 1, 269–281 (1978)
- [R9.18] Hannan, E.L.: On the Efficiency of the Product Operator in Fuzzy Programming with Multiple Objectives. *Fuzzy Sets and Systems* 2(3), 259–262 (1979)
- [R9.19] Hannan, E.L.: Linear Programming with Multiple Fuzzy Goals. *Fuzzy Sets and Systems* 6(3), 235–248 (1981)
- [R9.20] Heilpern, S.: Fuzzy Mappings and Fixed Point Theorem. *Journal of Mathematical Analysis and Applications* 83, 566–569 (1981)
- [R9.21] Ignizio, J.P., et al.: Fuzzy Multicriteria Integer Programming via Fuzzy Generalized Networks. *Fuzzy Sets and Systems* 10(3), 261–270 (1983)
- [R9.22] Jarvis, R.A.: Optimization Strategies in Adaptive Control: A Selective Survey. *IEEE Trans. Syst. Man. Cybernetics SMC-5*, 83–94 (1975)
- [R9.23] Jakubowski, R., et al.: Application of Fuzzy Programs to the Design of Machining Technology. *Bulleting of the Polish Academy of Science* 21, 17–22 (1973)
- [R9.24] Kabbara, G.: New Utilization of Fuzzy Optimization Method. In: Gupta, M.M., et al. (eds.) *Approximate Reasoning In Decision Analysis*, North Holland, New York, pp. 239–246. North-Holland, New York (1982)
- [R9.25] Kacprzyk, J., et al. (eds.): *Optimization Models Using Fuzzy Sets and Possibility Theory*. D. Reidel, Boston (1987)
- [R9.26] Kakutani, S.: A Generalization of Brouwer's Fixed Point Theorem. *Duke Mathematical Journal* 8, 416–427 (1941)
- [R9.27] Kaleva, O.: A Note on Fixed Points for Fuzzy Mappings. *Fuzzy Sets and Systems* 15, 99–100 (1985)

- 
- [R9.28] Kandel, A.: On Minimization of Fuzzy Functions. *IEEE Trans. Comp. C-22*, 826–832 (1973)
- [R9.29] Kandel, A.: Comments on Minimization of Fuzzy Functions. *IEEE Trans. Comp. C-22*, 217 (1973)
- [R9.30] Kandel, A.: On the Minimization of Incompletely Specified Fuzzy Functions. *Information, and Control* 26, 141–153 (1974)
- [R9.31] Lai, Y., et al.: *Fuzzy Mathematical Programming*. Springer, New York (1992)
- [R9.32] Leberling, H.: On Finding Compromise Solution in Multicriteria Problems, Using the Fuzzy Min-Operator. *Fuzzy Set and Systems* 6(2), 105–118 (1981)
- [R9.33] Lee, E.S., et al.: Fuzzy Multiple Objective Programming and Compromise Programming with Pareto Optimum. *Fuzzy Sets and Systems* 53(3), 275–288 (1993)
- [R9.34] Lowen, R.: Connex Fuzzy Sets. *Fuzzy Sets and Systems* 3, 291–310 (1980)
- [R9.35] Luhandjula, M.K.: Compensatory Operators in Fuzzy Linear Programming with Multiple Objectives. *Fuzzy Sets and Systems* 8(3), 245–252 (1982)
- [R9.36] Luhandjula, M.K.: Linear Programming Under Randomness and Fuzziness. *Fuzzy Sets and Systems* 10(1), 45–54 (1983)
- [R9.37] Negoita, C.V., et al.: Fuzzy Linear Programming and Tolerances in Planning. *Econ. Group Cybernetic Studies* 1, 3–15 (1976)
- [R9.38] Negoita, C.V., Stefanescu, A.C.: On Fuzzy Optimization. In: Gupta, M.M., et al. (eds.) *Approximate Reasoning In Decision Analysis*, pp. 247–250. North-Holland, New York (1982)
- [R9.39] Negoita, C.V.: The Current Interest in Fuzzy Optimization. *Fuzzy Sets and Systems* 6(3), 261–270 (1981)
- [R9.40] Negoita, C.V., et al.: On Fuzzy Environment in Optimization Problems. In: Rose, J., et al. (eds.) *Modern Trends in Cybernetics and Systems*, pp. 13–24. Springer, Berlin (1977)
- [R9.41] Orlovsky, S.A.: On Programming with Fuzzy Constraint Sets. *Kybernetes* 6, 197–201 (1977)
- [R9.42] Orlovsky, S.A.: On Formulation of General Fuzzy Mathematical Problem. *Fuzzy Sets and Systems* 3, 311–321 (1980)
- [R9.43] Ostasiewicz, W.: A New Approach to Fuzzy Programming. *Fuzzy Sets and Systems* 7(2), 139–152 (1982)

- [R9.44] Pollatschek, M.A.: Hierarchical Systems and Fuzzy-Set Theory. *Kybernetes* 6, 147–151 (1977)
- [R9.45] Ponsard, G.: Partial Spatial Equilibria With Fuzzy Constraints. *Journal of Regional Science* 22(2), 159–175 (1982)
- [R9.46] Prade, M.: Operations Research with Fuzzy Data. In: Want, P.P., et al. (eds.) *Fuzzy Sets*, pp. 155–170. Plenum, New York (1980)
- [R9.47] Ralescu, D.: Optimization in a Fuzzy Environment. In: Gupta, M.M., et al. (eds.) *Advances in Fuzzy Set Theory and Applications*, pp. 77–91. North-Holland, New York (1979)
- [R9.48] Ralescu, D.A.: Orderings, Preferences and Fuzzy Optimization. In: Rose, J. (ed.) *Current Topics in Cybernetics and Systems*. Springer, Berlin (1978)
- [R9.49] Sakawa, M.: *Fuzzy Sets and Interactive Multiobjective Optimization*. Plenum Press, New York (1993)
- [R9.50] Sakawa, M., et al.: Feasibility and Pareto Optimality for Multiobjective Nonlinear Programming Problems with Fuzzy Parameters. *Fuzzy Sets and Systems* 43(#1), 1–15
- [R9.51] Tanaka, K., et al.: Fuzzy Programs and Their Execution. In: Zadeh, L.A., et al. (eds.) *Fuzzy Sets and Their Applications to Cognitive and Decision Processes*, pp. 41–76 (1974)
- [R9.52] Tanaka, K., et al.: Fuzzy Mathematical Programming. *Transactions of SICE*, 109–115 (1973)
- [R9.53] Tanaka, H., et al.: On Fuzzy-Mathematical Programming. *Journal of Cybernetics* 3(4), 37–46 (1974)
- [R9.54] Tanaka, H., et al.: Fuzzy Linear Programming, Based on Fuzzy Functions. *Bulletin of Univ. of Osaka Prefecture, Series A* 29(2), 113–125 (1980)
- [R9.55] Vira, J.: Fuzzy Expectation Values in Multistage Optimization Problems. *Fuzzy Sets and Systems* 6(2), 161–168 (1981)
- [R9.56] Verdegay, J.L.: Fuzzy Mathematical Programming. In: Gupta, M.M., et al. (eds.) *Fuzzy Information and Decision Processes*, pp. 231–238. North-Holland, New York (1982)
- [R9.57] Warren, R.H.: Optimality in Fuzzy Topological Polysystems. *Jour. Math. Anal.* 54, 309–315 (1976)
- [R9.58] Weiss, M.D.: Fixed Points, Separation and Induced Topologies for Fuzzy Sets. *Jour. Math. Anal. and Appln.* 50, 142–150 (1975)
- [R9.59] Wiedey, G., Zimmermann, H.J.: Media Selection and Fuzzy Linear Programming. *Journal Oper. Res. Society* 29, 1071–1084 (1978)

- [R9.60] Wilkinson, J.: Archetypes, Language, Dynamic Programming and Fuzzy Sets. In: Wilkinson, J., et al. (eds.) *The Dynamic Programming of Human Systems*, pp. 44–53. Information Corp., MSS New York (1973)
- [R9.61] Yager, R.R.: Mathematical Programming with Fuzzy Constraints and Preference on the Objective. *Kybernetes* 8, 285–291 (1979)
- [R9.62] Zadeh, L.A.: Outline of a New Approach to the Analysis of Complex Systems and Decision Process. In: Cochrane, J.L., et al. (eds.) *Multiple Criteria Decision Making*. Univ. of South Carolina Press, Columbia (1973); Also in *IEEE Transactions on System, Man and Cybernetics* 1, 28–44
- [R9.63] Zadeh, L.A.: The Role of Fuzzy Logic in the Management of Uncertainty in expert Systems. *Fuzzy Sets and Systems* 11, 199–227 (1983)
- [R9.64] Zimmerman, H.-J.: Description and Optimization of Fuzzy Systems. *Intern. Jour. Gen. Syst.* 2(4), 209–215 (1975)
- [R9.65] Zimmerman, H.-J.: Fuzzy Programming and Linear Programming with Several Objective Functions. *Fuzzy Sets and Systems* 1(1), 45–56 (1978)
- [R9.66] Zimmerman, H.J.: Applications of Fuzzy Set Theory to Mathematical Programming. *Information Science* 36(1), 29–58 (1985)

## **R10 On Fuzzy Mathematics and Optimal Rationality**

- [R10.1] Bandler, W., et al.: Fuzzy Power Sets and Fuzzy Implication Operators. *Fuzzy Sets and Systems* 4(1), 13–30 (1980)
- [R10.2] Banon, G.: Distinction between Several Subsets of Fuzzy Measures. *Fuzzy Sets and Systems* 5(3), 291–305 (1981)
- [R10.3] Bellman, R.E.: Mathematics and Human Sciences. In: Wilkinson, J., et al. (eds.) *The Dynamic Programming of Human Systems*, pp. 11–18. MSS Information Corp., New York (1973)
- [R10.4] Bellman, R.E., Glertz, M.: On the Analytic Formalism of the Theory of Fuzzy Sets. *Information Science* 5, 149–156 (1973)
- [R10.5] Brown, J.G.: A Note On Fuzzy Sets. *Information and Control* 18, 32–39 (1971)
- [R10.6] Butnariu, D.: Fixed Points For Fuzzy Mapping. *Fuzzy Sets and Systems* 7(2), 191–207 (1982)

- [R10.7] Butnariu, D.: Decompositions and Range For Additive Fuzzy Measures. *Fuzzy Sets and Systems* 10(2), 135–155 (1983)
- [R10.8] Cerruti, U.: Graphs and Fuzzy Graphs. In: *Fuzzy Information and Decision Processes*, pp. 123–131. North-Holland, New York (1982)
- [R10.9] Chakraborty, M.K., et al.: Studies in Fuzzy Relations Over Fuzzy Subsets. *Fuzzy Sets and Systems* 9(1), 79–89 (1983)
- [R10.10] Chang, C.L.: Fuzzy Topological Spaces. *J. Math. Anal. and Applications* 24, 182–190 (1968)
- [R10.11] Chang, S.S.L.: Fuzzy Mathematics, Man and His Environment. *IEEE Transactions on Systems, Man and Cybernetics SMC-2*, 92–93 (1972)
- [R10.12] Chang, S.S.L., et al.: On Fuzzy Mathematics and Control. *IEEE Transactions, System, Man and Cybernetics SMC-2*, 30–34 (1972)
- [R10.13] Chang, S.S.: Fixed Point Theorems for Fuzzy Mappings. *Fuzzy Sets and Systems* 17, 181–187 (1985)
- [R10.14] Chapin, E.W.: An Axiomatization of the Set Theory of Zadeh. *Notices, American Math. Society*, 687-02-4 754 (1971)
- [R10.15] Chaudhury, A.K., Das, P.: Some Results on Fuzzy Topology on Fuzzy Sets. *Fuzzy Sets and Systems* 56, 331–336 (1993)
- [R10.16] Cheng-Zhong, L.: Generalized Inverses of Fuzzy Matrix. In: Gupta, M.M., et al. (eds.) *Approximate Reasoning In Decision Analysis*, pp. 57–60. North-Holland, New York (1982)
- [R10.17] Chitra, H., Subrahmanyam, P.V.: Fuzzy Sets and Fixed Points. *Jour. of Mathematical Analysis and Application* 124, 584–590 (1987)
- [R10.18] Cohn, D.L.: *Measure Theory*. Birkhäuser, Boston (1980)
- [R10.19] Cohen, P.J., Hirsch, R.: Non-Cantorian Set Theory. *Scientific America*, 101–116 (December 1967)
- [R10.20] Czogala, J., et al.: Fuzzy Relation Equations On a Finite Set. *Fuzzy Sets and Systems* 7(1), 89–101 (1982)
- [R10.21] Das, P.: Fuzzy Topology on Fuzzy Sets: Product Fuzzy Topology and Fuzzy Topological Groups. *Fuzzy Sets and Systems* 100, 367–372 (1998)
- [R10.22] DiNola, A., et al. (eds.) *The Mathematics of Fuzzy Systems*. Verlag TUV Rheinland, Koln (1986)
- [R10.23] DiNola, A., et al.: On Some Chains of Fuzzy Sets. *Fuzzy Sets and Systems* 4(2), 185–191 (1980)



- 
- [R10.24] Dombi, J.: A General Class of Fuzzy Operators, the DeMorgan Class of Fuzzy Operators and Fuzzy Measures Induced by Fuzzy Operators. *Fuzzy Sets and Systems* 8(2), 149–163 (1982)
- [R10.25] Dubois, D., Prade, H.: Towards Fuzzy Differential Calculus, Part I: Integration of Fuzzy Mappings. *Fuzzy Sets and Systems* 8(1), 1–17 (1982)
- [R10.26] Dubois, D., Prade, H.: Towards Fuzzy Differential Calculus, Part 2: Integration On Fuzzy Intervals. *Fuzzy Sets and Systems* 8(2), 105–116 (1982)
- [R10.27] Dubois, D., Prade, H.: Towards Fuzzy Differential Calculus, Part 3: Differentiation. *Fuzzy Sets and Systems* 8(3), 225–233 (1982)
- [R10.28] Dubois, D., Prade, H.: *Fuzzy Sets and Systems*. Academic Press, New York (1980)
- [R10.29] Dubois: Fuzzy Real Algebra: Some Results. *Fuzzy Sets and Systems* 2(4), 327–348 (1979)
- [R10.30] Dubois, D., Prade, H.: Gradual Inference rules in approximate reasoning. *Information Sciences* 61(1-2), 103–122 (1992)
- [R10.31] Dubois, D., Prade, H.: On the combination of evidence in various mathematical frameworks. In: Flamm, J., Luisi, T. (eds.) *Reliability Data Collection and Analysis*, pp. 213–241. Kluwer, Boston (1992)
- [R10.32] Dubois, D., Prade, H. (eds.): *Readings in Fuzzy Sets for Intelligent Systems*. Morgan Kaufmann, San Mateo (1993)
- [R10.33] Dubois, D., Prade, H.: Fuzzy sets and probability: Misunderstanding, bridges and gaps. In: *Proc. Second IEEE Intern. Conf. on Fuzzy Systems*, pp. 1059–1068. San Francisco (1993)
- [R10.34] Dubois, D., Prade, H.: A survey of belief revision and updating rules in various uncertainty models. *Intern. J. of Intelligent Systems* 9(1), 61–100 (1994)
- [R10.35] Erceg, M.A.: Functions, Equivalence Relations, Quotient Spaces and Subsets in Fuzzy Set Theory. *Fuzzy Sets and Systems* 3(1), 79–92 (1980)
- [R10.36] Feng, Y.-J.: A Method Using Fuzzy Mathematics to Solve the Vectormaximum Problem. *Fuzzy Sets and Systems* 9(2), 129–136 (1983)
- [R10.37] Filev, D.P., et al.: A Generalized Defuzzification Method via Bag Distributions. *Intern. Jour. of Intelligent Systems* 6(7), 687–697 (1991)

