

# Index

- Accountability, 124, 136, 256–257  
Acquisition of expertise, 47, 80, 88. *See also*  
  Learning  
Additivity axiom, 49  
Aggregation. *See* Combination of expert  
  opinion  
Agricultural expertise, 12, 14–17, 62  
Aleatory reasoning, 4, 110–113, 117–119  
Algorithms, 36, 41  
Anchor-and-adjust heuristic, 63, 98–99, 108,  
  158  
Assessment of expertise, 2–5, 25–33, 39, 47–  
  48, 55–71, 78, 111, 119, 160–161  
Audit trail, 7, 256–257  
Automatic thinking, 13  
Availability heuristic, 63, 85, 108  
Axioms, 28, 176
- Base-rate fallacy, 108–109  
Base rates, 50–53, 85, 87–90, 101, 108–110  
Bayes' theorem, 51, 87–89, 102  
Bayesian inference, 117–118, 211, 241, 246,  
  258, 261  
Bayesian systems, 7, 102, 231–232, 240  
Behavioral aggregation, 5, 155, 163–167,  
  174, 182–184, 193  
Behaviorism, 114–115, 119  
Biases. *See* Heuristics and biases  
Bootstrapping, 63–66, 69, 232  
Box-Jenkins methods, 252  
Brainstorming, 188  
Brier score, 50  
Broken leg cues, 66, 68
- Business expertise, 7, 14–17, 34, 50–53, 62–  
  63, 65, 67, 99–100, 131–148, 161–162,  
  165–166, 203–204, 208–209, 212–224,  
  256–257, 259–260
- Calibration of probabilities, 12, 34, 38–39,  
  43, 49–60, 67, 90, 93  
Card sort, 205, 213, 215, 221  
Causal reasoning, 2–7, 97, 109–124, 257,  
  259, 265  
Certainty factors, 211, 218, 236  
Chance, 3, 30–31, 96, 110  
Chess, 13, 15, 17, 43, 78, 237  
Clinical versus normative/statistical prediction,  
  33, 37–38, 229–260  
Cognitive biases. *See* Heuristics and biases  
Cognitive conflict, 6, 191–193  
Cognitive psychology/science, 3, 11–16, 113  
Cognitive style, 58  
Coherence of probabilities, 2, 12, 48–55  
Combination of expert opinion, 5–6, 101,  
  117, 155–177, 187, 190, 260  
Common sense, 203  
Communication, 6, 17, 20, 122, 163, 172–  
  173, 183–187, 209, 211–212, 217, 222,  
  232, 257, 262–263  
Competence. *See* Performance versus compe-  
  tence  
Conditioning. *See* Behaviorism  
Confidence in judgment, 12, 18, 20, 39, 120,  
  160–162, 166  
Confirmation bias, 82, 98, 253  
Conjunction fallacy, 108–109

