

Index

A

Accuracy, 4, 69–75, 79, 81–84, 90, 92–94, 96–98, 112, 122, 123
Achinstein, P., 2–4, 9, 19, 23–28, 32, 37, 91, 92, 94
Acute rheumatic fever, 57, 58, 78, 82, 96
Acute tubular necrosis (ATN), 60
Adair, F.E., 103, 104
Agent Orange, 47
Anal canal, cancer of, 139–141
Anderson, K.E., 55, 77, 88, 95
Argument
 bad lot, 31
 from indifference, 31
Atheromatous embolism (AE), 60, 74, 96

B

Background knowledge privilege, 31
Bacterial infection, 34, 37
Bartelink, H.F., 141
Bartlett, R.H., 130–132, 134–136
Bayes' theorem, 19, 20, 23, 60, 61, 74, 77–79, 89, 90, 110, 115, 117
Bayesianism, 2, 3, 19–23, 91, 94, 97
Beauchamp, T.L., 133, 138
Berghmans, R., 64
Berksonian bias, 70
Berkson, J., 70, 71
Berry, D.A., 90, 138
Bias
 Berksonian, 70
 information, 45, 54, 69, 81, 123
 obsequiousness, 42
 recall, 94

 selection, 69, 106
Birth control pills (BCPs), 15, 16
Blank, O., 75, 76, 80
Boden, W., 3
Breast, cancer of, 4, 102–108, 115, 117–120
British doctor study, 47, 79, 91, 95
Brown, B. Wm. Jr., 20, 89, 96
Butts, R., 7
Byar, D.P., 113

C

Caldwell, G.G., 70, 112
California class size study, 121
Cancer
 anal canal, 139–141
 breast, 73, 98, 102–108, 112, 117, 119, 121, 122, 124, 141
 lung, 47, 79, 98, 103, 141
 pancreas, 55, 79, 95
 testis, 5
 vagina, 50
Cancer of the anal canal, 5
Cannegieter, S.C., 81
Carnap, R., 13, 25
Cartwright, N., 68
Case-control study, 45–51, 55, 70, 72, 73, 82, 95, 96
Case reports, 4, 50, 62, 63, 98, 102, 124
Case studies, 4, 87, 94–97, 102
Casey, J.D., 56, 78, 81, 91, 96
Checkoway, H., 54
Childbed fever, 30
Childress, J.F., 133, 138
Christensen, D., 14