- [R10.38] Foster, D.H.: Fuzzy Topological Groups. *Journal of Math. Analysis and Applications* 67, 549–564 (1979)
- [R10.39] Goetschel Jr., R., et al.: Topological Properties of Fuzzy Number. *Fuzzy Sets and Systems* 10(1), 87–99 (1983)
- [R10.40] Goguen, J.A.: Mathematical Representation of Hierarchically Organized System. In: Attinger, E.O. (ed.) *Global System Dynamics*, pp. 111–129. S. Karger, Berlin (1970)
- [R10.41] Goodman, I.R.: Fuzzy Sets As Random Level Sets: Implications and Extensions of the Basic Results. In: Lasker, G.E. (ed.) *Applied Systems and Cybernetics*, vol. VI, pp. 2756–2766. Pergamon Press, New York (1981)
- [R10.42] Goodman, I.R.: Fuzzy Sets As Equivalence Classes of Random Sets. In: Yager, R.R. (ed.) *Fuzzy Set and Possibility Theory: Recent Development*, pp. 327–343. Pergamon Press, New York (1992)
- [R10.43] Gupta, M.M., et al. (eds.): *Fuzzy Automata and Decision Processes*. North-Holland, New York (1977)
- [R10.44] Gupta, M.M., Sanchez, E. (eds.): *Fuzzy Information and Decision Processes*. North-Holland, New York (1982)
- [R10.45] Higashi, M., Klir, G.J.: On measure of fuzziness and fuzzy complements. *Intern. J. of General Systems* 8(3), 169–180 (1982)
- [R10.46] Higashi, M., Klir, G.J.: Measures of uncertainty and information based on possibility distributions. *International Journal of General Systems* 9(1), 43–58 (1983)
- [R10.47] Higashi, M., Klir, G.J.: On the notion of distance representing information closeness: Possibility and probability distributions. *Intern. J. of General Systems* 9(2), 103–115 (1983)
- [R10.48] Higashi, M., Klir, G.J.: Resolution of finite fuzzy relation equations. *Fuzzy Sets and Systems* 13(1), 65–82 (1984)
- [R10.49] Higashi, M., Klir, G.J.: Identification of fuzzy relation systems. *IEEE Trans. on Systems, Man, and Cybernetics* 14(2), 349–355 (1984)
- [R10.50] Ulrich, H.: A Mathematical Theory of Uncertainty. In: Yager, R.R. (ed.) *Fuzzy Set and Possibility Theory: Recent Developments*, pp. 344–355. Pergamon Press, New York (1982)
- [R10.51] Jin-wen, Z.: A Unified Treatment of Fuzzy Set Theory and Boolean Valued Set theory: Fuzzy Set Structures and Normal Fuzzy Set Structures. *Jour. Math. Anal. and Applications* 76(1), 197–301 (1980)

- 
- [R10.52] Kandel, A.: Fuzzy Mathematical Techniques with Applications. Addison-Wesley, Reading (1986)
- [R10.53] Kandel, A., Byatt, W.J.: Fuzzy Processes. Fuzzy Sets and Systems 4(2), 117–152 (1980)
- [R10.54] Kaufmann, A., Gupta, M.M.: Introduction to fuzzy arithmetic: Theory and applications. Van Nostrand Reinhold, New York (1991)
- [R10.55] Kaufmann, A.: Introduction to the Theory of Fuzzy Subsets, vol. 1. Academic Press, New York (1975)
- [R10.56] Kaufmann, A.: Theory of Fuzzy Sets. Merson Press, Paris (1972)
- [R10.57] Kaufmann, A., et al.: Fuzzy Mathematical Models in Engineering and Management Science. North-Holland, New York (1988)
- [R10.58] Kim, K.H., et al.: Generalized Fuzzy Matrices. Fuzzy Sets and Systems 4(3), 293–315 (1980)
- [R10.59] Klement, E.P.: Fuzzy  $\sigma$  – Algebras and Fuzzy Measurable Functions. Fuzzy Sets and Systems 4, 83–93 (1980)
- [R10.60] Klement, E.P.: Characterization of Finite Fuzzy Measures Using Markoff-kernels. Journal of Math. Analysis and Applications 75, 330–339 (1980)
- [R10.61] Klement, E.P.: Construction of Fuzzy  $\sigma$  – Algebras Using Triangular Norms. Journal of Math. Analysis and Applications 85, 543–565 (1982)
- [R10.62] Klement, E.P., Schwyhla, W.: Correspondence Between Fuzzy Measures and Classical Measures. Fuzzy Sets and Systems 7(1), 57–70 (1982)
- [R10.63] Klir, G., Yuan, B.: Fuzzy Sets and Fuzzy Logic. Prentice Hall, Upper Saddle River (1995)
- [R10.64] Kokawa, M., et al.: Fuzzy-Theoretical Dimensionality Reduction Method of Multi-Dimensional Quality. In: Gupta, M.M., Sanchez, E. (eds.) Fuzzy Information and Decision Processes, pp. 235–250. North-Holland, New York (1982)
- [R10.65] Kramosil, I., et al.: Fuzzy Metrics and Statistical Metric Spaces. Kybernetika 11, 336–344 (1975)
- [R10.66] Kruse, R.: On the Construction of Fuzzy Measures. Fuzzy Sets and Systems 8(3), 323–327 (1982)
- [R10.67] Kruse, R., et al.: Foundations of Fuzzy Systems. John Wiley and Sons, New York (1994)
- [R10.68] Lasker, G.E. (ed.): Applied Systems and Cybernetics. Fuzzy Sets and Systems, vol. VI. Pergamon Press, New York (1981)

- [R10.69] Lake, L.: Fuzzy Sets, Multisets and Functions I. *London Math. Soc.* 12(2), 323–326 (1976)
- [R10.70] Lientz, B.P.: On Time Dependent Fuzzy Sets. *Inform. Science* 4, 367–376 (1972)
- [R10.70a] Lowen, R.: Fuzzy Uniform Spaces. *Jour. Math. Anal. Appl.* 82(2), 367–376 (1981)
- [R10.71] Lowen, R.: On the Existence of Natural Non-Topological Fuzzy Topological Space. Haldermann Verlag, Berlin (1986)
- [R10.72] Martin, H.W.: Weakly Induced Fuzzy Topological Spaces. *Jour. Math. Anal. and Application* 78, 634–639 (1980)
- [R10.73] Michalek, J.: Fuzzy Topologies. *Kybernetika* 11, 345–354 (1975)
- [R10.74] Mizumoto, M., Tanaka, K.: Some Properties of Fuzzy Numbers. In: Gupta, M.M., et al. (eds.) *Advances in Fuzzy Sets Theory and Applications*, pp. 153–164. North-Holland, Amsterdam (1979)
- [R10.75] Negoita, C.V., et al.: *Applications of Fuzzy Sets to Systems Analysis*. Wiley and Sons, New York (1975)
- [R10.76] Negoita, C.V.: Representation Theorems For Fuzzy Concepts. *Kybernetes* 4, 169–174 (1975)
- [R10.77] Negoita, C.V., et al.: On the State Equation of Fuzzy Systems. *Kybernetes* 4, 231–241 (1975)
- [R10.78] Negoita, C.V.: Fuzzy Sets in Topoi. *Fuzzy Sets and Systems* 8(1), 93–99 (1982)
- [R10.79] Netto, A.B.: Fuzzy Classes. *Notices, American Mathematical Society* 68T-H28, 945 (1968)
- [R10.80] Nguyen, H.T.: Possibility Measures and Related Topics. In: Gupta, M.M., et al. (eds.) *Approximate Reasoning In Decision Analysis*, pp. 197–202. North-Holland, New York (1982)
- [R10.81] Nowakowska, M.: Some Problems in the Foundations of Fuzzy Set Theory. In: Gupta, M.M., et al. (eds.) *Approximate Reasoning In Decision Analysis*, pp. 349–360. North Holland, New York (1982)
- [R10.82] Ovchinnikov, S.V.: Structure of Fuzzy Binary Relations. *Fuzzy Sets and Systems* 6(2), 169–195 (1981)
- [R10.83] Pedrycz, W.: Fuzzy Relational Equations with Generalized Connectives and Their Applications. *Fuzzy Sets and Systems* 10(2), 185–201 (1983)
- [R10.84] Raha, S., et al.: Analogy Between Approximate Reasoning and the Method of Interpolation. *Fuzzy Sets and Systems* 51(3), 259–266 (1992)

- 
- [R10.85] Ralescu, D.: Toward a General Theory of Fuzzy Variables. *Jour. of Math. Analysis and Applications* 86(1), 176–193 (1982)
- [R10.86] Rao, M.B., et al.: Some Comments On Fuzzy Variables. *Fuzzy Sets and Systems* 6(2), 285–292 (1981)
- [R10.87] Rodabaugh, S.E.: Fuzzy Arithmetic and Fuzzy Topology. In: Lasker, G.E. (ed.) *Applied Systems and Cybernetics. Fuzzy Sets and Systems*, vol. VI, pp. 2803–2807. Pergamon Press, New York (1981)
- [R10.88] Rodabaugh, S., et al. (eds.): *Application of Category Theory to Fuzzy Subsets*. Kluwer, Boston (1992)
- [R10.89] Roubens, M., et al.: Linear Fuzzy Graphs. *Fuzzy Sets and Systems* 10(1), 798–806 (1983)
- [R10.90] Rosenfeld, A.: Fuzzy Groups. *Jour. Math. Anal. Appln.* 35, 512–517 (1971)
- [R10.91] Rosenfeld, A.: Fuzzy Graphs. In: Zadeh, L.A., et al. (eds.) *Fuzzy Sets and Their Applications to Cognitive and Decision Processes*, pp. 77–95. Academic Press, New York (1974)
- [R10.92] Rubin, P.A.: A Note on the Geometry of Reciprocal Fuzzy Relations. *Fuzzy Sets and Systems* 7(3), 307–309 (1982)
- [R10.93] Ruspini, E.H.: Recent Developments In Mathematical Classification Using Fuzzy Sets. In: Lasker, G.E. (ed.) *Applied Systems and Cybernetics. Fuzzy Sets and Systems*, vol. VI, pp. 2785–2790. Pergamon Press, New York (1981)
- [R10.94] Sanchez, E.: Resolution of Composite Fuzzy Relation Equations. *Information and Control* 3, 39–47 (1976)
- [R10.95] Santos, E.S.: Maximin, Minimax and Composite Sequential Machines. *Jour. Math. Anal. and Appln.* 24, 246–259 (1968)
- [R10.96] Santos, E.S.: Maximin Sequential Chains. *Jour. of Math. Anal. and Appln.* 26, 28–38 (1969)
- [R10.97] Santos, E.S.: Fuzzy Algorithms. *Inform. and Control* 17, 326–339 (1970)
- [R10.98] Sarkar, M.: On Fuzzy Topological Spaces. *Jour. Math. Anal. Appln.* 79, 384–394 (1981)
- [R10.99] Skala, H., et al. (eds.): *Aspects of Vagueness*. D. Reidel, Boston (1984)
- [R10.100] Slowinski, R., Teghem, J. (eds.): *Stochastic versus Fuzzy Approaches to Multiobjective Mathematical Programming Under Uncertainty*. Kluwer, Dordrecht (1990)

- [R10.101] Stein, N.E., Talaki, K.: Convex Fuzzy Random Variables. *Fuzzy Sets and Systems* 6(3), 271–284 (1981)
- [R10.102] Sugeno, M.: Inverse Operation of Fuzzy Integrals and Conditional Fuzzy Measures. *Transactions SICE* 11, 709–714 (1975)
- [R10.103] Taylor, J.G. (ed.): *Mathematical Approaches to Neural Networks*. North-Holland, New York
- [R10.104] Wright, C.: On the Coherence of Vague Predicates. *Synthese* 3, 325–365 (1975)
- [R10.105] Yager, R.R., Filver, D.P.: *Essentials of Fuzzy Modeling and Control*. John Wiley and Sons, New York (1994)
- [R10.106] Perano, T., et al.: *Fuzzy Systems Theory and its Applications*. Academic Press, New York (1992)
- [R10.107] Terano, T., et al.: *Applied Fuzzy Systems*. AP Professional, New York (1994)
- [R10.108] Triantaphyllon, E., et al.: The Problem of Determining Membership Values in Fuzzy Sets in Real World Situations. In: Brown, D.E., et al. (eds.) *Operations Research and Artificial Intelligence: The Integration of Problem-solving Strategies*, pp. 197–214. Kluwer, Boston (1990)
- [R10.109] Tsichritzis, D.: Participation Measures. *Jour. Math. Anal. and Appln.* 36, 60–72 (1971)
- [R10.110] Tsichritzis, D.: Approximation and Complexity of Functions on the Integers. *Inform. Science* 4, 70–86 (1971)
- [R10.111] Turksens, I.B.: Four Methods of Approximate Reasoning with Interval-Valued Fuzzy Sets. *Intern. Journ. of Approximate Reasoning* 3(2), 121–142 (1989)
- [R10.112] Turksen, I.B.: Measurement of Membership Functions and Their Acquisition. *Fuzzy Sets and Systems* 40(1), 5–38 (1991)
- [R10.113] Verdegay, J., et al.: *The Interface Between Artificial Intelligence and Operations Research in Fuzzy Environment*. TUV Rheinland, Koln (1989)
- [R10.114] Wang, L.X.: *Adaptive Fuzzy Sets and Control: Design and Stability Analysis*. Prentice-Hall, Englewood Cliffs (1994)
- [R10.115] Wang, P.P. (ed.): *Advances in Fuzzy Sets, Possibility Theory, and Applications*. Plenum Press, New York (1983)
- [R10.116] Wang, P.P. (ed.): *Advances in Fuzzy Theory and Technology*, vol. 1. Bookwright Press, Durham (1992)
- [R10.117] Wang, Z., Klir, G.: *Fuzzy Measure Theory*. Plenum Press, New York (1992)

- 
- [R10.118] Wang, P.Z., et al. (eds.): *Between Mind and Computer: Fuzzy Science and Engineering*. World Scientific Press, Singapore (1993)
- [R10.119] Wang, P.Z.: Contactability and Fuzzy Variables. *Fuzzy Sets and Systems* 8(1), 81–92 (1982)
- [R10.120] Wang, S.: Generating Fuzzy Membership Functions: A Monotonic Neural Network Model. *Fuzzy Sets and Systems* 61(1), 71–82 (1994)
- [R10.121] Whalen, T., et al.: Usuality, Regularity, and Fuzzy Set Logic. *Intern. Jour. of Approximate Reasoning* 6(4), 481–504 (1992)
- [R10.122] Wierzchon, S.T.: An Algorithm for Identification of Fuzzy Measure. *Fuzzy Sets and Systems* 9(1), 69–78 (1983)
- [R10.123] Windeknecht, T.G.: *General Dynamic Process*. Academic Press, New York (1971)
- [R10.124] Wong, C.K.: Fuzzy Topology: Product and Quotient Theorems. *Journal of Math. Analysis and Applications* 45, 512–521 (1974)
- [R10.125] Wong, C.K.: Fuzzy Points and Local Properties of Fuzzy Topology. *Jour. Math. Anal. and Appln.* 46, 316–328 (1987)
- [R10.126] Wong, C.K.: Fuzzy Topology. In: Zadeh, L.A., et al. (eds.) *Fuzzy Sets and Their Applications to Cognitive and Decision Processes*, pp. 171–190. Academic Press, New York (1974)
- [R10.127] Wong, C.K.: Categories of Fuzzy Sets and Fuzzy Topological Spaces. *Jour. Math. Anal. and Appln.* 53, 704–714 (1976)
- [R10.128] Wygralak, M.: Fuzzy Inclusion and Fuzzy Equality of two Fuzzy Subsets. *Fuzzy Sets and Systems* 10(2), 157–168 (1983)
- [R10.129] Yager, R.R.: On the Lack of Inverses in Fuzzy Arithmetic. *Fuzzy Sets and Systems* 4(1), 73–82 (1980)
- [R10.130] Yager, R.R. (ed.): *Fuzzy Set and Possibility Theory: Recent Development*. Pergamon Press, New York (1992)
- [R10.131] Yager, R.R.: Fuzzy Subsets with Uncertain Membership Grades. *IEEE Transactions on Systems, Man and Cybernetics* 14(2), 271–275 (1984)
- [R10.132] Yager, R.R., et al.: *Essentials of Fuzzy Modeling and Control*. John Wiley, New York (1994)
- [R10.133] Yager, R.R., et al. (eds.): *Fuzzy Sets, Neural Networks, and Soft Computing*. Nostrand Reinhold, New York (1994)
- [R10.134] Yager, R.R.: On the Theory of Fuzzy Bags. *Intern. Jour. of General Systems* 13(1), 23–37 (1986)