- Consensus, 48, 62, 144, 163, 168, 184, 186–191, 257, 262
- Consensus-building techniques, 6, 184
- Constraint-based systems, 218–220
- Context, 206–211, 241–242
- Context focusing, 213, 215
- Contingency model, 4, 107, 110–113
- Corporate models, 5, 142
- Creativity, 36, 39, 119, 124, 148, 185
- Credibility of decision support, 6, 207, 210–212, 244–245, 259
- Credibility of experts, 17, 113, 147, 256, 257
- Cross-Impact Analysis, 48
- Culture, 143, 145, 147
- DAVID, 69
- Debiasing, 3, 38, 48, 156, 167–168, 263
- Decision aids, 18, 27, 35, 69, 185, 228
- Decision analysis, 2, 19, 33, 36–39, 48, 185, 262
- Decision conferencing, 6, 69, 184–193
- Decision support, 2, 8, 68, 70–71, 185–193, 206, 224, 227, 252, 265
- Decision support systems, 2, 5–7, 47–48, 61, 101, 122–124, 193, 203–204, 208–212, 214–221, 239–240, 244–246, 251–252, 257, 262–265
- Decision tree, 6–7, 31, 36, 207–208, 213–214, 224, 259
- Decompose-recompose, 54, 60, 64
- Decomposition of problems, 6, 18–19, 60, 192–193, 253, 257–259, 263–264
- Deductive reasoning, 13, 81–83, 117
- Delphi technique, 6, 48, 168–174, 177, 183
- Disagreement between experts, 2, 6, 30, 164, 167, 184–185, 191–193, 209–210, 222, 265
- Discrimination of cues/dimensions, 60, 83, 124, 156, 205
- Divide-and-conquer strategy, 18–19, 54
- Domain knowledge, 16, 19, 55–61, 68, 83, 115–116, 121, 167, 183, 204, 207, 218, 221, 233
- DYNAMO, 69
- Ecological validity, 51, 58, 70–71, 85–86, 158, 162, 176, 221
- Econometric models, 157, 161, 254–256
- Elicitation of domain knowledge. *See* Knowledge elicitation
- Elicitation of probabilities, 4, 55–60, 172
- Epistemic thinking, 4–5, 110–113, 117–122
- EQUITY, 186
- Expected utility. *See* Subjective expected utility
- Experience, 12, 19, 39, 43–44, 67–68, 70, 80–84, 89–90, 96–100, 115, 121, 130, 136, 144, 188, 222–224
- Experiments, 56, 60. *See also* Laboratory versus real world
- Expert systems, 2–6, 11, 14, 19, 47–48, 68, 100, 102, 203–225, 227, 233–246, 264
- Experts versus nonexperts, 2–4, 13–14, 18, 34, 42–43, 51, 65, 78–82, 90, 96–101, 107, 113, 122, 159, 165, 210, 253
- Explanation, 6, 20, 28, 100, 102, 119, 121, 211–212, 220, 228, 233, 238, 244
- Extrapolation, 157, 161, 252, 262–263
- Facilitators/overseers, 6, 156, 167, 169, 176–177, 184–193
- Feedback, 2, 6, 15, 18, 38, 39, 56–59, 61, 68, 70, 93, 112, 115, 161, 168–172, 183, 185, 192–193, 233, 244, 253, 265
- Forecasting, 3, 7, 51–53, 57, 65–66, 107, 120, 157, 159–162, 168, 177, 182, 187–192, 230, 252–265
- Forward versus backward reasoning, 80, 92, 214, 219–220, 236, 258–259
- Frame-based systems, 228, 234, 240–242, 245–246
- Framing, 32, 60, 69, 79, 98, 109, 123
- Functionalism. *See* Structuralism versus functionalism
- Gateways for judgment, 48
- Goals of judgment, 3, 25–30, 35–36, 80–81, 90, 120, 210
- Gold standard, 48, 62, 68–70, 207, 228, 238
- Group effects, 5, 6, 165–166, 173, 175
- Group facilitators. *See* Facilitators
- Group judgments, 5, 6, 18, 155–177, 181–199
- Groupthink, 166
- Heterogeneity of opinion, 6, 163–164, 170, 172
- Heuristics and biases, 4, 12–13, 34, 40–41, 50–53, 62–63, 85, 89–94, 98–102, 108, 158, 160, 164, 166, 170–171, 181–182,

- Heuristics and biases (*Cont.*)  
   193, 196–199, 223, 228, 233, 236, 253–254, 261, 263  
 Hindsight bias, 18, 28, 36, 92  
 HIVIEW, 186  
 Holistic judgment, 7, 54, 64, 221, 223–224, 265  
 Hot-hand fallacy, 97, 101  
 Human computer interaction, 211–212, 244  
 Hypotheses, 91–92, 95, 220, 232, 235–236, 258, 262  
  
 Identification of experts, 2–5, 25, 47–48, 159–160, 164, 170, 177, 188  
 Image theory, 118  
 Imaginability bias, 108  
 Improving judgment, 2, 3, 7, 25–44, 48, 125, 155–177, 182, 184, 192, 203  
 Incoherence, 48–55, 64  
 Influence diagrams, 69, 241, 259–260, 264–265  
 Information processing, 12, 16, 28, 31, 79–83, 173–175, 192–193, 214–215, 220  
 Information Technology, 136, 139–145, 184  
 Insight into decision processes, 99–100  
 Intermediate representation, 217–218  
 Interviews, 204, 213, 215  
 Intelligent decision support systems. *See* Decision support systems  
 Intelligent knowledge-based systems. *See* Expert systems  
 Intersection axiom, 50  
 Intuition, 35–39, 186, 252  
  