- Chronic obstructive lung disease, 44, 95
- Cigarette smoking
 and cancer of the pancreas, 79
 and lung cancer, 47, 48, 72, 79, 80, 91, 93
 and myocardial infarction, 48, 72
- Clanton, C.H., 61, 62, 75, 78, 92, 97
- Clavel, F., 55
- Clinical medical science, vii, 1–4, 17, 27, 28,
 32–64, 67, 68, 73, 84, 87–94, 97, 106,
 116, 119–124, 133
- Clinico-pathologic conference, 4, 56, 62
- Cochrane, 73, 75–76, 80, 98
- Coffee drinking
 and pancreatic cancer, 55, 72, 77, 80, 88
- Cohort studies, 44–47, 52, 54, 55, 68, 77, 102,
 112, 123–125
- Complement (CH50), 60
- Confirmation theory
 Bayesian, 60
 Hempel’s “satisfaction”, 10–14
 hypothetico-deductive, 21, 30, 88
 Mayo’s error-statistical, 14–17, 90
- Confounding, 45, 46, 52, 55, 67, 69, 71–73, 77,
 79–83, 88, 91, 93, 95, 111, 112, 114,
 121–123
- Contrastive inference, 30
- Cooley, J.C., 12
- Cope, O., 105, 117
- Coronary artery stenting, 3
- Cowan, D.H., 129, 137
- Cox, D.R., 41
- Cox, E., 90
- Criqui, M.H., 70
- Cross-sectional study, 52–54, 96
- Cummings, B.J., 140
- Cutler, S.J., 118
- D**
- Dajani, A.S., 58, 59
- Daling, J.R., 50
- Darwin, C., 23
- Declaration of Geneva, 133
- Diagnoses, 1, 3, 4, 23, 29, 34–37, 39, 50,
 56–64, 73, 74, 77, 78, 81, 82, 89–94, 96,
 97, 101, 142
- Diagnostic hypotheses, 1, 4, 34, 36, 37, 39, 41,
 56–64, 68, 73, 74, 77, 78, 81, 82, 89, 91,
 92, 96, 97
- Differential diagnosis, 56, 60–62, 74, 75, 77,
 78, 81, 91, 94, 96
- Djulgovic, B., 125
- Doll, R., 44, 47, 79, 91, 95
- Donohue, J., 142, 143
- Duke Criteria, 57, 59, 61, 73, 81, 82, 91, 96
- Durham, S., 131
- Dutch book arguments, 21, 23
- Dworetz, A.R., 137
- E**
- Early Breast Cancer Trialists’ Collaborative
 Group, 119
- Earman, J., 10, 13, 20, 22, 23, 89
- Eddington, A., 23
- Eddy, D.M., 61, 75, 78, 92, 97
- Ederer, F., 118
- Einhorn, L.H., 142, 143
- Einstein, A.
 GTR, 15, 17, 23
- Eliminative induction, 29, 92, 106, 109, 115,
 116
- Elstein, A.S., 60, 63
- Endocarditis, 57–59, 73, 81, 82, 91, 96
- Epstein, M.F., 132
- Error-statistical theory, 14–17, 90
- Etiologic hypotheses, 1, 4, 43–56, 62, 63, 68,
 69, 73, 74, 79, 80, 88, 90, 91, 95, 96
- Evidence
 epistemic-situational, 24
 objective, 10, 24, 27, 32, 37, 68, 78, 91, 143
 objective epistemic, 91, 92
 potential, 24–26, 31, 79, 91, 92, 123
 subjective, 24, 26, 27, 91, 92, 97, 116
 veridical, 24–27
- Evidence-based medicine (EBM), 4, 83, 98,
 101, 106, 120, 121, 123–125, 133, 138
- Expert opinion, 4, 74
- Explanation
 actual, 29
 answer to why-question, 32, 35
 best, 29, 34–37
 correct, 27, 35–37, 90
 likeliest, 30
 loveliest, 30
 possible, 30–32, 36
 theories of, 32, 87
- Explanatory connection, 2–4, 19, 26–28, 91
- Exposure odds ratio, 45, 48, 72
- F**
- Feynman, R., 9, 10
- Field, D., 136
- Fisher, B., 107, 109, 111, 112, 115, 116
- Fisher, R.A., 106

Flam, M., 141
 Freedman, B., 114, 143
 Freireich, E.J., 108–111, 113, 119
 Fried, C., 133, 135
 Fuertes-de la Haba, A., 15
 Functional acute renal failure from dehydration (FARF), 60

G

Gehan, E.A., 108–111, 113, 119
 Gill, C.J., 63
 Glasziou, P., 143
 Glomerulonephritis (GN), 60
 Glymour, C., 2, 3, 10, 23, 68, 89
 Golden, G.T., 139
 Gold standards, 59–61, 73, 74, 78, 89, 90, 94, 96, 119, 133
 Good, I.J., 68
 Goodman, K.W., vii, 133
 Goodman, N., 13, 89
 Gordis, L., 72, 73, 79
 GRADE system, 97, 125
 Graham, E.A., 47, 79
 Greenhalgh, T., 45, 101, 102, 119, 125, 129, 138
 Green, J.P., 139
 Greenland, S., 79, 80
 Green, Sally, 76
 Green, Stephanie, 71, 81, 113
 Guidelines, 43, 73, 90, 98, 110, 114, 121, 144
 Gunderson, L.L., 141
 Gurevitch, J., 84
 Gutensohn, N., 50
 Guyatt, G., 42, 43, 81, 95, 97, 125

H

Hacking, I., 15
 Haenszel, W., 45
 Haffty, B.G., 105, 113, 120
 Halsted, W.S., 103, 108
 Harman, G., 29, 34, 35
 Harvey, A. McGehee, 56
 Hempel, C., 2, 3, 10–13, 24, 30, 89
 Henderson, B.E., 124
 Henley, S.J., 79
 Herbst, A.L., 50, 51, 95
 Hernán, M.A., 71
 Hertz, H., 24
 Hierarchical pyramid, 4, 98, 101–125

