

Index

- abduction, 22, 152, 153
 Abellán. *See* Gascón Abellán
 absence of evidence, 198
 absent witnesses. *See* hearsay evidence; right: to examine witnesses
 absolute truth, 160, 162
 Accatino, Daniela
 view on reasonable doubt, 393
 acceptance, 384–6
 access to lawyer. *See* right: to counsel
 accountability for error
 under adversarial and inquisitorial processes, 80–1
 under China's system, 61–2, 305
See also miscarriages of justice.
 accreditation
 of expert witnesses, 223–31, 302, 340
See also proficiency testing.
 accusatorial system. *See* adversarial process
 ACE-V process, 261, 269, 281, 283–4
 acquaintance. *See* knowledge: by acquaintance and by description
 Action Protocol of the Procedural Common Service, 234
 adaptive systems. *See* complex adaptive systems
 adjudication model, 21
 application
 to admissibility, 25
 to materiality, 21
 to relevance, 23
 in Anglo-American tradition, 28
 in China, 53, 65, 66
 relation to fact finding, 151
 separation from investigation, 74, 78–9
 administrative bodies
 provision of expert opinion, 220–1
- admissibility
 choice of law, 367, 370
 concept, 24–5
 from perspective of complexity theory, 44–5
 judicial discretion, 100
See also hearsay evidence: judicial discretion.
 of expert evidence, 248–92, 311
 test, 20
See also exclusionary rules.
 adversarial process, 72, 74
 challenges to fingerprint evidence, 248–92
 court-appointed expert evidence, 235
 criticism, 84
See also comparative law: criminal evidence debate.
 impartiality of judge, 74
 in civilian systems, 81–2
 in Singapore, 175
 ostensive aspect, 147–8, 154
 reflection of real-life criminal process, 85, 96
 responsibility for error, 80, 103
 separation of functions, 74
 verification of factual inferences, 78
See also fairness: of participation.
 adverse inferences
 from exercise of legal professional privilege, 179
 from silence
 in England, 108
 in Singapore, 171–94
 'affirming the consequent' fallacy, 153
 aggregated evidence, 198–211
 Al-Khawaja and Tahery v. UK (2009), 105, 107, 110, 111, 112–14

- Alexander, Larry
 view on aggregated evidence, 209
- alibis, 44, 45
- Allen, Ronald J.
 educational model of expert opinion, 245,
 309, 312, 317
 theory of evidential reasoning, 174–5
 view
 on complex adaptive systems, 3–4, 36–49
 on inferentialization, 152
 on remuneration of expert witnesses, 242
- amplification
 in group deliberation, 130–1, 132
- analogy, 153
- analytical perspective, 160, 161
- Anderson, Terence
 view on rationalist tradition, 396
- anecdotal evidence
 for wrongful convictions, 327–8
- Anglo-American tradition
 burden of production, 369
 confessions, 28
 evidential literature, 26, 27
 expert evidence, 26, 240
See also common law; England and Wales;
 United States.
- anonymous witness evidence. *See* hearsay evi-
 dence; right: to examine witnesses
- anti-nomian thesis, 26, 47
- APAJCM (Asociación de Peritos colaboradores
 con la Administración de Justicia de la
 Comunidad de Madrid), 229
- apparent presumptions, 407, 408
- Appazov, Artur
 on expert evidence, 217
- appeal decisions
 challenges to fingerprint evidence, 248–92
 ostensive aspect, 146
- appellate judges
 as feedback mechanism, 39, 40
- archives, 29
- argument structure, 46
- argumentation
 as a cooperative practice, 129, 130
- argumentative virtues
 connection with other virtues, 127
 contribution to conflict resolution, 129
examples, 127
- arguments
 relation to inferences, 153–4
 similarity to evidence, 376–7
- Aristotelian syllogisms, 162
- artificial intelligence, 46
- Asch v. Austria (1993), 103, 105
- Asian values, 183
- Asociación de Peritos colaboradores con la
 Administración de Justicia de la
 Comunidad de Madrid (APAJCM), 229
- Asociación Nacional de Grafólogos Peritos
 Calígrafos y Documentólogos
 (GRAPECA)
 members as court-appointed experts, 224
- Association of Experts collaborating with the
 Administration of Justice of the
 Valencian Community
 (APAJCM), 229
- associations
 members as court-appointed experts, 223–31
- assumptions, 76, 79
- audi alteram partem* principle, 72, 74
- Austin, J. L.
 view on perception, 150
- Australia
 fingerprint evidence, 248–92
- autopoiesis, 37
- autoptic preference, 148
- Bachmaier, Lorena
 on expert witnesses, 237
- background assumptions, 76, 79
- Baconian probability, 162
- bad-character rules, 42, 100, 199, 205–7, 208
- balance of probabilities. *See* preponderance
 standard
- Bayes' theorem, 24, 153, 161, 388–9
- Bayón, Juan Carlos
 view on standard of proof, 387, 392
- Beecher-Monas, Erica
 view on scientific evidence, 330
- beliefs, 383–4
 distinction from acceptance, 384–6
- Beltrán. *See* Ferrer Beltrán
- Bennett v. Police (2005), 265–7
- Bentham, Jeremy
 call for free proof system, 147
 categorisation of evidence, 15
 critique of Gilbert's theory, 24
 view
 on field of evidence, 30, 40
 on right of silence, 182, 187
 on rules of evidence, 26, 47
- Berk. *See* de Berk