 Judgment domain, 4, 30, 55–58, 66–71  
 Judgment environment, 110, 112, 123  
 Judgment process. *See* Processes in judgment  
 Judgment strategies. *See* Strategies  
 Judgmental adjustments to forecasts/models, 7, 48, 210, 252–260, 263–265  
  
 KADS, 205  
 Knowledge-based systems. *See* Expert systems  
 Knowledge elicitation/acquisition, 2–4, 6, 31–32, 48, 67, 69, 81, 100, 102, 203–207, 210, 213–217, 220–224  
 Knowledge engineering, 20, 204–224, 228  
 Knowledge representation, 2–3, 6–7, 20, 41–43, 79–83, 116, 122, 125, 186, 204, 207–224, 227–246, 258–260  
  
 Laboratory versus real world, 2, 4, 12, 32, 34, 41, 51–53, 62, 70, 108–109, 158–163, 166, 170–171, 175–177, 252  
 Law of small numbers, 108–109  
 Learning, 25, 35, 57, 81, 92, 114, 161, 173, 177, 252  
 Legal expertise, 4, 12, 15, 62, 65, 84, 93–96  
 Likelihood estimation. *See* Probability judgment  
 LINDO, 187  
 Linear models, 7, 20, 37, 63–65, 69, 157, 163, 210, 227–233, 236, 242–243, 262  
  
 Management consultants, 5, 129, 135–148  
 Management information systems, 204, 210  
 Management science, 251–252  
 Managerial take-up of decision support, 6, 210, 212  
 Mathematical aggregation, 5, 155, 167–169, 172–177, 181–184, 196–199  
 Matrix-based representations of knowledge, 7, 215–220  
 Measurement of expertise, 59, 161, 265  
 Medical diagnosis, 5, 34, 50–54, 58, 61, 86–93, 117–119, 235, 239, 243, 246  
 Medical expertise, 4–5, 12, 14–15, 18, 34, 50–54, 61–67, 81, 84, 86, 92, 117, 119, 130, 229–230  
 Memory, 78, 85, 120–124  
 Mental models, 28, 30, 147  
 Model-based reasoning, 93, 243–244  
 Models of the expert, 6–7, 107–113, 211, 220, 225, 228, 233, 242, 264  
 Models of organizations, 143  
 Motivation, 58, 68, 91–92, 100, 110, 113, 124, 164, 166  
 Multiattribute utility, 37  
 Multidimensional judgment tasks, 26, 34, 61–68  
  
 Narratives, 116, 120–122  
 Nominal Group Technique, 6, 168, 172–173, 177, 184  
 Nonexperts. *See* Experts versus nonexperts  
 Nonmonotonicity/nonlinearity in regression, 7, 65, 230–232  
 Normative models, 2, 26–33, 35, 37, 40, 65, 101, 108–110, 210  
  