Higgins, J.P.T., 76
 Hill, A. B., 47, 79, 138
 Hodgkin's disease (Hodgkin lymphoma) tonsillectomy and, 49, 50, 55
 Hoen, B., 59
 Hollander, M., 20
 Hon, G., 17
 Horsley, J. Shelton III, 139
 Hosmer, D.W., 45
 Howson, C., 14, 20–23, 89, 90, 106, 108–117, 121
 Hypothesis
 catchall, 61
 causal, 37, 121
 diagnostic, 91
 etiologic, 64, 80, 82, 88, 89
 null, 17, 88, 90
 scientific, 7, 22, 23, 37, 63, 64, 89
 statistical, 16, 52, 88, 89, 93, 119, 120, 124, 141
 therapeutic, 56, 80, 88–90, 114
 Hypothetico-deductivism, 2, 7–10, 23, 24, 30

I

Incidence rate ratio, 45
 Infective endocarditis, 57–60, 73, 81, 82, 91, 96
 Inference to the best explanation, 2, 3, 19–38, 87
 Information bias, 71
 Institutional review board (IRB), 135, 136
 International Agency for Research on Cancer (IARC), 55, 73, 76, 77, 95, 98
 Interstitial nephritis (IN), 60
 Ioannidis, J.P.A., 83
 Irrelevant conjunction, 22
 Ischemic heart disease, 44, 45, 48, 95

J

Jacobson, J.A., 107
 Jain, B., 63
 Joffe, S., 143
 Jones criteria, 58, 59, 78, 82, 96, 97
 Jones, T.D., 30, 58, 59

K

Kaplan, E.L., 41
 Kassirer, J.P., 60, 63, 74, 78, 82, 89, 96
 Kelsey, J.L., 52, 53, 96

Kendall, M., 109, 114
 Ketcham, A., 105
 Klemetti, A., 71
 Kuhn, T., 15

L

Ladyman, J., 31
 Lalazar, G., 37
 Lantos, J.D., 136
 Larynx, cancer of, 44, 79
 Lehrer, K., 34
 Lemeshow, S., 45
 Leukemia, 70, 80
 Li, J.S., 59
 Lindblad, A.S., 40, 41, 94, 113
 Lipton, P., 29–31, 34, 35, 37
 Lung, cancer of, 44, 47, 48, 72, 79, 80, 91–93

M

MacMahon, B., 55, 82
 Manson, J.E., 83
 Mantel, N., 45, 118
 Marwick, C., 136
 Mastectomy
 lumpectomy, 107
 modified radical, 107
 partial, 107
 quadrantectomy, 107, 108
 radical, 103–105, 108, 118
 segmental, 107
 total, 107, 119
 traditional, 107
 Mayo, D., 2, 3, 14–17, 63, 68, 83, 90, 92–94,
 113, 118
 McAninch, L.N., 142
 McGlynn, E.A., 133
 Measles, 29, 35–37, 82, 112
 Medical reversals, 3
 Medical sciences, 63
 Meier, P., 41
 Ménétrier's disease, 37, 78
 Meta-analysis, 75, 76, 80, 81, 83, 84, 90, 93, 98,
 119, 120, 125
 Miettinen, O.S., 63
 Miller, F.G., 143
 Morris, J.N., 54
 Mueller, N.E., 49, 50, 80, 95
 Mueller, N.G., 50, 95
 Multivariable model, 52
 Murad, M.H., 125
 Muss, H.B., 118

Mustakallio, S., 103, 104, 117, 120, 124
 Myocardial infarction, 48, 49, 72, 79, 95

N

National Comprehensive Cancer Network
 (NCCN), 73, 98, 114, 121, 144
 National Institutes of Health (NIH), 136
 National Surgical Adjuvant Breast Project
 (NSABP), 107, 115, 116
 Newman, H.K., 139, 141
 Newtonian theory, 17
 Nigro, N.D.
 regimen, 139
 N of 1 study, 4, 42, 62, 63, 92
 Null hypotheses, 15, 17, 88, 89, 111, 117–120,
 131
 Nurses Health Study, 83

O

O'Rourke, K., 80
 O'Rourke, P.P., 132, 134–138
 Obsequiousness bias, 42
 Odds ratios, 45, 48, 55, 72, 73, 79, 119

P

Pancreas, cancer of, 55, 79, 95
 Papineau, D., 112, 116
 Pelligrino, E.D., 133
 Personal care concept, 133
 Physician's Oath, 138
 Pivot, 62, 78, 97
 Platinum standard of evidence, 83
 Pocock, S.J., 132
 Poole, C., 80
 Popper, K., 2, 3, 7–10, 31, 68, 88, 89, 93
 Prasad, V., 3
 Precision, 4, 69, 74, 81, 92, 97
 Probability
 conditional, 60, 61, 78
 distribution, 16, 43, 60, 112, 116, 120
 objective epistemic, 25, 91, 92
 posterior, 20, 21, 60, 74, 89, 91
 prior, 20–22, 60, 89, 91, 109
 unconditional, 20
 Psillos, S., 31