- best evidence principle, 150
 best explanation theory, 161
 ‘beyond all reasonable doubt’ standard
 in China, 61
 meaning, 199, 387, 392, 399
 relation to severity of penalty, 177,
 404
 See also standard of proof.
- bias
 by experts, 306, 307, 342
 by groups, 131, 132, 133
 overcoming, 77
 See also confirmation bias; contextual bias;
 impartiality; ingroup bias; institutional
 biases; prejudice.
- bite mark analysis, 312
 Blackstonian ratio, 181, 204
 BOPERIT system, 232
 Bradley Thayer. *See* Thayer
- brain
 as complex adaptive system, 37, 38
- Brewer, Scott
 on expert testimony, 145
 on inferentialization, 152
- Brook, James
 view on inference from lack of evidence,
 199
- burden of proof
 choice of law, 361–73
 conceptual differences, 2
 from perspective of complexity theory,
 43, 46–7
 impact on errors, 406–7, 412
 purpose of rules, 397
- burdens of persuasion and production,
 367–72
- C.P.P.F. case, 335
 calculus of probability, 161–2
 Callen, Craig R.
 view on scientific evidence, 317
- Callis v. Gunn (1964), 253
- Canada
 adverse inferences from silence, 179
 wrongful convictions, 336
- Carloway Review
 on adverse inferences from silence, 179
- Cartes Parra (Elías) case, 335
 cascade effects, 131, 132
 cascaded inferences, 152
 case-specific evidence, 145
- Castro. *See* Orellana de Castro
- Catalan Association of Legal and Forensic
 Experts, 228
- Catalonia
 court-appointed experts, 220, 222, 226,
 228, 232
- causation
 in cases concerning toxic torts, 168–9
 probabilistic theory, 205
- cautions
 when taking fingerprints, 93, 253
 See also incomplete cautions.
- CCP. *See* Code of Criminal Procedure
- CCRC (Criminal Cases Review
 Commission), 328
- centrifugal governor
 as complex adaptive system, 38
- certainty. *See* ‘beyond all reasonable doubt’
 standard; forensic science; probability;
 standard of proof; statistical evidence
- CGCOM (Consejo General de Colegios
 Oficiales de Médicos), 229
- chains of inferences, 163–6
 challenge. *See* adversarial process; appeal
 decisions; legal challenges
- Champod, Christophe
 view on scientific evidence, 309, 316
- character evidence, 42, 100, 199, 205–7,
 208
- character traits. *See* character evidence; group-
 deliberative virtues
- child pornography, 209
- Chile
 wrongful convictions, 323–54
- China
 transformation of evidence theories and
 system, 53–68
 wrongful convictions, 336
- Chisholm, Roderick M.
 view on errors of perception, 149
- choice of law
 in relation to burden of proof, 361–73
- Christianity
 benefit of confession, 190
- circumstantial evidence, 164
 distinction from direct evidence, 146
- citizens
 as feedback mechanism, 39
- civil law tradition, 26
- civil liability
 for undue pre-trial detention, 395–423