 Odds, 59  
 Operations research, 251–252

- Organizational factors in expertise, 134–148, 157, 162, 186, 222, 263
- Outcomes of decisions, 3, 7, 28–32, 37–40, 43, 57, 92–93, 95, 98, 115, 240, 265
- Overconfidence, 34, 38–39, 41, 50–53, 58, 90–93, 100, 158, 160
- Overestimation, 38, 50–53, 62–63, 94, 99
- Pattern recognition, 13, 16, 78
- Peer review, 238
- Perception, 78, 113–114
- Performance versus competence, 33, 34, 40, 101, 112, 139
- POLICY, 186
- Policy capturing, 64, 229
- Politics and the expert, 2, 5, 132, 135, 137, 140, 143–149
- Power in organizations, 2, 5, 129, 131–138
- Predictors in regression, 7, 65, 157, 212, 229, 242
- Preferences between decision outcomes, 30, 57–58, 115, 192
- Probabilistic reasoning, 2, 4, 34, 38, 43, 49–61, 66, 68, 70, 84–102, 109
- Probability, 26, 49–60, 66, 87–88, 95, 108, 110, 118, 120, 176, 258–259
- Probability judgment, 2–4, 34, 38, 43, 49–61, 66, 68, 70, 84–102, 109, 258–259
- Problem solving, 2–4, 13, 33, 77–83, 90, 164, 172–173, 205, 233, 235, 244, 252
- Procedural techniques, 32, 40–42
- Process gain/loss, 6, 164–168, 171–176, 183
- Processes in judgment, 3–4, 13, 25, 29–44, 55–56, 78, 83, 85, 173, 181, 211, 220–224
- Professionalism, 5, 130–148
- Protocol analysis, 13, 205, 215
- Psychological characteristics of experts, 3, 11, 16–18, 20, 58, 60, 66–71
- Psychological plausibility of decision support systems, 69, 211, 219–220
- Quantitative reasoning, 37
- Randomness, 30, 158, 174–175, 181–183, 196–199, 210, 231–232
- Ratio judgments, 59
- Recomposition of probabilities. *See* Decompose-recompose
- Regression models. *See* Linear models
- Reliability of judgment, 2–4, 12, 34, 47–71, 158, 181, 192, 207, 253
- Repertory grid, 205, 213, 215
- Representativeness heuristic, 63, 85, 108
- Revision of probabilities, 58, 66
- Risk assessment, 58, 60, 85, 90, 98, 212–214, 222–224, 257–258
- Rules/rule-based reasoning, 5–7, 17, 114–115, 130, 149, 205–224, 228, 235–246
- Sample size, 31, 231
- Satisfaction of users of decision support, 6, 238, 244
- Satisfying, 165
- Scenario Analysis, 48
- Scenarios, 57, 114, 123, 167, 172–173, 176, 211, 259, 262–264
- Schemas, 80
- Selection of experts. *See* Identification of experts
- Sensitivity analysis, 37, 186, 231, 256
- Significance testing, 89
- Skills, 3, 18, 25, 33, 35, 38, 79, 130–132, 140–148, 157, 185
- Skills, domain-specific versus general, 3, 13, 18, 25, 33–35, 38, 42, 185
- Sports expertise, 13, 15, 17, 30–34, 43, 50–53, 58, 93, 96–97
- Statistical models, 3, 7, 37–38, 52, 63–68, 88, 96, 108, 155–157, 227–233, 240–244, 52, 258–265
- Statistical reasoning, 101–102, 119, 236–245
- Status, 130–131, 162
- STELLA, 187
- Stimulus-response. *See* Behaviorism
- Stories. *See* Narratives
- Strategies, 2–4, 11, 17–20, 30–31, 78–83, 90, 107–113, 119–121, 131, 135, 139–141, 164–166, 173, 214, 220, 235, 237
- Structuralism versus functionalism, 129–138, 140, 145, 148
- Structure-modifying techniques, 3, 40–42
- Subjective expected utility, 26, 37
- Subjectivity, 32–39, 55–56, 59, 61, 124, 129, 135, 138, 143, 157, 160–163, 182, 203, 211, 218, 228, 240, 254, 257, 259, 261–264
- Superadditivity, 49
- SUPERTREE, 69

- Symbolic reasoning, 227–228, 233–240, 243–245
- Systems dynamics, 187–188, 256, 265
- Task variables in expertise, 3–4, 15–16, 32, 34, 40–41, 51–60, 66–71, 82–83, 85, 93, 100, 108–113, 123, 134, 173–175, 181–184, 191–192, 198–199
- Tasks, laboratory versus real world, 2–3, 51–53, 174–175, 177
- Think aloud. *See* Protocol analysis
- Time series, 157, 161, 190–191, 253, 258, 262, 264
- Training, 102, 115–116, 120–121
- Validation of expert systems, 6, 204, 207–210, 238–239
- Validity of expert judgment, 2–5, 12, 18, 34, 47–71, 100, 117, 119, 156, 163, 175, 227, 229, 232
- Value, 30, 112, 143, 209, 222
- Verbal protocols, 13–14, 20, 32. *See also* Protocol analysis
- Weather forecasters, 14–15, 34, 49–53, 93, 111
- Weighting of cues, 26, 37, 38, 61, 64, 99–100, 117, 156, 192, 229–232, 236, 237, 246
- Weighting of opinions, 160–167, 173, 177, 261, 263