- [R10.135] Yager, R.R.: Cardinality of Fuzzy Sets via Bags. *Mathematical Modelling* 9(6), 441–446 (1987)
- [R10.136] Zadeh, L.A.: A Computational Theory of Decompositions. *Intern. Jour. of Intelligent Systems* 2(1), 39–63 (1987)
- [R10.137] Zadeh, L.A.: The Birth and Evolution of Fuzzy Logic. *Intern. Jour. of General Systems* 17(2-3), 95–105 (1990)
- [R10.138] Zadeh, L.A., et al.: *Fuzzy Logic for the Management of Uncertainty*. John Wiley, New York (1992)
- [R10.139] Zimmerman, H.J.: *Fuzzy Set Theory and Its Applications*. Kluwer, Boston (1985)

## **R11      On Fuzzy Probability, Fuzzy Random Variable and Random Fuzzy Variable**

- [R11.1] Bandemer, H.: From Fuzzy Data to Functional Relations. *Mathematical Modelling* 6, 419–426 (1987)
- [R11.2] Bandemer, H., et al.: *Fuzzy Data Analysis*. Kluwer, Boston (1992)
- [R11.3] Kruse, R., et al.: *Statistics with Vague Data*. D. Reidel Pub. Co., Dordrecht (1987)
- [R11.4] Chang, R.L.P., et al.: Applications of Fuzzy Sets in Curve Fitting. *Fuzzy Sets and Systems* 2(1), 67–74
- [R11.5] Chen, S.Q.: Analysis for Multiple Fuzzy Regression. *Fuzzy Sets and Systems* 25(1), 56–65
- [R11.6] Celmins, A.: Multidimensional Least-Squares Fitting of Fuzzy Model. *Mathematical Modelling* 9(9), 669–690
- [R11.7] El Rayes, A.B., et al.: Generalized Possibility Measures. *Information Sciences* 79, 201–222 (1994)
- [R11.8] Dumitrescu, D.: Entropy of a Fuzzy Process. *Fuzzy Sets and Systems* 55(2), 169–177 (1993)
- [R11.9] Delgado, M., et al.: On the Concept of Possibility-Probability Consistency. *Fuzzy Sets and Systems* 21(3), 311–318 (1987)
- [R11.10] Devi, B.B., et al.: Estimation of Fuzzy Memberships from Histograms. *Information Sciences* 35(1), 43–59 (1985)
- [R11.11] Diamond, P.: Fuzzy Least Squares. *Information Sciences* 46(3), 141–157 (1988)
- [R11.12] Dubois, D., et al.: Fuzzy Sets, Probability and Measurement. *European Jour. of Operational Research* 40(2), 135–154 (1989)



- 
- [R11.13] Fruhwirth-Schnatter, S.: On Statistical Inference for Fuzzy Data with Applications to Descriptive Statistics. *Fuzzy Sets and Systems* 50(2), 143–165 (1992)
- [R11.14] Fruhwirth-Schnatter, S.: On Fuzzy Bayesian Inference. *Fuzzy Sets and Systems* 60(1), 41–58 (1993)
- [R11.15] Gaines, B.R.: Fuzzy and Probability Uncertainty logics. *Information and Control* 38(2), 154–169 (1978)
- [R11.16] Geer, J.F., et al.: Discord in Possibility Theory. *International Jour. of General Systems* 19, 119–132 (1991)
- [R11.17] Geer, J.F., et al.: A Mathematical Analysis of Information-Processing Transformation Between Probabilistic and Possibilistic Formulation of Uncertainty. *International Jour. of General Systems* 20(2), 114–176 (1992)
- [R11.18] Goodman, I.R., et al.: *Uncertainty Models for Knowledge Based Systems*. North-Holland, New York (1985)
- [R11.19] Grabish, M., et al.: *Fundamentals of Uncertainty Calculi with Application to Fuzzy Systems*. Kluwer, Boston (1994)
- [R11.20] Guan, J.W., et al.: *Evidence Theory and Its Applications*, vol. 1. North-Holland, New York (1991)
- [R11.21] Guan, J.W., et al.: *Evidence Theory and Its Applications*, vol. 2. North-Holland, New York (1992)
- [R11.22] Hisdal, E.: Are Grades of Membership Probabilities? *Fuzzy Sets and Systems* 25(3), 349–356 (1988)
- [R11.23] Ulrich, H.: A Mathematical Theory of Uncertainty. In: Yager, R.R. (ed.) *Fuzzy Set and Possibility Theory: Recent Developments*, pp. 344–355. Pergamon, New York (1982)
- [R11.24] Kacprzyk, J., Fedrizzi, M. (eds.): *Combining Fuzzy Imprecision with Probabilistic Uncertainty in Decision Making*. Plenum Press, New York (1992)
- [R11.25] Kacprzyk, J., et al.: *Combining Fuzzy Imprecision with Probabilistic Uncertainty in Decision Making*. Springer, New York (1988)
- [R11.26] Klir, G.J.: Where Do we Stand on Measures of Uncertainty, Ambiguity, Fuzziness and the like? *Fuzzy Sets and Systems* 24(2), 141–160 (1987)
- [R11.27] Klir, G.J., et al.: *Fuzzy Sets, Uncertainty and Information*. Prentice Hall, Englewood Cliffs (1988)

- [R11.28] Klir, G.J., et al.: Probability-Possibility Transformations: A Comparison. *Intern. Jour. of General Systems* 21(3), 291–310 (1992)
- [R11.29] Kosko, B.: Fuzziness vs Probability. *Intern. Jour. of General Systems* 17(1-3), 211–240 (1990)
- [R11.30] Manton, K.G., et al.: *Statistical Applications Using Fuzzy Sets*. John Wiley, New York (1994)
- [R11.31] Meier, W., et al.: *Fuzzy Data Analysis: Methods and Industrial Applications*. *Fuzzy Sets and Systems* 61(1), 19–28 (1994)
- [R11.32] Nakamura, A., et al.: A logic for Fuzzy Data Analysis. *Fuzzy Sets and Systems* 39(2), 127–132 (1991)
- [R11.33] Negoita, C.V., et al.: *Simulation, Knowledge-Based Computing and Fuzzy Statistics*. Van Nostrand Reinhold, New York (1987)
- [R11.34] Nguyen, H.T.: Random Sets and Belief Functions. *Jour. of Math. Analysis and Applications* 65(3), 531–542 (1978)
- [R11.35] Prade, H., et al.: Representation and Combination of Uncertainty with belief Functions and Possibility Measures. *Comput. Intell.* 4, 244–264 (1988)
- [R11.36] Puri, M.L., et al.: Fuzzy Random Variables. *Jour. of Mathematical Analysis and Applications* 114(2), 409–422 (1986)
- [R11.37] Rao, N.B., Rashed, A.: Some Comments on Fuzzy Random Variables. *Fuzzy Sets and Systems* 6(3), 285–292 (1981)
- [R11.38] Sakawa, M., et al.: Multiobjective Fuzzy linear Regression Analysis for Fuzzy Input-Output Data. *Fuzzy Sets and Systems* 47(2), 173–182 (1992)
- [R11.39] Savic, D.A., et al.: Evaluation of Fuzzy Linear Regression Models. *Fuzzy Sets and Systems* 39(1), 51–64 (1991)
- [R11.40] Schneider, M., et al.: Properties of the Fuzzy Expected Values and the Fuzzy Expected Interval. *Fuzzy Sets and Systems* 26(3), 373–385 (1988)
- [R11.41] Slowinski, R., Teghem, J. (eds.): *Stochastic versus Fuzzy Approaches to Multiobjective Mathematical Programming Under Uncertainty*. Kluwer, Dordrecht (1990)
- [R11.42] Stein, N.E., Talaki, K.: Convex Fuzzy Random Variables. *Fuzzy Sets and Systems* 6(3), 271–284 (1981)
- [R11.43] Sudkamp, T.: On Probability-Possibility Transformations. *Fuzzy Sets and Systems* 51(1), 73–82 (1992)
- [R11.44] Tanaka, H.: Fuzzy Data Analysis by Possibilistic Linear Models. *Fuzzy Sets and Systems* 24(3), 363–375 (1987)

- [R11.45] Tanaka, H., et al.: Possibilistic Linear Regression Analysis for Fuzzy Data. *European Jour. of Operational Research* 40(3), 389–396 (1989)
- [R11.46] Walley, P.: *Statistical Reasoning with Imprecise Probabilities*. Chapman and Hall, London (1991)
- [R11.47] Wang, G.Y., et al.: The Theory of Fuzzy Stochastic Processes. *Fuzzy Sets and Systems* 51(2), 161–178 (1992)
- [R11.48] Wang, X., et al.: Fuzzy Linear Regression Analysis of Fuzzy Valued Variable. *Fuzzy Sets and Systems* 36(1), 19
- [R11.49] Zadeh, L.A.: Probability Measure of Fuzzy Event. *Jour. of Math Analysis and Applications* 23, 421–427 (1968)

## **R12 On Rationality and General Decision-Choice Processes**

- [R12.1] Bell, D.: Regret in Decision Making Under Uncertainty. *Operation Research* 30, 961–981 (1982)
- [R12.2] Bicchieri, C.: *Rationality and Coordination*. Cambridge University Press, Cambridge (1993)
- [R12.3] Boulding, K.E.: *A New Theory of Social Evolution*. Ca. Pub., Beverly Hills (1978)
- [R12.4] Davidson, D., Suppes, P., Siegel, S.: *Decision Making: An Experimental Approach*. Stanford University Press, Stanford Ca. (1957)
- [R12.5] Dawes, R.: *Rational Choice in an Uncertain World*, Fort Worth, Texas, Harcourt Brace (1988)
- [R12.6] Edwards, W.: The Theory of Decision Making. *Psychological Bulletin* 51, 380–397 (1954)
- [R12.7] Friedman, J. (ed.): *The Rational Choice Controversy*. Yale University Press, New Haven (1996)
- [R12.8] Godelier, M.: *Rationality and Irrationality in Economics*. New Left Books, London (1972)
- [R12.9] Habermas, J.: *Toward a Rational Society*. Heinemann, London (1972)
- [R12.10] Heap, S.H.: *Rationality in Economics*. B. Blackwell, New York (1989)
- [R12.11] Herrnstein, R.J.: Rational Choice Theory. *American Psychologist* 45, 356–367 (1990)

- [R12.12] Hogarth, R.M., Reder, M.W. (eds.): *Rational Choice: The Contrast Between Economics and Psychology*. University of Chicago Press, Chicago (1987)
- [R12.13] Holloway, C.A.: *Decision Making under Uncertainty: Models and Choices*. Prentice-Hall, Englewood Cliffs (1979)
- [R12.14] Hooker, C.A., et al. (eds.): *Foundations and Applications of Decision Theory I*. D. Reidel Pub., Dordrecht (1978)
- [R12.15] Hooker, C.A., et al. (eds.): *Foundations and Applications of Decision Theory II*. D. Reidel pub., Dordrecht (1978)
- [R12.16] Janis, I.L., Mann, L.: *Decision Making: A Psychological Analysis of Conflict, Choice and Commitment*. Free Press, New York (1977)
- [R12.17] Joyce, J.M.: *Why We Still Need the Logic of Decision*. *Philosophy of Science* 67, (suppl.), S1-S13 (2000)
- [R12.18] Kaplan, M.F., Schwartz, S. (eds.): *Human Judgment and Decision Process*. Academic Press, New York (1975)
- [R12.19] Kaufmann, A.: *The Science of Decision-Making: Introduction to Praxeology*. McGraw-Hill, New York (1968)
- [R12.20] Kickert, W.J.M.: *Organization of Decision-Making: A Systems-Theoretical Approach*. NorthHolland, Amsterdam (1980)
- [R12.21] Moe, T.: *On the Scientific Status of Rational Choice Theory*. *American Journal of Political Science* 23, 215–243 (1979)
- [R12.22] Plott, C.R.: *Path Independence, Rationality and Social Choice*. *Econometrica* 41, 1075–1091 (1973)
- [R12.23] Sen, A.K., et al.: *Necessary and Sufficient Condition for Rational Choice Under Majority Decision*. *Jour. of Econ. Theory* 1, 178–202 (1969)
- [R12.24] Sen, A.K.: *Collective Choice and Social Welfare*. Holden-Day, San Francisco (1970)
- [R12.25] Sowell, T.: *Knowledge and Decision*. Harper, New York (1980)
- [R12.26] Slote, M.: *Beyond Optimization: A Study of Rational Choice*. Mass. Harvard University Press, Cambridge (1989)
- [R12.27] White, D.J.: *Fundamentals of Decision Theory*. Wiley, New York (1976)
- [R12.28] White, D.J.: *Decision Methodology*. Elsevier, New York (1976)

## **R13 On Rationality, Ideology and Decision-Choice Process**

- [R13.1] Abercrombie, N., et al.: *The Dominant Ideology Thesis*. Allen and Unwin, London (1980)
- [R13.2] Abercrombie, N.: *Class, Structure, and Knowledge: Problems in the Sociology of Knowledge*. New York University Press, New York (1980)
- [R13.3] Aron, R.: *The Opium of the Intellectuals*. University Press of America, Lanham (1985)
- [R13.4] Aronowitz, S.: *Science as Power: Discourse and Ideology in Modern Society*, Minneapolis. University of Minnesota Press, Minneapolis (1988)
- [R13.5] Barinaga, M., Marshall, E.: *Confusion on the Cutting Edge*. *Science* 257, 616–625 (1992)
- [R13.6] Barnett, R.: *Beyond All Reason: Living with Ideology in the University*. Society for Research into Higher Education and Open University Press, Philadelphia (2003)
- [R13.7] Barth, H.: *Truth and Ideology*. University of California Press, Berkeley (1976)
- [R13.8] Basin, A., Verdie, T.: *The Economics of Cultural Transmission and the Dynamics of Preferences*. *Journal of Economic Theory* 97, 298–319 (2001)
- [R13.9] Beardsley, P.L.: *Redefining Rigor: Ideology and Statistics in Political Inquiry*. Sage Publications, Beverly Hills (1980)
- [R13.10] Bikhchandani, S., et al.: *A Theory of Fads, Fashion, Custom, and Cultural Change*. *Journal of political Economy* 100, 992–1026 (1992)
- [R13.11] Robert, B., Richerson, P.J.: *Culture and Evolutionary Process*. University of Chicago Press, Chicago (1985)
- [R13.12] Buczkowski, P., Klawiter, A.: *Theories of Ideology and Ideology of Theories*. Rodopi, Amsterdam (1986)
- [R13.13] Cole, J.R.: *Patterns of Intellectual influence in Scientific Research*. *Education* 43, 377–403 (1968)
- [R13.14] Cole Jonathan, R., Cole, S.: *Social Stratification in Science*. University of Chicago Press, Chicago (1973)
- [R13.15] Debackere, K., Rappa, M.A.: *Institutional Variations in Problem Choice and Persistence among Scientists in an Emerging Fields*. *Research Policy* 23, 425–441 (1994)