- Civil Procedure Act (Spain). *See* LEC
- Civil Procedure Rules (CPR)
 on unrepresented parties, 73
- civil standard of proof
 in cases concerning toxic torts, 168–9
- civilian legal systems
 burden of production, 369–70
 contrast with common law model,
 99–100
 expert opinion, 217
 right to examination, 112
 separation of adjudication from
 investigation, 81–2
See also continental European systems.
- CLRC (Criminal Law Revision Committee)
 proposal to restrict right of silence, 180–1,
 182
- CNMC (Comisión Nacional de los Mercados
 y la Competencia)
 decision on fees of expert witnesses, 234
- COAM (Colegio Oficial de Arquitectos de
 Madrid), 229
- Cochrane Collaboration, 30
- Code of Criminal Procedure (Chile)
 on admissibility of expert evidence,
 351
 on freedom of evidence, 350
- Code of Criminal Procedure (Germany)
 on expert reports read in absence of
 expert, 221
- Code of Criminal Procedure (India)
 on adverse inferences from silence, 179
- Code of Criminal Procedure (Singapore)
 on right of silence, 173–4, 186
- Code of Criminal Procedure (Switzerland)
 on right to counsel, 93
 on unlawfully obtained evidence, 86–7
- Código Penal (CP)
 on false witness, 236
- Código Procesal Penal (CPP)
 on admissibility of expert evidence, 351
 on freedom of evidence, 350
- cognition
 as complex adaptive system, 37, 38
- cognitive bias
 by experts, 306, 307, 342
 by groups, 131, 132, 133
 overcoming, 77, 131
See also confirmation bias; impartiality;
 ingroup bias; institutional biases;
 prejudice.
- Cohen, L. Jonathan
 gatecrasher paradox, 145, 200–3
 view
 on acceptance, 384
 on generalisations, 178
- coincident plurality, 243
- Colegio Oficial de Arquitectos de Madrid
 (COAM), 229
- collective decision-making, 125–35
- collective wisdom, 128
- colleges
 members as court-appointed experts, 223–31
- collegiate courts
 virtuous deliberation, 125–35
- Collegiate Medical Organization (OMC),
 229
- Comisión Nacional de los Mercados y la
 Competencia (CNMC)
 decision on fees of expert witnesses, 234
- common-knowledge effect, 131, 132
- common law
 as complex adaptive system, 36, 38–40,
 48
 economic efficiency, 48
 expert opinion, 217, 223
 rules of evidence, 99–101
 impact of European human rights law, 36,
 98–120
See also Anglo-American tradition.
- communicative virtues
 connection with other virtues, 127
 contribution to conflict resolution, 129
examples, 127
- communitarian values. *See* Asian values;
 Confucianism; individual's rights: con-
 trast with communitarian values
- comparative law
 criminal evidence debate, 84, 85, 96
See also adversarial process; inquisitorial
 process.
 theoretical literature, 26
- compensation
 for undue pre-trial detention, 395–423
- complex adaptive systems, 36–49
- complex inferences, 163–6
- complexity science, 36
- composite courts
 virtuous deliberation, 125–35
- composite standard of proof, 200
- concepts. *See* field concepts; legal concepts;
 terminology