Q

Quan, S.H.Q., 139, 141
 Quasi-syllogisms, 12

R

Raju, N., 138, 139
 Randomization, 4, 41, 69, 80, 83, 90, 94,
 101–125, 132–136, 141
 Randomized controlled trial (RCT), 4, 15, 28,
 40, 68, 69, 80, 83, 88, 92–94, 107–116,
 118–123, 125, 130–133, 135, 136, 138,
 140–144
 Raven paradox, 22
 Recall bias, 71
 Recht, A., 107
 Rectum, cancer of, 40, 138
 Regression analysis, 114
 Relative risks, 45, 48–50, 55, 79–81, 95, 132
 Rheumatic fever, 57, 59, 60, 97
 Rheumatic heart disease, 57, 58
 Richie, J.P., 142
 Risk ratios, 45, 50
 Röntgen, W., 103
 Rothman, K.J., 45, 46, 69–71, 83
 Roush, S., 121, 122
 Royall, R.M., 131, 135

S

Sackett, D.L., 69, 101, 138
 Samuels, M.L., 142
 Satisfaction theory, 23, 89
 Saxén, L., 71
 Schafer, A., 133
 Schapira, D., 137
 Schouten, H.C., 64
 Schwartz, A., 60, 63
 Scientific hypotheses, 10, 15, 88, 89, 94
 Scientific medicine, 63
 Selection bias, 69–71, 111–113
 Self-selection, 70, 112
 Semmelweiss, I., 30, 31
 Shaneyfelt, T., 125
 Sherman, K.S., 51
 Simon, R.M., 117
 Sischy, B., 139, 140
 Slone, D., 48, 79, 95
 Smoky nuclear test, 112
 Sober, E., 20, 21, 23
 Solimano, A., 137
 Sox, H.C., 64
 Spitalier, J.M., 105
 Stampfer, M.J., 83
 Statistical hypotheses, 17, 44, 68, 88–90

Statistical syllogisms, 12

Statistics

Bayesian, 89, 90, 94
 frequentist, 15, 89, 90, 94, 111, 118
 Stegenga, J., 83
 Stilbestrol, 51, 95
 Straus, S.E., 43, 101
 Streptococcal pharyngitis, 34, 36
 Stuart, A., 109, 114
 Syphilis, 30

T

Talbott, W., 21
 Tennessee class size study, 121
 Testis, cancer of, 5
 Thagard, P., 34
 Theophylline, 43, 95
 Therapeutic hypotheses, 1, 4, 27, 28, 39–43, 68,
 73, 75, 79, 81, 83, 94, 133
 Thomas, P.R.M., 40, 41, 94, 113
 Thomson, J.J., 24
 Thun, M.J., 79
 Tonsillectomy, 49, 50, 55, 80, 95
 Toomasian, J.M., 135, 138
 Toulmin, S., 12
 Trials
 controlled, 40, 106–108, 110, 119
 N of 1, 40
 randomized controlled, 3, 129–144
 Truog, R.D., 130, 135–138
 Tsimberidou, A.-M., 143
 Tukey, J.W., 129

U

Ueshima, H., 53, 96, 124
 U.K. Collaborative ECMO Trial Group, 132
 Underdetermination, 29
 Urbach, P., 14, 20–23, 89, 90, 106, 108–117,
 121

V

Vagina, cancer of, 50
 Validity, 4, 10, 46, 47, 69, 74, 80, 81, 92, 93,
 97, 109, 112, 117, 121, 123, 124
 Van Fraassen, B.C., 31–33
 Veronesi, U., 108
 Viral infection, 34, 37, 57, 96

W

Ware, J.H., 132
Weight of evidence
 account, 1, 4, 67–84, 87–98, 143, 144
Wei, L.J., 131
Welton, M.L., 138
Williams, I.G., 103–105, 113, 117, 120, 143
Williams, S.D., 143
Willis, B., 63
Wilson, S.M., 139
World Medical Association, 133, 138
Worrall, J., 108, 111–113, 122, 133

Wung, J.-T., 137

Wyatt, J.K., 142

Wynder, E.L., 47, 79

Y

Yerushalmy, J., 20, 89, 96

Z

Zelen, M., 131, 134