- [R13.16] Fraser, C., Gaskell, G.: *The Social Psychological Study of Widespread Beliefs*. Clarendon Press, Oxford (1990)
- [R13.17] Gieryn, T.F.: Problem Retention and Problem Change in Science. *Sociological Inquiry* 48, 96–115 (1978)
- [R13.18] Harrington Jr., J.E.: The Rigidity of Social Systems. *Journal of Political Economy* 107, 40–64
- [R13.19] Hinich, M., Munger, M.: *Ideology and the Theory of Political Choice*. University of Michigan Press, Ann Arbor (1994)
- [R13.20] Hull, D.L.: *Science as a Process: An Evolutionary Account of the Social and Conceptual Development of Science*. University of Chicago Press, Chicago (1988)
- [R13.21] Mészáros, I.: *Philosophy Ideology and Social Science: Essay in Negation and Affirmation*. Wheatsheaf, Brighton, Sussex (1986)
- [R13.22] Mészáros, I.: *The Power of Ideology*. New York University Press, New York (1989)
- [R13.23] Newcomb, T.M., et al.: *Persistence and Change*. John Wiley, New York (1967)
- [R13.24] Pickering, A.: *Science as Practice and Culture*. University of Chicago Press, Chicago (1992)
- [R13.25] Therborn, G.: *The Ideology of Power and the Power of Ideology*. NLB Publications, London (1980)
- [R13.26] Thompson, K.: *Beliefs and Ideology*. Tavistock Publication, New York (1986)
- [R13.27] Ziman, J.: The Problem of ‘Problem Choice’. *Minerva* 25, 92–105 (1987)
- [R13.28] Ziman, J.: *Public Knowledge: An Essay Concerning the Social Dimension of Science*. Cambridge University Press, Cambridge (1968)
- [R13.29] Zuckerman, H.: Theory Choice and Problem Choice in Science. *Sociological Inquiry* 48, 65–95 (1978)

## **R14 On Rationality, Information and Knowledge**

- [R14.1] Aczel, J., Daroczy, Z.: *On Measures of Information and their Characterizations*. Academic Press, New York (1975)
- [R14.2] Angelov, S., Georgiev, D.: The Problem of Human Being in Contemporary Scientific Knowledge. *Soviet Studies in Philosophy*, 49–66 (Summer 1974)

- 
- [R14.3] Anderson, J.R.: *The Architecture of Cognition*. Harvard University Press, Cambridge (1983)
- [R14.4] Angelov, S., Georgiev, D.: *The Problem of Human Being in Contemporary Scientific Knowledge*. *Soviet Studies in Philosophy*, 49–66 (Summer 1974)
- [R14.5] Ash, R.: *Information Theory*. John Wiley and Sons, New York (1965)
- [R14.6] Barlas, Y., Carpenter, S.: *Philosophical Roots of Model Validation: Two Paradigms*. *System Dynamic Review* 6, 148–166 (1990)
- [R14.7] Barrett, T.W.: *Quantum Statistical Foundations for Structural Information Theory and Communication Theory*. In: Lakshmikantham, V. (ed.) *Nonlinear Systems and Applications*, pp. 389–407. Academic Press, New York (1977)
- [R14.8] Bergin, J.: *Common Knowledge with Monotone Statistics*. *Econometrica* 69, 1315–1332 (2001)
- [R14.9] Bestougeff, H., Ligozat, G.: *Logical Tools for Temporal Knowledge Representation*. Ellis Horwood, New York (1992)
- [R14.10] Brillouin, L.: *Science and information Theory*. Academic Press, New York (1962)
- [R14.11] Bruner, J.S., et al.: *A Study of Thinking*. Wiley, New York (1956)
- [R14.12] Brunner, K., Meltzer, A.H.: *Three Aspects of Policy and Policy Making: Knowledge, Data and Institutions*, Carnegie-Rochester Conference Series, vol. 10. North-Holland, Amsterdam (1979)
- [R14.13] Burks, A.W.: *Chance, Cause, Reason: An Inquiry into the Nature of Scientific Evidence*. University of Chicago Press, Chicago (1977)
- [R14.14] Calvert, R.: *Models of Imperfect Information in Politics*. Harwood Academic Publishers, New York (1986)
- [R14.15] Chomsky, N.: *Problem of Knowledge and Freedom*. Collins, Glasgow (1972)
- [R14.16] Cornforth, M.: *The Theory of Knowledge*. International Pub., New York (1972)
- [R14.17] Coombs, C.H.: *A Theory of Data*. Wiley, New York (1964)
- [R14.18] Cooper, W.S.: *Foundations of Logico-Linguistics: A Unified Theory of Information, Language and Logic*. D. Reidel, Dordrecht (1978)
- [R14.19] Crawshay-Willims: *Methods and Criteria of Reasoning*. Routledge and Kegan Paul, London (1957)
- [R14.20] Dretske, F.I.: *Knowledge and the Flow of Information*. MIT Press, Cambridge (1981)

- [R14.21] Dreyfus, H.L.: A Framework for Misrepresenting Knowledge. In: Ringle, M. (ed.) *Philosophical Perspectives in Artificial Intelligence*. Humanities press, Atlantic Highlands (1979)
- [R14.22] Fagin, R., Halpenn, J.Y.: Reasoning About Knowledge and Probability. In: Vardi, M. (ed.) *Proceedings of the Second Conference of Theoretical Aspects of Reasoning about Knowledge*, pp. 277–293. Morgan Kaufmann, Asiloman (1988)
- [R14.23] Fagin, R., et al.: *Reasoning About Knowledge*. MIT Press, Cambridge (1995)
- [R14.24] Geanakoplos, J.: Common Knowledge. In: Moses, Y. (ed.) *Proceedings of the Fourth Conference of Theoretical Aspects of Reasoning about Knowledge*. Morgan Kaufmann, San Mateo (1992)
- [R14.25] Geanakoplos, J.: Common Knowledge. *Journal of Economic Perspectives* 6, 53–82 (1992)
- [R14.26] George, F.H.: *Models of Thinking*. Allen and Unwin, London (1970)
- [R14.27] George, F.H.: Epistemology and the problem of perception. *Mind* 66, 491–506 (1957)
- [R14.28] Green, E.J.: On the Difficulty of Eliciting Summary Information. *Jour. Economic Theory* 32, 228–245 (1984)
- [R14.29] Hintikka, J.: *Knowledge and Belief*. Cornell University Press, Ithaca (1962)
- [R14.30] Hirshleifer, J.: The Private and Social Value of Information and Reward to inventive activity. *American Economic Review* 61, 561–574 (1971)
- [R14.31] Hirshleifer, J., Riley, J.: The Analytics of Uncertainty and Information: An expository Survey. *Journal of Economic Literature* 17, 1375–1421 (1979)
- [R14.32] Hirshleifer, J., Riley, J.: *The Economics of Uncertainty and Information*. Cambridge University Press, Cambridge (1992)
- [R14.33a] Kapitsa, P.L.: The Influence of Scientific Ideas on Society. *Soviet Studies in Philosophy*, 52–71 (Fall 1979)
- [R14.33b] Kedrov, B.M.: The Road to Truth. *Soviet Studies in Philosophy* 4, 3–53 (1965)
- [R14.34] Klatzky, R.L.: *Human Memory: Structure and Processes*. W. H. Freeman Pub., San Francisco (1975)
- [R14.35] Koopmans, T.C.: *Three Essays on the State of Economic Science*. McGraw-Hill, New York (1957)



- 
- [R14.36] Kreps, D., Wilson, R.: Reputation and Imperfect Information. *Journal of Economic Theory* 27, 253–279 (1982)
- [R14.37] Kubát, L., Zeman, J. (eds.): *Entropy and Information*. Elsevier, Amsterdam (1975)
- [R14.38] Kurcz, G., Shugar, W., et al. (eds.): *Knowledge and Language*. North-Holland, Amsterdam (1986)
- [R14.39] Lakemeyer, G., Nobel, B. (eds.): *Foundations of Knowledge Representation and Reasoning*. Springer, Berlin (1994)
- [R14.40] Lektorskii, V.A.: Principles involved in the Reproduction of Objective in Knowledge. *Soviet Studies in Philosophy* 4(4), 11–21 (1967)
- [R14.41] Levi, I.: *The Enterprise of Knowledge*. MIT Press, Cambridge (1980)
- [R14.42] Levi, I.: Ignorance, Probability and Rational Choice. *Synthese* 53, 387–417 (1982)
- [R14.43] Levi, I.: Four Types of Ignorance. *Social Science* 44, 745–756
- [R14.44] Levine, D., Aparicio IV, M. (eds.): *Neural Networks for Knowledge Representation and Inference*. Lawrence Erlbaum Associates Publishers, Hillsdale (1994)
- [R14.45] Marschak, J.: *Economic Information, Decision and Prediction: Selected Essays*, vol. II, Part II. Dordrecht-Holland, Boston (1974)
- [R14.46] McDermott, J.: Representing Knowledge in Intelligent Systems. In: Ringle, M. (ed.) *Philosophical Perspectives in Artificial Intelligence*, pp. 110–123. Humanities press, Atlantic Highlands (1979)
- [R14.47] Menges, G. (ed.): *Information, Inference and Decision*. D. Reidel Pub., Dordrecht (1974)
- [R14.48] Masuch, M., Pólos, L. (eds.): *Knowledge Representation and Reasoning Under Uncertainty*. Springer, New York (1994)
- [R14.49] Moses, Y. (ed.): *Proceedings of the Fourth Conference of Theoretical Aspects of Reasoning about Knowledge*. Morgan Kaufmann, San Mateo (1992)
- [R14.50] Nielsen, L.T., et al.: Common Knowledge of Aggregation Expectations. *Econometrica* 58, 1235–1239 (1990)
- [R14.51] Newell, A.: *Unified Theories of Cognition*. Harvard University Press, Cambridge (1990)
- [R14.52a] Newell, A.: *Human Problem Solving*. Prentice-Hall, Englewood Cliff (1972)
- [R14.52b] Ogden, G.K., A., I.: *The Meaning of Meaning*. Harcourt-Brace Jovanovich, New York (1923)

- [R14.53] Planck, M.: *Scientific Autobiography and Other Papers*. Greenwood, Westport (1968)
- [R14.54] Pollock, J.: *Knowledge and Justification*. Princeton University Press, Princeton (1974)
- [R14.55] Polanyi, M.: *Personal Knowledge*. Routledge and Kegan Paul, London (1958)
- [R14.56] Popper, K.R.: *Objective Knowledge*. Macmillan, London (1949)
- [R14.57] Price, H.H.: *Thinking and Experience*. Hutchinson, London (1953)
- [R14.58] Putman, H.: *Reason, Truth and History*. Cambridge University Press, Cambridge (1981)
- [R14.59] Putman, H.: *Realism and Reason*. Cambridge University Press, Cambridge (1983)
- [R14.60] Putman, H.: *The Many Faces of Realism*. Open Court Publishing Co., La Salle (1987)
- [R14.61] Rothschild, K.W.: Models of Market Organization with Imperfect Information: A Survey. *Journal of Political Economy* 81, 1283–1308 (1973)
- [R14.62] Russell, B.: *Human Knowledge, its Scope and Limits*. Allen and Unwin, London (1948)
- [R14.63] Russell, B.: *Our Knowledge of the External World*. Norton, New York (1929)
- [R14.64] Samet, D.: Ignoring Ignorance and Agreeing to Disagree. *Journal of Economic Theory* 52, 190–207 (1990)
- [R14.65] Schroder, H.M., Suedfeld, P. (eds.): *Personality Theory and Information Processing*. Ronald Pub., New York (1971)
- [R14.66] Searle, J.: *Minds, Brains and Science*. Harvard University Press, Cambridge (1985)
- [R14.67] Sen, A.K.: On Weights and Measures: Information Constraints in Social Welfare Analysis. *Econometrica* 45, 1539–1572 (1977)
- [R14.68] Shin, H.: Logical Structure of Common Knowledge. *Journal of Economic Theory* 60, 1–13 (1993)
- [R14.69] Simon, H.A.: *Models of Thought*. Yale University Press, New Haven (1979)
- [R14.70] Smithson, M.: *Ignorance and Uncertainty, Emerging Paradigms*. Springer, New York (1989)
- [R14.71] Sowa, J.F.: *Knowledge Representation: Logical, Philosophical, and Computational Foundations*. Brooks Pub., Pacific Grove (2000)
- [R14.72] Stigler, G.J.: The Economics of Information. *Journal of Political Economy* 69, 213–225 (1961)

- [R14.73] Tiukhtin, V.S.: How Reality Can be Reflected in Cognition: Reflection as a Property of All Matter. *Soviet Studies in Philosophy* 3(1), 3–12 (1964)
- [R14.74] Tsyarkin, Y.Z.: *Foundations of the Theory of Learning Systems*. Academic Press, New York (1973)
- [R14.75] Ursul, A.D.: The Problem of the Objectivity of Information. In: Kubaát, L., Zeman, J. (eds.) *Entropy and Information*, pp. 187–230. Elsevier, Amsterdam (1975)
- [R14.76] Vardi, M. (ed.): *Proceedings of Second Conference on Theoretical Aspects of Reasoning about Knowledge*. Morgan Kaufman, Assiloman (1988)
- [R14.77] Vazquez, M., et al.: Knowledge and Reality: Some Conceptual Issues in System Dynamics Modeling. *Systems Dynamics Review* 12, 21–37 (1996)
- [R14.78] Zadeh, L.A.: A Theory of Commonsense Knowledge. In: Skala, H.J., et al. (eds.) *Aspects of Vagueness*, pp. 257–295. D. Reidel Co., Dordrecht (1984)
- [R14.79] Zadeh, L.A.: The Concept of Linguistic Variable and its Application to Approximate reasoning. *Information Science* 8, 199–249 (1975); (also in vol. 9, pp. 40–80)

## **R15 Rationality and Category Theory in Mathematics, Logic and Sciences**

- [R15.1] Awodey, S.: Structure in Mathematics and Logic: A Categorical Perspective. *Philosophia Mathematica* 3, 209–237 (1996)
- [R15.2] Bell, J.L.: Category Theory and the Foundations of Mathematics. *British Journal of Science* 32, 349–358 (1981)
- [R15.3] Bell, J.L.: Categories, Toposes and Sets. *Synthese* 51, 337–393 (1982)
- [R15.4] Black, M.: *The Nature of Mathematics*, Totowa, N.J., Littlefield. Adams and Co (1965)
- [R15.5] Blass, A.: The Interaction Between Category and Set Theory. *Mathematical Applications of Category Theory* 30, 5–29 (1984)
- [R15.6] Brown, B., Woods, J. (eds.): *Logical Consequence; Rival Approaches and New Studies in exact Philosophy: Logic, Mathematics and Science*, Oxford, Hermes, vol. II (2000)
- [R15.7] Butts, R.: *Logic, Foundations of Mathematics and Computability*. Reidel, Boston (1977)

- [R15.8] Domany, J.L., et al.: *Models of Neural Networks III*. Springer, New York (1996)
- [R15.9] Dompere, K.K.: *Fuzzy Rationality: Methodological Critique and Unity of Classical, Bounded and Other Rationalities*, Monograph, Department of Economics, Howard University, Washington, D.C (2006)
- [R15.10] Feferman, S.: *Categorical Foundations and Foundations of Category Theory*. In: Butts, R. (ed.) *Logic, Foundations of Mathematics and Computability*. Reidel, Boston, pp. 149–169 (1977)
- [R15.11] Kosko, B.: *Neural Networks and Fuzzy Systems*, Englewood Cliffs, NJ (1991)
- [R15.12] Landry, E.: *Category Theory: the Language of Mathematics*. *Philosophy of Science* 66(suppl.), S14–S27
- [R15.13] Landry, E., Marquis, J.P.: *Categories in Context: Historical, Foundational and Philosophical*. *Philosophia Mathematica* 13, 1–43 (2005)
- [R15.14] Marquis, J.–P.: *Three Kinds of Universals in Mathematics*. In: Brown, B., Woods, J. (eds.) *Logical Consequence; Rival Approaches and New Studies in exact Philosophy: Logic, Mathematics and Science*, vol. II Oxford, Hermes, pp. 191–212 (2000)
- [R15.15] McLarty, C.: *Category Theory in Real Time*. *Philosophia Mathematica* 2, 36–44 (1994)
- [R15.16] McLarty, C.: *Learning from Questions on Categorical Foundations*. *Philosophia Mathematica* 13, 44–60 (2005)
- [R15.17] Taylor, J.G. (ed.): *Mathematical Approaches to Neural Networks*. North-Holland, New York (1993)
- [R15.18] Van Benthem, J., et al.: *The Age of Alternative Logics: Assessing Philosophy of Logic and Mathematics Today*. Springer, New York (2006)