- conceptual evidential inferences, 377
- confessions
 benefit, 190
 in Anglo-American tradition, 28
 psychology of witnesses, 27
See also false confessions; involuntary confessions; right: of silence.
- confirmation bias, 75–6, 78, 79
- conflict of laws
 in relation to burden of proof, 361–73
- conflict resolution
 contribution of group-deliberative virtues, 129
 contribution to democratic values, 129–30
- confrontation rights
 as allocation of power to parties, 41
 expert reports read in absence of experts, 221
 rationale for hearsay rule, 42
 regulation by ECtHR, 85
- Confucianism
 application to right of silence, 192–4
- consciousness, 54
See also evidence: public consciousness.
- Consejo General de Colegios Oficiales de Médicos (CGCOM), 229
- consequences, 35, 36
- ‘consider the opposite’ instructions, 134
- Constitution (Spain)
 on compensation for errors, 415
- context
 in which evidence can be shown, 146–7
- contextual bias, 241–2, 301
 in *Mayfield* case, 299
overcoming, 306, 307, 311
- contextualism, 383–4, 402, 405
- continental European systems
 contrast with common law model, 99–100
 expert opinion, 217
 freedom of proof, 86, 96
 right to examination, 112
 separation of adjudication from investigation, 81–2, 84
See also inquisitorial process.
- control of environment, 37, 38
- copies of records, 149
- correspondence theory of truth, 57, 159, 396
- corruption
 evidentiary difficulties, 406
- Cosby (Bill) case, 199
- costs
 of counsel, 92–5
 of expert witnesses, 234–5, 242, 315
 of litigation, 43
- counsel. *See* right: to counsel
- court-appointed experts, 217–45
- CP (Código Penal)
 on false witness, 236
- CPC. *See* Code of Criminal Procedure
- CPP (Código Procesal Penal)
 on admissibility of expert evidence, 351
 on freedom of evidence, 350
- CPR (Civil Procedure Rules)
 on unrepresented parties, 73
- credibility
 of expert witnesses, 217–45, 248–92, 296–318
 of hypotheses, 388
- crime control
 contrast with due process, 180, 181–2, 184–8
- crime laboratories
 deficiencies, 302
See also forensic science; institutional biases.
- crime rate
 contrast between Singapore and New York, 185
- Criminal Cases Review Commission (CCRC), 328
- Criminal Code (Spain)
 on false witness, 236
- criminal evidence law
 regulation by ECtHR, 85, 101
 separation from criminal procedure, 85
- Criminal Justice Act 2003,
 on hearsay evidence, 108, 110
- criminal justice system
 of Singapore, 182
- Criminal Law Revision Committee (CLRC)
 proposal to restrict right of silence, 180–1, 182
- Criminal Practice Directions, 334
- criminal procedure
 separation from law of criminal evidence, 85
- Criminal Procedure Act (Spain)
 on standard of proof, 398, 408–10
- Criminal Procedure Code. *See* Code of Criminal Procedure
- Criminal Procedure Code (Amendment) Act (Singapore), 180–1
- Criminal Procedure Law of the People’s Republic of China
 on relevancy, 63–4, 67
 on standard of proof, 61

- criminal trials. *See* trials
- critical analysis of research, 71–2, 77
- cross-disciplinary co-operation. *See* multi-disciplinary field of evidence
- cross-examination
 in sexual-offence cases, 79–80, 120
See also right: to examine witnesses.
- CSI effect, 297
- Cutler, Brian L.
 view on forensic psychology, 331
- dangerous materials. *See* toxic torts
- Daubert v. Merrell Dow Pharmaceuticals Inc. (1993), 308, 344
- Dawid, Philip, 17–18
- de Berk, Lucia, 314
- de Castro. *See* Orellana de Castro
- de Sousa Santos. *See* Santos
- debate on research, 71–2, 77
- decision making
 basic premises, 159–60
 derivation from inferences, 159–69
 derogation from scientific evidence, 290–2
 from group perspective, 125–35
 judges vs. expert witnesses, 312
 relation to knowledge, 41
 standards, 383–4
See also standard of proof.
 theories, 160–2, 384
See also fact-finding process; judges.
- deduction, 153, 167
See also nomological-deductive inferences.
- defence challenges
 to fingerprint evidence, 257
- deference vs. education concept, 309–18
- deferred ostension, 145, 146
- definition. *See* conceptual evidential inferences; evidence: definition; ostensive definition; terminology
- deliberation. *See* decision making;
 deliberative virtues; group-deliberative virtues
- deliberative virtues
 contribution to group synergy, 126–8
 value, 128–30, 135
- Delphi method, 134
- democratic values, 129–30, 135
- demonstratives, 143
- Dennis, Ian
 view on expert evidence, 330
- description. *See* knowledge: by acquaintance and by description
- detention. *See* pre-trial detention
- Dhanoa v. R (2003), 267
- direct evidence
 distinction from circumstantial evidence, 146
- direct knowledge, 149–50
- direct ostension, 145–6
- directions
 forensic reasoning rules, 100–1
 on fingerprint evidence, 101, 256, 273
See also ‘consider the opposite’ instructions.
- disease. *See* toxic torts
- disputes
 contribution to field of evidence, 28
See also adjudication model; litigation; trials.
- distortions
 in group deliberation, 130–4
- DNA profiling, 297, 311
See also forensic science; source probability error.
- documentary evidence, 29, 149
See also copies of records.
- dogmatism, 134
- domination
 in group deliberation, 131, 132, 133, 135
- doubt. *See* ‘beyond all reasonable doubt’ standard; probability; standard of proof
- Dror, Itiel E.
 demonstration of contextual bias, 241, 301, 307
- due process
 contrast with crime control, 180, 181–2, 184–8
- ECHR (European Convention on Human Rights)
 Article 6, . *See* fair hearing
 challenges to biometrics, 258
- economics
 and law, 34
 consequences of legal origins, 49
 effect of complexity theory, 48
 efficiency of common law, 18, 48
See also London School of Economics.
- ECtHR (European Court of Human Rights)
 regulation of law of evidence, 85, 98–120
- Edmond, Gary
 view on expert evidence, 7, 248–92, 342, 345, 347