## **R16 On Rationality, Probabilistic Concepts and Reasoning**

- [R16.1] Anscombe, F., Aumann, R.J.: *A Definition of Subjective Probability*. *Annals of Mathematical Statistics* 34, 199–205 (1963)
- [R16.2] Billingsley, P.: *Probability and Measure*. John Wiley and Sons, New York (1979)
- [R16.3] Boolos, G.S., Jeffrey, R.C.: *Computability and Logic*. Cambridge University Press, New York (1989)

- 
- [R16.4] Carnap, R.: *Logical Foundation of Probability*. Routledge and Kegan Paul Ltd, London (1950)
- [R16.5] Cohen, L.J.: *The Probable and Provable*. Clarendon Press, Oxford (1977)
- [R16.6] de Finetti, B.: Probabilities of Probabilities a Real Problem or Misunderstanding? In: Aykac, A., et al. (eds.) *New Developments in the Applications of Bayesian Methods*, Amsterdam, pp. 1–10 (1977)
- [R16.7] Dempster, A.P.: Upper and Lower Probabilities Induced by Multi-valued Mapping. *Annals of Math Statistics* 38, 325–339 (1967)
- [R16.8] Domotor, Z.: Higher Order Probabilities. *Philosophical Studies* 40, 31–46 (1981)
- [R16.9] Doob, J.L.: *Stochastic Processes*. John Wiley and Sons, New York (1990)
- [R16.10] Fellner, W.: Distortion of Subjective Probabilities as a Reaction to Uncertainty. *Quarterly Journal of Economics* 75, 670–689 (1961)
- [R16.11] Fishburn, P.C.: The Axioms of Subjective Probability. *Statistical Sciences* 1(3), 335–358 (1986)
- [R16.12] Fishburn, P.C.: *Decision and Value*. John Wiley and Sons, New York (1964)
- [R16.13] Gaifman, C.: A Theory of Higher Order Probabilities. In: Halpern, J.Y. (ed.) *Theoretical Aspects of Reasoning about Knowledge*, pp. 275–292. Morgan Kaufman, Los Altos (1986)
- [R16.14] George, F.H.: Logical Networks and Probability. *Bulletin of Mathematical Biophysics* 19, 187–199 (1957)
- [R16.15] Good, I.J.: *Probability and the Weighing of Evidence*. Charles Griffin and Co. Ltd, London (1950)
- [R16.16] Good, I.J.: Subjective Probability as the Measure of Non-measurable Set. In: Nagel, E., et al. (eds.) *Logic, Methodology, and the Philosophy of Science*, pp. 319–329. Stanford University Press, Stanford (1962)
- [R16.17] Good, I.J.: *Good Thinking: The Foundations of Probability and Applications*. University of Minnesota Press, Minneapolis (1983)
- [R16.18] Goutsias, J., et al. (eds.): *Random Sets: Theory and Applications*. Springer, New York (1997)
- [R16.19] Hacking, I.: *The emergence of Probability*. Cambridge University Press, London (1975)

- [R16.20] Harsanyi, J.C.: Acceptance of Empirical Statements: A Bayesian Theory without Cognitive Utilities. *Theory and Decision* 18, 1–30 (1985)
- [R16.21] Ulrich, H., Klement, E.P.: Plausibility Measures: A General Framework for Possibility and Fuzzy Probability Measures. In: [116], pp. 31–50.
- [R16.22] Holmos, P.R.: *Measure Theory*. Van Nostrand, New York (1950)
- [R16.23] Hoover, D.N.: Probabilistic Logic. *Annals of Mathematical Logic* 14, 287–313 (1978)
- [R16.24] Jeffery, R.: The Present Position in Probability Theory. *British Journal for the Philosophy of Science* 5, 275–280 (1955)
- [R16.25] Kahneman, D., Tversky, A.: Subjective Probability: A Judgment of representativeness. *Cognitive Psychology* 3, 430–454 (1972)
- [R16.26] Keynes, J.M.: *A treatise on Probability*. MacMillan and Co, London (1921)
- [R16.27] Kolmogorov, A.N.: *Foundation of the Theory of Probability*. Chelsea Pub. Co, New York (1956)
- [R16.28] Koopman, B.O.: The Axioms and Algebra of Intuitive Probability. *Annals of Mathematics* 41, 269–292 (1940)
- [R16.29] Kraft, C., et al.: Intuitive Probability on Finite Sets. *Annals of Mathematical Statistics* 30, 408–419 (1959)
- [R16.30] Kullback, S., Leibler, R.A.: Information and Sufficiency. *Annals of Math. Statistics* 22, 79–86 (1951)
- [R16.31] Kyburg, H.E.: *Probability and the Logic of Rational Belief*. Conn. Wesleyan University Press, Middleton (1961)
- [R16.32] Kyburg, H.E., Smokler, H.E.: *Studies in Subjective Probability*. Wiley, New York (1964)
- [R16.33] Laha, R., Rohatgi, V.K.: *Probability Theory*. John Wiley and Sons, New York (1979)
- [R16.34] Laplace, P.S.: *A Philosophical Essay on Probabilities*. Constable and Co., London (1951)
- [R16.35] Matheron, G.: *Random Sets and Integral Geometry*. John Wiley and sons, New York (1975)
- [R16.36] Marschak, J.: Personal Probabilities of Probabilities. *Theory and Decision* 6, 121–153 (1975)
- [R16.37] Nagel, E.: Principles of the Theory of Probability. In: Neurath, O., et al. (eds.) *International Encyclopedia of Unified Science*, vol. 1 – 10, pp. 343–422. University of Chicago Press, Chicago (1955)

- [R16.38] Nilsson, N.J.: Probabilistic Logic. *Artificial Intelligence* 28, 71–87 (1986)
- [R16.39] Parrat, L.G.: *Probability and Experimental Errors in Science*. John Wiley and Sons, New York (1961)
- [R16.40] Patty Wayne, C.: *Foundations of Topology*. Mass. PWS Pub. Co, Boston (1993)
- [R16.41] Parthasarath, K.R.: *Probability Measure on Metric Spaces*. Academic Press, New York (1967)
- [R16.42] Ruspini, E.: Epistemic Logics, Probability and Calculus of Evidence. In: *Proceedings, 10th International Joint Conference on AI (IJCAI 1987)*, Milan, pp. 924 – 931 (1987)
- [R16.43] Savage, L.J.: *The Foundations of Statistics*. John Wiley and Sons, New York (1954)
- [R16.44] Schneeweiss, H.: Probability and Utility – Dual Concepts in Decision Theory I. In: Menges (ed.) *Information, Inference and Decision*. Reidel, Dordrecht (1974)
- [R16.45] Shafer, G.: *A Mathematical Theory of Evidence*. Princeton University Press, Princeton (1976)
- [R16.46] Shafer, G.: Constructive Probability. *Synthese* 48, 1–60 (1997)
- [R16.47] Shannon, C.E., Weaver, W.: *The Mathematical Theory of Communication*. University of Illinois Press, Urbana (1949)
- [R16.48] Tiller, P., Green, E.D. (eds.): *Probability and Inference in the Law of Evidence: The Uses and Limits of Bayesianism*. Kluwer Academic Publishers, Dordrecht (1988)
- [R16.49] von Mises, R.: *Probability, Statistics and Truth*. Dover Pub., New York (1981)
- [R16.50] Wagon, S.: *The Banach-Tarski Paradox*. Cambridge University Press, Cambridge (1985)

## **R17 On Classical Rationality, Optimality and Equilibrium**

- [R17.1] Agassi, J., Jarvie, I.C. (eds.): *Rationality: The Critical View*. M. Nijhoff Pub., Boston, Mass (1987)
- [R17.2] Amsterdamski, S.: *Between History and Method: Disputes about the Rationality of Science*. Kluwer Academic Pub., Dordrecht (1992)

- [R17.3] Anderson, G.: *Rationality in Science and Politics*. D. Reid Pub. Co, Dordrecht (1984)
- [R17.4] Arrow, K.J.: Rationality of self and Others in an Economic System. *Journal of Business* 59, S385–S399 (1986)
- [R17.5] Baumol, W., Quant, R.: Rules of Thumb and Optimally Imperfect Decisions. *American Economic Review* 54, 23–46 (1964)
- [R17.6] Jean-Pascal: *The Macroeconomics of Imperfect Competition and Nonclearing Markets: A Dynamic General Equilibrium Approach*. MIT Press, Cambridge (2002)
- [R17.7] Benn, S.I., Mortimore, G.W. (eds.): *Rationality and the Social Sciences: Contributions to the Philosophy and Methodology of the Social Sciences*. Routledge and Kegan Paul, London (1976)
- [R17.8] Bicchieri, C.: *Rationality and Coordination*. Cambridge University Press, New York (1993)
- [R17.9] Biderman, S., Scharfstein, B.-A.: *Rationality in a question: East and Western View of Rationality*. E.J. Brill Pub., New York (1989)
- [R17.10] Black, F.: *Exploring General Equilibrium*. MIT Press, Cambridge (1995)
- [R17.11] Boland, L.A.: On the Futility of Criticizing the Neoclassical Maximization Hypothesis. *The American Economic Review* 71, 1031–1036 (1981)
- [R17.12] Bowman, E.H.: Consistency and Optimality in Managerial Decision Making. *Management Science* 9, 310–321 (1963)
- [R17.13] Brubaker, R.: *The Limits of Rationality: An Essay on the Social and Moral Thought of Max Weber*. Allen and Unwin, London (1984)
- [R17.14] Busemeyer, J., Diederich, A.: Survey of Decision Field Theory. *Mathematical Social Sciences* 43, 345–370 (2002)
- [R17.15] Churchman, C.W.: *Prediction and Optimal Decision*. Prentice-Hall, Englewood Cliffs (1961)
- [R17.16] Cohen, L.J.: Can Human Irrationality be Experimentally Demonstrated? *Behavioral and Brain Science* 4, 317–370 (1981)
- [R17.17] Cohen, M., Jaffray, J.-Y.: Is Savage's Independence Axiom a Universal Rationality Principle? *Behavioral Science* 33, 38–47
- [R17.18] Cornwall, R.R.: *Introduction to the use of General Equilibrium Analysis*. North-Holland, New York (1984)
- [R17.19] De Sousa, R.: *The Rationality of Motion*. MIT Press, Cambridge



- 
- [R17.20] Dilman, I.: *Studies in Langue and Reason*, Totowa, N.J., Barnes and Nobles, Books (1981)
- [R17.21] Dixon, P.B.: *The Theory of Joint Maximization*. North-Holland, Amsterdam (1975)
- [R17.22] Dompere, K.K.: *On Epistemology and Decision-Choice Rationality*. In: Trapp, R. (ed.) *Cybernetics and System Research*, pp. 219–228. North-Holland, New York (1982)
- [R17.23] Dompere, K.K.: *Fuzzy Rationality I; Critique and Methodological Unity of Classical and Bounded Rationalities*, Working Monograph, Washington D.C., Department of Economics, Howard University (2006)
- [R17.24] Dompere, K.K.: *Fuzzy Rationality II; Unified Epistemic Models of Decision-Choice Processes*, Working Monograph, Washington D.C., Department of Economics, Howard University (2007)
- [R17.25] Dompere, K.K.: *Fuzzy Rationality III; Epistemics on Uncertainty, Expectations and Risk in Decision-Choice Processes*, Working Monograph, Washington D.C., Department of Economics, Howard University (2008)
- [R17.26] Eaves, B.C.: *Computing Kakutani Fixed Points*. *Journal of Applied Mathematics* 21, 236–244 (1971)
- [R17.27] Elster, J.: *Ulysses and the Sirens: Studies in Rationality and Irrationality*. Cambridge University Press, New York (1979)
- [R17.28] Elster, J.: *Studies in the Subversion of Rationality*. Cambridge University Press, New York (1983)
- [R17.29] Ernst, G.C., et al.: *Principles of Structural Equilibrium, a Study of Equilibrium Conditions by Graphic, Force Moment and Virtual Displacement (virtual work)*. University of Nebraska Press, Lincoln Na (1962)
- [R17.30] Fischer, R.B., Peters, G.: *Chemical Equilibrium*. Saunders Pub., Philadelphia (1970)
- [R17.31] Fisher, F.M.: *Disequilibrium Foundations of Equilibrium Economics*. Cambridge University Press, New York (1983)
- [R17.32] Fourgeaud, C.: *Learning Procedures and Convergence to Rationality*. *Econometrica* 54, 845–868 (1986)
- [R17.33] Freeman, A., Carchedi, G. (eds.): *Marx and Non-Equilibrium Economics*. Edward Elgar, Cheltenham (1996)
- [R17.34] Newton, G., Hare, P.H. (eds.): *Naturalism and Rationality*. Prometheus Books, Buffalo (1986)

- [R17.35] Ginsburgh, V.: *Activity Analysis and General Equilibrium Modeling*. North-Holland, New York (1981)
- [R17.36] Hahn, F.: *Equilibrium and Macroeconomics*. MIT Press, Cambridge (1984)
- [R17.37] Hansen, B.: *A Survey of General Equilibrium Systems*. McGraw-Hill, New York (1970)
- [R17.38] Hilpinen, R. (ed.): *Rationality in Science: Studies in the Foundations of Science and Ethics*. D. Reidel, Dordrecht (1980)
- [R17.39] Hogarth, R.M., Reder, M.W. (eds.): *Rational Choice: The Contrast between Economics and Psychology*. University of Chicago Press, Chicago (1986)
- [R17.40] Hollis, M., Lukes, S. (eds.): *Rationality and Relativism*. MIT Press, Cambridge (1982)
- [R17.41] Martin, H., Nell, E.J.: *Rational Economic Man: A Philosophical Critique of Neo-classical Economics*. Cambridge University Press, New York (1975)
- [R17.42] Howard, N.: *Paradoxes of Rationality*. MIT Press, Cambridge (1973)
- [R17.43] Hurwicz, L.: *Optimality Criteria for Decision Making Under Ignorance*, Mimeographed, Cowles Commission Discussion Paper, Statistics 370 (1951)
- [R17.44] Kakutani, S.: *A Generalization of Brouwer's Fixed Point Theorem*. *Duke Mathematical Journal* 8, 416–427 (1941)
- [R17.45] Kaldor, N.: *Equilibrium Theory and Growth Theory*. In: Boskin, M.J. (ed.) *Economics and Human Welfare*, pp. 2273–2911. Academic Press, New York (1979)
- [R17.46] Keita, L.D.: *Science, Rationality and Neoclassical Economics*. University of Delaware Press, Newark (1992)
- [R17.47] Kirman, A. (ed.): *Elements of General Equilibrium Analysis*. Blackwell, Malden (1998)
- [R17.48] Kirman, A., Salmon, M. (eds.): *Learning and Rationality in Economics*. Basil Blackwell, Oxford (1993)
- [R17.49] Kornia, J.: *Anti-Equilibrium*. North-Holland, Amsterdam (1971)
- [R17.50] Kramer, G.H.: *A Dynamic Model of Political Equilibrium*. *Journal of Economic Theory* 16, 310–334 (1977)
- [R17.51] Kramer, G.: *On a Class of Equilibrium Conditions for Majority Rule*. *Econometrica* 41, 285–297 (1973)
- [R17.52] Kuenne, R.E.: *The Theory of General Economic Equilibrium*. Princeton University Press, Princeton (1967)

- 
- [R17.53] Marschak, J.: Actual Versus Consistent Decision Behavior. *Behavioral Science* 9, 103–110 (1964)
- [R17.54] McKenzie, L.W.: *Classical General Equilibrium Theory*. MIT Press, Cambridge (2002)
- [R17.55] McMullin, E. (ed.): *Construction and Constraint: The Shaping of Scientific Rationality*. University of Notre Dame Press, Notre Dame Ind (1988)
- [R17.56] Jozef, M. (ed.): *The Problem of Rationality in Science and its Philosophy: Popper vs. Polanyi (The Polish Conferences)*. Kluwer Academic Publishers, Boston (1995)
- [R17.57] Mongin, P.: Does Optimization Imply Rationality. *Synthese* 124, 73–111 (2000)
- [R17.58] Negishi, T.: *Microeconomic Foundations of Keynesian Macroeconomics*. North-Holland, Amsterdam (1979)
- [R17.59] Newton-Smith, W.H.: *The Rationality of Science*. Routledge and Kegan Paul, Boston (1981)
- [R17.60] Page, S.E.: Two Measures of Difficulty. *Economic Theory* 8, 321–346 (1996)
- [R17.61] Parfit, D.: Personal Identity and Rationality. *Synthese* 53, 227–241 (1982)
- [R17.62] Pitt, J.C., Pera, M. (eds.): *Rational Changes in Science: Essays on Scientific Reasoning*. D. Reidel, Dordrecht (1987)
- [R17.63] Plott, C.R.: A Notion of Equilibrium and Its Possibility under Majority Rule. *Amer. Econ. Rev.* 57, 787–806 (1967)
- [R17.64] Preston, C.J.: *Random Fields*. Springer, Berlin (1976)
- [R17.65] Quirk, J., Saposnik, R.: *Introduction to General Equilibrium Theory and Welfare Economics*. McGraw-Hill, New York (1968)
- [R17.66] Radner, R.: Competitive Equilibrium Under Uncertainty. *Econometrica* 36, 31–58 (1968)
- [R17.67] Rapart, A.: Escape from Paradox. *Scientific American*, 50–56 (July 1967)
- [R17.68] Rescher, N. (ed.): *Reason and Rationality in Natural Science: A Group of Essays*. University Press of America, Lanham (1985)
- [R17.69] Sen, A.: Rational Behavior. In: Eatwell, J., et al. (eds.) *Utility and Probability*. Norton, New York, pp. 198–216 (1990)
- [R17.70] Shackle, G.: *Epistemics and Economics*. Cambridge University Press, Cambridge (1973)

- [R17.71] Simon, H.A.: Rational Choice and the Structure of Environment. *Psychological Review* 63, 129–138 (1956)
- [R17.72] Simon, H.A.: Rationality as Process and as Product of Thought. *American Economic Review* 68, 1–16 (1978)
- [R17.73] Simon, H.A.: A Behavioral Model of Rational Choice. *Quarterly Journal of Economics* 69, 99–118 (1955)
- [R17.74] Simon, H.A.: *Models of Man: Social and Rational*. Wiley, New York (1957)
- [R17.75] Stambaugh, J.: *The Real is not the Rational*. State University of New York Press, Albany (1986)
- [R17.76] Tamny, M., Irani, K.D. (eds.): *Rationality in Thought and Action*. Greenwood Press, New York (1986)
- [R17.77] Turski, W.G.: *Toward a Rationality of Emotions; Essay in the Philosophy of Mind*. Ohio University Press, Athens (1994)
- [R17.78] Torr, C.: *Equilibrium, Expectations, and Information: A Study of General Theory and Modern Classical Economics*. Westview Press, Boulder Colo (1988)
- [R17.79] Valentinuzzi, M.: *The Organs of Equilibrium and Orientation as a Control System*. Hardwood Academic Pub., New York (1980)
- [R17.80] Walsh, V.C., Gram, H.: *Classical and Neoclassical Theories of General Equilibrium: Historical Origins and Mathematical Structure*. Oxford University Press, New York (1980)
- [R17.81] Roy, W.E.: *General Equilibrium Analysis: Studies in Appraisal*. Cambridge University Press, Cambridge (1985)
- [R17.82] Roy, W.E.: *Microfoundations: The Compatibility of Microeconomics and Macroeconomics*. Cambridge University Press, Cambridge (1980)
- [R17.83] Whittle, P.: *Systems in Stochastic Equilibrium*. Wiley, New York (1986)

## **R18 On Bounded Rationality**

- [R18.1] Arthur, W.B.: Designing Economic Agents that Act Like Human Agents: A Behavioral Approach to Bounded Rationality. *American Economic Review: Papers and Proceedings* 81, 353–359 (1991)
- [R18.2] Dow, J.: Search Decisions with Limited Memory. *Review of Economic Studies* 58, 1–14 (1991)

- 
- [R18.3] Gigerenzer, G., Selten, R.: *Bounded Rationality: The Adaptive Toolbox*. MIT Press, Cambridge (2001)
- [R18.4] Gigerenzer, G., Goldstein, D.G.: Reasoning the Fast and Frugal Way: Models of Bounded Rationality. *Psychological Review* 103, 650–669 (1996)
- [R18.5] Gigerenzer, G.: Bounded Rationality: Models of Fast and Frugal Inference. *Swiss Journal of Economic Statistics* 133, 201–218 (1997)
- [R18.6] Honkapohja, S.: Adaptive Learning and Bounded Rationality. *European Economic Review* 37, 587–594
- [R18.7] Lipman, B.: Information Processing and Bounded Rationality: A Survey. *Canadian Jour. of Economics* 28, 42–63 (1995)
- [R18.8] Lipman, B.: How to Decide How to Decide How ...: Modeling Limited Rationality. *Econometrica* 59, 1105–1125 (1991)
- [R18.9] March, J.G.: Bounded Rationality, Ambiguity and Engineering of Choice. *The Bell Journal of Economics* 9(2), 587–608 (1978)
- [R18.10] Neyman, A.: Bounded Rationality Justifies Cooperation in the Finitely Repeated Prisons' Dilemma Game. *Economic Letters* 19, 227–229
- [R18.11] Radner, R.: Can Bounded Rationality Resolve the Prisoner's Dilemma? In: Mas-Colell, A., Hildenbrand, W. (eds.) *Essays in Honor of Gerard Debreu*. North-Holland, Amsterdam (1986)
- [R18.12] Rieskamp, J., et al.: Extending the Bounds of Rationality: Evidence and Theories of Preferential Choice. *Journal of Economic Literature* 44, 631–661 (2006)
- [R18.13] Rosenthal, R.: A Bounded-Rationality Approach to the Study of Noncooperative Games. *International Journal of Game Theory* 18, 273–292 (1989)
- [R18.14] Rubinstein, A.: *Modeling Bounded Rationality*. MIT Press, Cambridge (1998)
- [R18.15] Rubinstein, A.: New Directions in Economic Theory – Bounded Rationality. *Revista Española de Economía* 7, 3–15 (1990)
- [R18.16] Sargent, T.: *Bounded Rationality in Macroeconomics*. Clarendon, Oxford (1993)
- [R18.17] Simon, H.A.: Theories of Bounded Rationality. In: McGuire, C.B., et al. (eds.) *Decision and Organization*, pp. 161–176. North Holland, Amsterdam (1972)

- [R18.18] Simon, H.A.: *Models of Bounded Rationality*, 2nd edn. MIT Press, Cambridge (1982)
- [R18.19] Simon, H.A.: *From Substantive to Procedural Rationality*. In: Latis, S.J. (ed.) *Methods and Appraisal in Economics*, pp. 129–148. Cambridge University Press, New York (1976)
- [R18.20] Starbuck, W.H.: *Levels of Aspiration*. *Psychological Review* 70, 51–60 (1963)
- [R18.21] Zemel, E.: *Small Talk and Cooperation: A Note on Bounded Rationality*. *Journal of Economic Theory* 49, 1–9
- [R18.22] Stigum, B.P., et al.: *Foundation of Utility and Risk Theory with Application*, D. Reidel Pub., Boston (1983)

## **R19 On Rationality, Information, Games and Decision-Choice Conflicts**

- [R19.1] Aumann, R.: *Correlated Equilibrium as an Expression of Bayesian Rationality*. *Econometrica* 55, 1–18 (1987)
- [R19.2] Aumann, R., Hart, S.: *Handbook of Game Theory with Economic Applications*. North-Holland, New York (1992)
- [R19.3] Border, K.: *Fixed Point Theorems with Applications to Economics and Game Theory*. Cambridge University Press, Cambridge (1985)
- [R19.4] Brams, S., Kilgour, D.M.: *Game Theory and National Security*. Basil Blackwell, Oxford (1988)
- [R19.5] Brandenburger, A.: *Knowledge and Equilibrium Games*. *Journal of Economic Perspectives* 6, 83–102 (1992)
- [R19.6] Campbell, R., Sowden, L.: *Paradoxes of Rationality and Cooperation: Prisoner's Dilemma and Newcomb's Problem*. University of British Columbia Press, Vancouver (1985)
- [R19.7] Crawford, V., Sobel, J.: *Strategic Information Transmission*. *Econometrica* 50, 1431–1452 (1982)
- [R19.8] Dresher, M., et al. (eds.): *Contributions to the Theory of Games*. *Annals of Mathematics Studies*, vol. III(39). Princeton University Press, Princeton (1957)
- [R19.9] Scott, G., Humes, B.: *Games, Information, and Politics: Applying Game Theoretic Models to Political Science*. University of Michigan Press, Ann Arbor (1996)
- [R19.10] Gjesdal, F.: *Information and Incentives: The Agency Information Problem*. *Review of Economic Studies* 49, 373–390 (1982)

- [R19.11] Harsanyi, J.: Games with Incomplete Information Played by 'Bayesian' Players I: The Basic Model. *Management Science* 14, 159–182 (1967)
- [R19.12] Harsanyi, J.: Games with Incomplete Information Played by 'Bayesian' Players II: Bayesian Equilibrium Points. *Management Science* 14, 320–334 (1968)
- [R19.13] Harsanyi, J.: Games with Incomplete Information Played by 'Bayesian' Players III: The Basic Probability Distribution of the Game. *Management Science* 14, 486–502 (1968)
- [R19.14] Harsanyi, J.: *Rational Behavior and Bargaining Equilibrium in Games and Social Situations*. Cambridge University Press, New York (1977)
- [R19.15] Haussmann, U.G.: *A Stochastic Maximum Principle for Optimal Control of Diffusions*. Longman, England (1986)
- [R19.16] Haywood, O.: Military Decisions and Game Theory. *Journal of the Operations Research Society of America* 2, 365–385 (1954)
- [R19.17] Krasovskii, N.N., Subbotin, A.I.: *Game-theoretical Control Problems*. Springer, New York (1988)
- [R19.18] Kuhn, H. (ed.): *Classics in Game Theory*. Princeton University Press, Princeton (1997)
- [R19.19] Lagunov, V.N.: *Introduction to Differential Games and Control Theory*. Heldermann, Verlag, Berlin (1985)
- [R19.20] Luce, D.R., Raiffa, H.: *Games and Decisions*. John Wiley and Sons, New York (1957)
- [R19.21] Maynard Smith, J.: The Theory of Games and the Evolution of Animal Conflicts. *Journal of Theoretical Biology* 47, 209–221 (1974)
- [R19.22] Maynard Smith, J.: *Evolution and the Theory of Games*. Cambridge University Press, Cambridge (1982)
- [R19.23] Milgrom, P., Roberts, J.: Rationalizability, Learning and Equilibrium in Games with Strategic Complementarities. *Econometrica* 58, 1255–1279 (1990)
- [R19.24] Myerson, R.: *Game Theory: Analysis of Conflict*. Harvard University Press, Cambridge (1991)
- [R19.25] Nalebuff, B., Riley, J.: Asymmetric Equilibrium in the War of Attrition. *Journal of Theoretical Biology* 113, 517–527 (1985)
- [R19.26] Pauly, M.V.: Clubs Commonality, and the Core: An Integration of Game Theory and the Theory of Public Goods. *Economica* 35, 314–324 (1967)

- [R19.27] Rapoport, A., Chammah, A.: Prisoner's Dilemma: A Study in Conflict and Cooperation. University of Michigan Press, Ann Arbor (1965)
- [R19.28] Rosenthal, R.: Games of Perfect Information, Predatory Pricing, and the Chain Store Paradox. *Journal of Economic Theory* 25, 92–100 (1981)
- [R19.29] Roth, A.E.: The Economist as Engineer: Game Theory, Experimentation, and Computation as Tools for Design Economics. *Econometrica* 70, 1341–1378 (2002)
- [R19.30] Shubik, M.: Game Theory in the Social Sciences: Concepts and Solutions. MIT Press, Cambridge (1982)
- [R19.31] Von Neumann, J., Morgenstern, O.: The Theory of Games in Economic Behavior. John Wiley and Sons, New York (1944)

## **R20 On Rationality and Philosophy of Science**

- [R20.1a] Achinstein, P.: The Problem of Theoretical Terms. In: Brody, B.A. (ed.) *Reading in the Philosophy of Science*. Prentice Hall, Englewood Cliffs (1970)
- [R20.1b] Amo Afer, A.G.: The Absence of Sensation and the Faculty of Sense in the Human Mind and Their Presence in our Organic and Living Body, Dissertation and Other essays, Halle Wittenberg, Jena, Martin Luther University Translation, pp. 1727–1749 (1968)
- [R20.2] Benacerraf, P.: God, the Devil and Gödel. *Monist* 51, 9–32 (1967)
- [R20.3] Black, M. (ed.): *The Importance of Language*. Prentice-Hall, Englewood Cliffs (1962)
- [R20.4] Black, M.: *The Nature of Mathematics*. Adams and Co., Totowa (1965)
- [R20.5] Blanche, R.: *Contemporary Science and Rationalism*. Oliver and Boyd, Edinburgh (1968)
- [R20.6] Bloomfield, L.: Linguistic Aspects of Science. In: Neurath, O., et al. (eds.) *International Encyclopedia of Unified Science*, vol. 1 – 10, pp. 219–277. University of Chicago Press, Chicago (1955)
- [R20.7] Braithwaite, R.B.: Models in the empirical Sciences. In: Brody, B.A. (ed.) *Reading in the Philosophy of Science*, pp. 268–275. Prentice Hall, Englewood Cliffs (1970)



- 
- [R20.8] Braithwaite, R.B.: *Scientific Explanation*. Cambridge University Press, Cambridge (1955)
- [R20.9] Brody, B.A. (ed.): *Reading in the Philosophy of Science*. Prentice Hall, Englewood Cliffs (1970)
- [R20.10] Brody, B.A.: *Confirmation and Explanation*. In: Brody, B.A. (ed.) *Reading in the Philosophy of Science*, pp. 410–426. Prentice-Hall, Englewood Cliffs (1970)
- [R20.11] Carnap, R.: *Foundations of Logic and Mathematics*. In: *International Encyclopedia of Unified Science*, pp. 143–211. Univ. of Chicago, Chicago (1939)
- [R20.12] Carnap, R.: *Statistical and Inductive Probability*. In: Brody, B.A. (ed.) *Reading in the Philosophy of Science*, pp. 440–450. Prentice-Hall, Englewood Cliffs (1970)
- [R20.13] Carnap, R.: *On Inductive Logic*. *Philosophy of Science* 12, 72–97 (1945)
- [R20.14] Carnap, R.: *The Two Concepts of Probability*. *Philosophy and phenomenological Review* 5, 5513–5532 (1945)
- [R20.15] Carnap, R.: *The Methodological Character of Theoretical Concepts*. In: Feigl, H., Scriven, M. (eds.) *Minnesota Studies in the Philosophy of Science*, vol. I, pp. 38–76 (1956)
- [R20.16] Charles, D., Lennon, K. (eds.): *Reduction, Explanation, and Realism*. Oxford University Press, Oxford (1992)
- [R20.17] Cohen, R.S., Wartofsky, M.W. (eds.): *Methodological and Historical Essays in the Natural and Social Sciences*. D. Reidel Publishing Co., Dordrecht (1974)
- [R20.18] Church, A.: *An Unsolvable Problem of Elementary Number Theory*. *American Journal of Mathematics* 58, 345–363 (1936)
- [R20.19] Davidson, D.: *Truth and Meaning: Inquiries into Truth and Interpretation*. Oxford University Press, Oxford (1984)
- [R20.20] Davis, M.: *Computability and Unsolvability*. McGraw-Hill, New York (1958)
- [R20.21] Dompere, K.K.: *Polyrhythmicity: Foundations of African Philosophy*. Adonis and Abbey Pub., London (2006)
- [R20.22] Dompere, K.K., Ejaz, M.: *Epistemics of Development Economics: Toward a Methodological Critique and Unity*. Greenwood Press, Westport (1995)
- [R20.23] Feigl, H., Scriven, M. (eds.): *Minnesota Studies in the Philosophy of Science*, vol. I (1956)

- [R20.24] Feigl, H., Scriven, M. (eds.): *Minnesota Studies in the Philosophy of Science*, vol. II (1958)
- [R20.25] Garfinkel, A.: *Forms of Explanation: Structures of Inquiry in Social Science*. Yale University Press, New Haven (1981)
- [R20.26] Georgescu-Roegen, N.: *Analytical Economics*. Harvard University Press, Cambridge (1967)
- [R20.27a] George, F.H.: *Philosophical Foundations of Cybernetics*. Tunbridge Well, Great Britain (1979)
- [R20.27b] Gorsky, D.R.: *Definition*. Progress Publishers, Moscow (1974)
- [R20.28] Gray, W., Rizzo, N.D. (eds.): *Unity Through Diversity*. Gordon and Breach, New York (1973)
- [R20.29] Grattan-Guinness, I.: *The Development of the Foundations of Mathematical Analysis From Euler to Riemann*. MIT Press, Cambridge (1970)
- [R20.30] Hausman, D.M.: *The Exact and Separate Science of Economics*. Cambridge University Press, Cambridge (1992)
- [R20.31] Hanson, W.H.: *Mechanism and Gödel's Theorems*. *British Journal of Philosophy of Science* 22(1), 9–16 (1971)
- [R20.32] Hart, W.D. (ed.): *The Philosophy of Mathematics*. Oxford University Press, Oxford (1996)
- [R20.33] Helmer, O., Oppenheim, P.: *A Syntactical Definition of Probability and Degree of confirmation*. *The Journal of Symbolic Logic* 10, 25–60 (1945)
- [R20.34] Hempel, C.G.: *Studies in the Logic of Confirmation*. *Mind* 54, Part I, 1–26 (1945)
- [R20.35] Hempel, C.G.: *The Theoretician's Dilemma*. In: Feigl, H., Scriven, M. (eds.) *Minnesota Studies in the Philosophy of Science*, vol. II, pp. 37–98 (1958)
- [R20.36] Hempel, C.G.: *Probabilistic Explanation*. In: Brody, B.A. (ed.) *Reading in the Philosophy of Science*, pp. 28–38. Prentice-Hall, Englewood Cliffs (1970)
- [R20.37] Hempel, C.G., Oppenheim, P.: *Studies in the Logic of Explanation*. In: *Philosophy of Science*, vol. 15, pp. 135–175 (1948); (In: Brody, B.A. (ed.) *Reading in the Philosophy of Science*, pp. 8–27. Prentice-Hall, Englewood Cliffs (1970))
- [R20.38] Hempel, C.G., Oppenheim, P.: *A Definition of Degree of Confirmation*. *Philosophy of Science* 12, 98–115 (1945)
- [R20.39] Hintikka, J. (ed.): *The Philosophy of Mathematics*. Oxford University Press, London (1969)

- 
- [R20.40] Hockney, D., et al.: *Contemporary Research in Philosophical Logic and Linguistic Semantics*. Reidel Pub., Co., Dordrecht-Holland (1975)
- [R20.41] Hoyninggen-Huene, P., Wuketits, F.M. (eds.): *Reductionism and Systems Theory in the Life Science: Some Problems and Perspectives*. Kluwer Academic Pub., Dordrecht (1989)
- [R20.42] Kedrov, B.M.: *Toward the Methodological Analysis of Scientific Discovery*. *Soviet Studies in Philosophy* 1, 45–65 (1962)
- [R20.43] Kedrov, B.M.: *On the Dialectics of Scientific Discovery*. *Soviet Studies in Philosophy* 6, 16–27 (1967)
- [R20.44] Kemeny, J.G., Oppenheim, P.: *On Reduction*. In: Brody, B.A. (ed.) *Reading in the Philosophy of Science*, pp. 307–318. Prentice-Hall, Englewood Cliffs (1970)
- [R20.45] Klappholz, K.: *Value Judgments of Economics*. *British Jour. of Philosophy* 15, 97–114 (1964)
- [R20.46] Kmita, J.: *The Methodology of Science as a Theoretical Discipline*. *Soviet Studies in Philosophy*, 38–49 (Spring 1974)
- [R20.47] Krupp, S.R. (ed.): *The Structure of Economic Science*. Prentice-Hall, Englewood Cliff (1966)
- [R20.48] Kuhn, T.: *The Structure of Scientific Revolution*. University of Chicago Press, Chicago (1970)
- [R20.49] Kuhn, T.: *The Function of Dogma in Scientific Research*. In: Brody, B.A. (ed.) *Reading in the Philosophy of Science*, pp. 356–374. Prentice-Hall, Englewood Cliffs (1970)
- [R20.50] Kuhn, T.: *The Essential Tension: Selected Studies in Scientific Tradition and Change*. University of Chicago Press, Chicago (1979)
- [R20.51] Lakatos, I. (ed.): *The Problem of Inductive Logic*. North Holland, Amsterdam (1968)
- [R20.52] Lakatos, I.: *Proofs and Refutations: The Logic of Mathematical Discovery*. Cambridge University Press, Cambridge (1976)
- [R20.53] Lakatos, I.: *Mathematics, Science and Epistemology: Philosophical Papers*. In: Worrall, J., Currie, G. (eds.), vol. 2. Cambridge Univ. Press, Cambridge (1978)
- [R20.54] Lakatos, I.: *The Methodology of Scientific Research Programmes*, vol. 1. Cambridge University Press, New York (1978)
- [R20.55] Lakatos, I., Musgrave, A. (eds.): *Criticism and the Growth of Knowledge*, pp. 153–164. Cambridge University Press, New York (1979)

- [R20.56] Lenzen, V.: Procedures of Empirical Science. In: Neurath, O., et al. (eds.) *International Encyclopedia of Unified Science*, vol. 1 – 10, pp. 280–338. University of Chicago Press, Chicago (1955)
- [R20.57] Levi, I.: Must the Scientist make Value Judgments? In: Brody, B.A. (ed.) *Reading in the Philosophy of Science*, pp. 559–570. Prentice-Hall, Englewood Cliffs (1970)
- [R20.58] Lewis, D.: *Convention: A Philosophical Study*. Harvard University Press, Cambridge (1969)
- [R20.59] Mayer, T.: *Truth versus Precision in Economics*. Edward Elgar, London (1993)
- [R20.60] Menger, C.: *Investigations into the Method of the Social Sciences with Special Reference to Economics*. New York University Press, New York (1985)
- [R20.61] Mirowski, P. (ed.): *The Reconstruction of Economic Theory*. Kluwer Nijhoff, Boston (1986)
- [R20.62] Mueller, I.: *Philosophy of Mathematics and Deductive Structure in Euclid's Elements*. MIT Press, Cambridge (1981)
- [R20.63] Nagel, E., Godel's, J.R.: *Proof*. Routler and Kegan Paul, London (1959)
- [R20.64] Nagel, E., et al. (eds.): *Logic, Methodology, and the Philosophy of Science*. Stanford University Press, Stanford (1962)
- [R20.65] Narens, L.: A Theory of Belief for Scientific Refutations. *Synthese* 145, 397–423 (2005)
- [R20.66] Neale, M.A., Bazerman, M.: *Cognition and Rationality in Negotiation*. Free Press, New York (1991)
- [R20.67] Niebyl, K.H.: Modern Mathematics and Some Problems of Quantity, Quality and Motion in Economic Analysis. *Science* 7(1), 103–120 (1940)
- [R20.68] Neurath, O., et al. (eds.): *International Encyclopedia of Unified Science*, vol. 1 – 10. University of Chicago Press, Chicago (1955)
- [R20.69] Neurath, O.: Unified Science as Encyclopedic. In: Neurath, O., et al. (eds.) *International Encyclopedia of Unified Science*, vol. 1 – 10, pp. 1–27. University of Chicago Press, Chicago (1955)
- [R20.70a] Nkrumah, K.: *Consciencism*. Heinemann, London (1964)
- [R20.70b] Polanyi, M.: Genius in Science. In: Cohen, R.S., Wartofsky, M.W. (eds.) *Methodological and Historical Essays in the Natural and Social Sciences*, pp. 57–71. D. Reidel Publishing Co, Dordrecht (1974)

- 
- [R20.71] Popper, K.: *The Nature of Scientific Discovery*. Harper and Row, New York (1968)
- [R20.72] Reize, S.: *The Universe of Meaning*. The Philosophical Library, New York (1953)
- [R20.73] Ringle, M. (ed.): *Philosophical Perspectives in artificial Intelligence*. Humanities Press (1979)
- [R20.74] Rudner, R.: The Scientist qua Scientist Makes Value Judgments. *Philosophy of Science* 20, 1–6 (1953)
- [R20.75] Russell, B.: *Our Knowledge of the External World*. Norton, New York (1929)
- [R20.76] Russell, B.: *Human Knowledge, Its Scope and Limits*. Allen and Unwin, London (1948)
- [R20.77] Russell, B.: *Logic and Knowledge: Essays 1901-1950*. Capricorn Books, New York (1971)
- [R20.78] Russell, B.: *An Inquiry into Meaning and Truth*. Norton, New York (1940)
- [R20.79] Ruzavin, G.I.: On the Problem of the Interrelations of Modern Formal Logic and Mathematical Logic. *Soviet Studies in Philosophy* 3(1), 34–44 (1964)
- [R20.80] Scriven, M.: Explanations, Predictions, and Laws. In: Brody, B.A. (ed.) *Reading in the Philosophy of Science*, pp. 88–104. Prentice-Hall, Englewood Cliffs (1970)
- [R20.81] Sellars, W.: The Language of Theories. In: Brody, B.A. (ed.) *Reading in the Philosophy of Science*, pp. 343–353. Prentice-Hall, Englewood Cliffs (1970)
- [R20.82] Serman, J.: The Growth of Knowledge: Testing a Theory of Scientific Revolutions with a Formal Model. *Technological Forecasting and Social Change* 28, 93–122 (1995)
- [R20.83] Tullock, G.: *The Organization of Inquiry*. Liberty Fund Inc., Indianapolis (1966)
- [R20.84] Vetrov, A.A.: Mathematical Logic and Modern Formal Logic. *Soviet Studies in Philosophy* 3(1), 24–33 (1964)
- [R20.85] von Mises, L.: *Epistemological Problems in Economics*. New York University Press, New York (1981)
- [R20.86] Wang, H.: *Reflections on Kurt*. MIT Press, Cambridge (1987)
- [R20.87] Watkins, J.W.N.: The Paradoxes of Confirmation. In: Brody, B.A. (ed.) *Reading in the Philosophy of Science*, pp. 433–438. Prentice-hall, Englewood Cliffs (1970)

- [R20.88] Wittgenstein, L.: *Ttactatus Logico-philosophicus*. The Humanities Press Inc., Atlantic Highlands (1974)
- [R20.89] Woodger, J.H.: *The Axiomatic Method in Biology*. Cambridge University Press, Cambridge (1937)

## **R21 On Rationality, Riskiness, Decision-Choice Process and Paradoxes**

- [R21.1] Allais, M.: The Foundations of the Theory of Utility and Risk: Some Central Points of the Discussions at the Oslo Conference. In: Hagen, O., Wenstop, F. (eds.) *Progress in Utility and Risk Theory*, pp. 3–131. D. Reidel Pub., Dordrecht (1984)
- [R21.2] Allais, M., Hagen, O. (eds.): *Expected Utility Hypotheses and the Allais Paradox*. D. Reidel Pub., Dordrecht (1979)
- [R21.3] Anand, P.: *Foundations of Rational Choice Under Risk*. Oxford University Press, New York (1993)
- [R21.4] Anderson, N.H., Shanteau, J.C.: Information Integration in Risky Decision Making. *Journal of Experimental Psychology* 84, 441–451 (1970)
- [R21.5] Arrow, K.: *Essays in the Theory of Risk-Bearing*. Markham Pub., Chicago (1971)
- [R21.6] Bar-Hillel, M., Margalit, A.: Newcombe's Paradox Revisited. *British Journal of Philosophy of Science* 23, 295–304 (1972)
- [R21.7] Becker, S.W., Brownson, F.O.: What Price Ambiguity? Or the role of Ambiguity in Decision Making. *Journal of Political Economy* 72, 62–73 (1964)
- [R21.8] Campbell, R., Lanning, S. (eds.): *Paradoxes of Rationality and Cooperation: Prisoner's Dilemma and Newcomb's Problem*. University of British Columbia Press, Vancouver (1985)
- [R21.9] Coombs, C.H.: Portfolio Theory and Measurement of Risk. In: Kaplan, M.F., Schwartz, S. (eds.) *Human Judgment and Decision Process*. Academic Press, New York (1975)
- [R21.10] Coombs, C.H., Huang, L.C.: Polynomial Psychophysics of Risk. *Journal of Mathematical Psychology* 7, 317–338 (1970)
- [R21.11] Crouch, E.A., et al.: *Risk/Analysis*. Ballinger, Cambridge (1982)
- [R21.12] Einhorn, H., Hogarth, R.M.: Ambiguity and Uncertainty in Probabilistic Inference. *Psychological Review* 92, 433–461 (1985)
- [R21.13] Ellsberg, D.: Risk, Ambiguity and the Savage Axioms. *Quarterly Journal of Economics* 75, 643–669 (1961)

- [R21.14] Friedman, M., Savage, L.J.: The Utility Analysis of Choice Involving Risk. *Journal of Political Economy* 56, 279–304
- [R21.15] Peter, G., Sahlin, N.: Unreliable Probabilities, Risk taking, and Decision Making. *Synthese* 53, 361–386 (1982)
- [R21.16] Hagen, O., Wenstøp, F. (eds.): *Progress in Utility and Risk Theory*. D. Reidel Pub., Dordrecht (1984)
- [R21.17] Handa, J.: Risk, Probability and a New Theory of Cardinal Utility. *Journal of Political Economy* 85, 97–122 (1977)
- [R21.18] Hurley, S.L.: Newcomb's Problem, Prisoner's Dilemma, and Collective Action. *Synthese* 86, 173–196 (1991)
- [R21.19] Harsanyi, J.C.: Cardinal Utility in Welfare Economics and in the Theory of Risk-Taking. *Jour. Polit. Econ.* 61, 434–435 (1953)
- [R21.20] Hart, A.G.: Risk, Uncertainty and Unprofitability of Compounding Probabilities. In: Lange, O., et al. (eds.) *Mathematical Economics and Econometrics*, pp. 110–118. Cicago University Press, Chicago (1942)
- [R21.21] Hogarth, R.M., Kunreether, H.: Ambiguity and Insurance Decisions. *American Economic Review* 75, 386–390 (1985)
- [R21.22] Kahneman, D., Tversky, A.: Prospect Theory. *Econometrica* 47, 263–292 (1979)
- [R21.23] Karmarkar, U.S.: Subjectively Weighted Utility and Allais Paradox. *Organization Behavior and Human Performance* 24, 67–72 (1979)
- [R21.24] Kogan, N., Wallach, M.A.: *Risk Taking: A Study in Cognition and Personality*. Hold Rinehart and Winston, New York (1974)
- [R21.25] Lave, L.B.: *Quantitative Risk Assessment in Regulation*. Brookings Institution, Washington (1982)
- [R21.26] Levi, I.: Ignorance, Probability and Rational Choice. *Synthese* 53, 387–417 (1982)
- [R21.27] Levi, I.: Four Types of Ignorance. *Social Research* 44, 745–756 (1977)
- [R21.28] MacCrimmon, Larsson, S.: Utility Theory: Axioms Versus 'Paradoxes'. In: Allais, M., Hagen, O. (eds.) *Expected Utility Hypotheses and the Allais Paradox*, pp. 333–409. D. Reidel Pub., Dordrecht (1979)
- [R21.29] Priest, G.: Sorites and Identity. *Logique et Analyse* 34, 293–296 (1991)
- [R21.30] Raiffa, H.: Risk, Ambiguity, and Savage Axioms: Comment. *Quarterly Journal of Economics* 77, 327–337 (1963)

- [R21.31] Roberts, H.V.: Risk, Ambiguity, and Savage Axioms: Comment. *Quarterly Journal of Economics* 75, 690–695 (1961)
- [R21.32] Rubinstein, A.: Similarity and Decision-making under Risk: Is there a Utility Theory Resolution to the Allais Paradox. *Journal of Economic Theory* 46, 145–153 (1988)
- [R21.33] Sainsbury, R.M.: *Paradoxes*. Cambridge University Press, Cambridge (1995)
- [R21.34] Schoemaker, P.J.H.: *Experiments on Decisions Under Risk: The Expected Utility Hypothesis*. Martinus Nijhoff Pub., Boston (1980)
- [R21.35] Shubik, M.: Information, Risk, Ignorance and Indeterminacy. *Quarterly Journal of Economics* 75, 643–669 (1961)
- [R21.36] Simpson, P.B.: Risk Allowance for Price Expectation. *Econometrica* 18, 253–259 (1950)
- [R21.37] Stigum, B.P., et al. (eds.): *Foundations of Utility and Risk Theory with Applications*. D. Reidel Publishing Com, Boston (1983)
- [R21.38] Williamson, T.: *Knowledge and its Limits*. Oxford University Press, Oxford (2000)
- [R21.39] Theil, H.: The Allocation of Power that Minimizes Tension. *Operations Research* 19, 977–982 (1971)
- [R21.40] Theil, H.: On Estimation of Relationships Involving Qualitative Variables. *American Journal of Sociology* 76, 103–154 (1970)

## **R22 On Theories of Utility and Expected Utility**

- [R22.1] Allais, M., Hagen, O. (eds.): *Expected Utility Hypothesis and Allais Paradox*. D. Reidel Pub., Dordrecht (1979)
- [R22.2] Chipman, J.S.: *Foundations of Utility*. *Econometrica* 28(2), 193–224 (1960)
- [R22.3] Eatwell, J., et al. (eds.): *Utility and Probability*. Norton, New York (1990)
- [R22.4] Fishburn, P.C.: *The Foundations of Expected Utility*. D. Reidel, Dordrecht (1982)
- [R22.5] Fishburn, P.C.: *Utility Theory for Decision Making*. Wiley, New York (1970)
- [R22.6] Heiner Ronald, A.: Origin of Predictable Behavior: Further Modeling and Applications. *American Economic Review* 75, 391–396 (1985)



- [R22.7] Luce, R.D., Suppes, P.: Preferences, Utility, and Subjective Probabilities. In: Luce, D.R., et al. (eds.) *Handbook of Mathematical Psychology*, pp. 42–49. Wiley, New York (1965)
- [R22.8] Mac Crimmon, K., Larsson, S.: Utility Theory Versus Paradoxes. In: Allais, M., Hagen, O. (eds.) *Expected Utility Hypothesis and Allias Paradox*. d. Reidel Pub., Dordrecht (1979)
- [R22.9] Samuelson, P.: Probability and Attempts to Measure Utility. *Economic Review* 1, 167–173 (1950)
- [R22.10] Samuelson, P.: Probability, Utility, and Independence Axiom. *Econometrica* 20, 670–678 (1952)
- [R22.11] Schoemaker, P.: The Expected Utility Model: Its Variants, Purposes, Evidence and Limitations. *Journal of Economic Literature* 20, 529–563 (1982)
- [R22.12] Stigler, G.J.: The Development of Utility Theory I. *Journal of Political Economy* 58, 307–327 (1958)
- [R22.13] Stigler, G.J.: The Development of Utility Theory II. *Journal of Political Economy* 58, 373–396 (1958)
- [R22.14] Suppes, P., Winet, M.: An Axiomatization of Utility based on the Notion of Utility Differences. *Management Science* 1, 259–270 (1955)
- [R22.15] von Neumann, J., Morgenstern, O.: *Theory of Games and Economic Behavior*. Princeton University press, Princeton (1947)

## R23 On Vagueness and Approximation

- [R23.1] Adams, E.W., Levine, H.F.: On the Uncertainties Transmitted from Premises to Conclusions in deductive Inferences. *Synthese* 30, 429–460 (1975)
- [R23.2] Arbib, M.A.: *The Metaphorical Brain*. McGraw-Hill, New York (1971)
- [R23.3] Becvar, J.: Notes on Vagueness and Mathematics. In: Skala, H.J., et al. (eds.) *Aspects of Vagueness*, pp. 1–11. D. Reidel Co., Dordrecht (1984)
- [R23.4] Black, M.: Vagueness: An Exercise in Logical Analysis. *Philosophy of Science* 17, 141–164 (1970)
- [R23.5] Black, M.: Reasoning with Loose Concepts. *Dialogue* 2, 1–12 (1973)

- [R23.6] Boolos, G.S., Jeffrey, R.C.: *Computability and Logic*. Cambridge University Press, New York (1989)
- [R23.7] Cohen, P.R.: *Heuristic Reasoning about uncertainty: An Artificial Intelligent Approach*. Pitman, Boston (1985)
- [R23.8] Darmstadter, H.: Better Theories. *Philosophy of Science* 42, 20–27 (1972)
- [R23.9] Davis, M.: *Computability and Unsolvability*. McGraw-Hill, New York (1958)
- [R23.10] Dummett, M.: Wang's Paradox. *Synthese* 30, 301–324 (1975)
- [R23.11] Dummett, M.: *Truth and Other Enigmas*. Mass. Harvard University Press, Cambridge (1978)
- [R23.12] Endicott, T.: *Vagueness in the Law*. Oxford University Press, Oxford (2000)
- [R23.13] Fine, K.: Vagueness, Truth and Logic. *Synthese* 54, 235–259 (1975)
- [R23.14] Evans, G.: Can there be Vague Objects? *Analysis* 38, 208 (1978)
- [R23.15] Gale, S.: Inexactness, Fuzzy Sets and the Foundation of Behavioral Geography. *Geographical Analysis* 4(4), 337–349 (1972)
- [R23.16] Ginsberg, M.L. (ed.): *Readings in Non-monotonic Reason*. Morgan Kaufmann, Los Altos (1987)
- [R23.17] Goguen, J.A.: The Logic of Inexact Concepts. *Synthese* 19, 325–373 (1968/1969)
- [R23.18] Graff, D., Timothy (eds.): *Vagueness*. Ashgate Publishing, Aldershot (2002)
- [R23.19] Hilpinen, R.: Approximate Truth and Truthlikeness. In: Pprelecki, M., et al. (eds.) *Formal Methods in the Methodology of Empirical Sciences*, pp. 19–42. Wroclaw/Reidel, Dordrecht Ossolineum (1976)
- [R23.20] Hockney, D., et al. (eds.): *Contemporary Research in Philosophical Logic and Linguistic Semantics*. Reidel Pub. Co., Dordrecht (1975)
- [R23.21] Ulrich, H., et al. (eds.): *Non-Classical Logics and their Applications to Fuzzy Subsets: A Handbook of the Mathematical Foundations of Fuzzy Set Theory*. Kluwer, Boston (1995)
- [R23.22] Katz, M.: In *Exact Geometry*. *Notre-Dame Journal of Formal Logic* 21, 521–535 (1980)
- [R23.23] Katz, M.: Measures of Proximity and Dominance. In: *Proceedings of the Second World Conference on Mathematics at the Service of Man*, Universidad Politecnica de Las Palmas, pp. 370–377 (1982)

- 
- [R23.24] Katz, M.: The Logic of Approximation in Quantum Theory. *Journal of Philosophical Logic* 11, 215–228 (1982)
- [R23.25] Keefe, R.: *Theories of Vagueness*. Cambridge University Press, Cambridge (2000)
- [R23.26] Keefe, R., Smith, P. (eds.): *Vagueness: A Reader*. MIT Press, Cambridge (1996)
- [R23.27] Kling, R.: Fuzzy Planner: Reasoning with Inexact Concepts in a Procedural Problem-solving Language. *Jour. Cybernetics* 3, 1–16 (1973)
- [R23.28] Kruse, R.E., et al.: *Uncertainty and Vagueness in Knowledge Based Systems: Numerical Methods*. Springer, New York (1991)
- [R23.29] Ludwig, G.: Imprecision in Physics. In: Hartkamper, A., Schmidt, H.J. (eds.) *Structure and Approximation in Physical Theories*, pp. 7–19. Plenum Press, New York (1981)
- [R23.30] Kullback, S., Leibler, R.A.: Information and Sufficiency. *Annals of Math. Statistics* 22, 79–86 (1951)
- [R23.31] Lakoff, G.: Hedges: A Study in Meaning Criteria and Logic of Fuzzy Concepts. In: Hockney, D., et al. (eds.) *Contemporary Research in Philosophical Logic and Linguistic Semantics*, pp. 221–271. Reidel Pub. Co., Dordrecht (1975)
- [R23.32] Lakoff, G.: Hedges: A Study in Meaning Criteria and the Logic of Fuzzy Concepts. *Jour. Philos. Logic* 2, 458–508 (1973)
- [R23.33] Laplace, P.S.: *A Philosophical Essay on Probabilities*. Constable and Co., London (1951)
- [R23.34] Levi, I.: *The Enterprise of Knowledge*. MIT Press, Cambridge (1980)
- [R23.35] Łucasiewicz, J.: *Selected Works: Studies in the Logical Foundations of Mathematics*. North-Holland, Amsterdam (1970)
- [R23.36] Machina, K.F.: Truth, Belief and Vagueness. *Jour. Philos. Logic* 5, 47–77 (1976)
- [R23.37] Menges, G., et al.: On the Problem of Vagueness in the Social Sciences. In: Menges, G. (ed.) *Information, Inference and Decision*, pp. 51–61. D. Reidel Pub, Dordrecht (1974)
- [R23.38] Merricks, T.: Varieties of Vagueness. *Philosophy and Phenomenological Research* 53, 145–157 (2001)
- [R23.39] Mycielski, J.: On the Axiom of Determinateness. *Fund. Mathematics* 53, 205–224 (1964)

- [R23.40] Mycielski, J.: On the Axiom of Determinateness II. *Fund. Mathematics* 59, 203–212 (1966)
- [R23.41] Naess, A.: Towards a Theory of Interpretation and Preciseness. In: Linsky, L. (ed.) *Semantics and the Philosophy of Language*. Univ. of Illinois Press, Urbana (1951)
- [R23.42] Narens, L.: The Theory of Belief. *Journal of Mathematical Psychology* 49, 1–31 (2003)
- [R23.43] Narens, L.: A Theory of Belief for Scientific Refutations. *Synthese* 145, 397–423 (2005)
- [R23.44] Netto, A.B.: *Fuzzy Classes*. Notices, Amar, Math. Society 68T-H28, 945 (1968)
- [R23.45] Neurath, O., et al. (eds.): *International Encyclopedia of Unified Science*, vol. 1 – 10. University of Chicago Press, Chicago (1955)
- [R23.46] Niebyl, K.H.: Modern Mathematics and Some Problems of Quantity, Quality and Motion in Economic Analysis. *Science* 7(1), 103–120 (1940)
- [R23.47] Orłowska, E.: Representation of Vague Information. *Information Systems* 13(2), 167–174 (1988)
- [R23.48] Parrat, L.G.: *Probability and Experimental Errors in Science*. John Wiley and Sons, New York (1961)
- [R23.49] Raffman, D.: Vagueness and Context-sensitivity. *Philosophical Studies* 81, 175–192 (1996)
- [R23.50] Reiss, S.: *The Universe of Meaning*. The Philosophical Library, New York (1953)
- [R23.51] Russell, B.: Vagueness. *Australian Journal of Philosophy* 1, 84–92 (1923)
- [R23.52] Russell, B.: *An Inquiry into Meaning and Truth*. Norton, New York (1940)
- [R23.53] Shapiro, S.: *Vagueness in Context*. Oxford University Press, Oxford (2006)
- [R23.54] Skala, H.J.: Modelling Vagueness. In: Gupta, M.M., Sanchez, E. (eds.) *Fuzzy Information and Decision Processes*, pp. 101–109. North-Holland, Amsterdam (1982)
- [R23.55] Skala, H.J., et al. (eds.): *Aspects of Vagueness*. D. Reidel Co., Dordrecht (1984)
- [R23.56] Sorensen, R.: *Vagueness and Contradiction*. Oxford University Press, Oxford (2001)

- 
- [R23.57] Tamburrini, G., Termini, S.: Some Foundational Problems in Formalization of Vagueness. In: Gupta, M.M., et al. (eds.) *Fuzzy Information and Decision Processes*, pp. 161–166. North-Holland, Amsterdam (1982)
- [R23.58] Termini, S.: Aspects of Vagueness and Some Epistemological Problems Related to their Formalization. In: Skala, H.J., et al. (eds.) *Aspects of Vagueness*, pp. 205–230. D. Reidel Co., Dordrecht (1984)
- [R23.59] Tikhonov, A.N., Arsenin, V.Y.: *Solutions of Ill-Posed Problems*. John Wiley and Sons, New York (1977)
- [R23.60] Tversky, A., Kahneman, D.: Judgments under Uncertainty: Heuristics and Biases. *Science* 185, 1124–1131 (1974)
- [R23.61] Ursul, A.D.: The Problem of the Objectivity of Information. In: Libor, K., Zeman, J. (eds.) *Entropy and Information*, pp. 187–230. Elsevier, Amsterdam (1975)
- [R23.62a] Vardi, M. (ed.): *Proceedings of Second Conference on Theoretical Aspects of Reasoning about Knowledge*. Morgan Kaufmann, Assiloman (1988)
- [R23.62b] Verma, R.R.: Vagueness and the Principle of the Excluded Middle. *Mind* 79, 66–77 (1970)
- [R23.63] Vetrov, A.A.: Mathematical Logic and Modern Formal Logic. *Soviet Studies in Philosophy* 3(1), 24–33 (1964)
- [R23.64] von Mises, R.: *Probability, Statistics and Truth*. Dover Pub., New York (1981)
- [R23.65] Williamson, T.: *Vagueness*. Routledge, London (1994)
- [R23.66] Wright, C.: On Coherence of Vague Predicates. *Synthese* 30, 325–365 (1975)
- [R23.67] Wright, C.: The Epistemic Conception of Vagueness. *Southern Journal of Philosophy* 33(Suppl.), 133–159 (1995)
- [R23.68] Zadeh, L.A.: A Theory of Commonsense Knowledge. In: Skala, H.J., et al. (eds.) *Aspects of Vagueness*, pp. 257–295. D. Reidel Co., Dordrecht (1984)
- [R23.69] Zadeh, L.A.: The Concept of Linguistic Variable and its Application to Approximate reasoning. *Information Science* 8, 199–249 (1975); also in Vol. 9, pp. 40–80

## **R24 On Rationality, Prescriptive Science and Theory of Planning**

- [R24.1] Alexander Ernest, R.: *Approches to Planning*. Gordon and Breach, Philadelphia (1992)
- [R24.2] Bailey, J.: *Social Theory for Planning*. Routledge and Kegan Paul, London (1975)
- [R24.3] Burchell, R.W., Sternlieb, G. (eds.): *Planning Theory in the 1980's: A Search for Future Directions*. Rutgers University Center for Urban and Policy Research, New Brunswick (1978)
- [R24.4] Camhis, M.: *Planning Theory and Philosophy*. Tavistock Publications, London (1979)
- [R24.5] Chadwick, G.: *A Systems View of Planning*. Pergamon, Oxford (1971)
- [R24.6] Cooke, P.: *Theories of Planning and Special Development*. Hutchinson, London (1983)
- [R24.7] Faludi, A.: *Planning Theory*. Pergamon, Oxford (1973)
- [R24.8] Faludi, A. (ed.): *A Reader in Planning Theory*. Pergamon, Oxford (1973)
- [R24.9] Horowitz, I.L.: *Social Planning and Social Science*. In: Burchell, R.W., Sternlieb, G. (eds.) *Planning Theory in the 1980's: A Search for Future Directions*, pp. 53–60. Rutgers University Center for Urban and Policy Research, New Brunswick (1978)
- [R24.10] Tomovic, R., Vukobratovic, M.: *General Sensitivity Theory*. American Elsevier, New York (1972)

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