- education
 in forensic science, 144, 302, 306, 307, 308, 313–18
 in virtuous group deliberation, 135, 302
See also qualifications.
- egalitarianism
 in context of legal decision-making, 133
- EGLE (European Guide for Legal Expertise), 223, 228, 230, 238
- elections
 as complex adaptive system, 36, 38, 48
- elements of judgment, 376, 377
- empirical evidential inferences, 376, 378–9, 385–6
- empirical fact
 relation to objective existence, 53, 54–7
- enforcement, 42
- ENFSI (European Network of Forensic Science Institutes), 307
- England and Wales
 expert witnesses, 241, 243–4
 fingerprint evidence, 248–92
 jury trials, 87
 legal aid representation, 72
 right of access to lawyer, 104
 right of silence, 108, 180–1, 182
See also Anglo-American tradition; common law.
- EPF (Evidence, Proof and Fact-finding), 14
- epistemic virtues
 connection with other virtues, 127
 contribution to conflict resolution, 129
examples, 126
- epistemological-rationality rules, 380
- epistemology
 contribution of group-deliberative virtues, 131, 132
 evidentialist theory, 402
 purpose of legal engagement with scientific evidence, 290–1
 relation to field of evidence, 41
See also knowledge; legal epistemology; sciences.
- equality of arms
 use of principle by ECtHR, 103, 104, 109
 violation due to cost of expert evidence, 315
- equity
 influence on law of evidence, 42
- Erie R. Co. v. Tompkins (1938), 363, 370
- errors
 distribution of risk, 392, 406–7
 empirical evidence, 325–8
 factors increasing likelihood, 329–54
 minimization through first-hand knowledge, 150
 seriousness, 403–4
 types, 413–14
See also bias; *Mayfield* error; miscarriages of justice; source probability error.
- Etcheverría Martínez (Alonso) case, 335
- ethics. *See* Christianity; Confucianism; Hinduism; moral-political values; moral virtues
- European Convention on Human Rights (ECHR)
 Article 6, . *See* fair hearing
 challenges to biometrics, 258
- European Court of Human Rights (ECtHR)
 regulation of law of evidence, 85, 98–120
- European Guide for Legal Expertise (EGLE), 223, 228, 230, 238
- European Network of Forensic Science Institutes (ENFSI), 307
- evaluation of evidence, 160, 289–90, 313, 375–93
- evidence
absence, 198
analysis, 160, 161
 and proof, 14
 as argument, 376–7
 as information, 151
 as mirror, 57–8
 as multi-disciplinary field, 13–30, 34
 categorisation, 14
 confirmation, 153
 definition, 148, 150–1, 160
 epistemological theory, 402
 evaluation, 160, 289–90, 313, 375–93
 in legal contexts, 13–30
 as complex adaptive system, 43
 as field concept, 14
 complexity of objectives, 41–3
 contribution to society, 43
 levels of study, 1–2
 presentation. *See* forensic science: presentation; ostension thesis
 prohibition on use
 approach of ECtHR, 98–120
 within a continental European system, 86–7, 93, 94, 96
See also admissibility.

- evidence (cont.)
 public consciousness, 14, 297
 quality, 230
 relation
 to knowledge, 30, 40, 402
 See also epistemological theory *above*.
 to truth, 396
 sufficiency, 30, 397–7
 See also standard of proof.
See also aggregated evidence; case-specific evidence; character evidence; circumstantial evidence; direct evidence; documentary evidence; hearsay evidence; identification evidence; statistical evidence.
- Evidence, Proof and Fact-finding (EPF), 14
- evidence science, 34, 35
 future direction, 46, 47
- evidential reasoning
 context, 43
 general theories, 175–7
 inductive nature, 400–2
 legal regulation, 172, 179–80, 195
 literature, 26
 probabilistic nature, 396–7
 World Congress, 1, 2, 3, 26
See also inferential reasoning from evidence.
- evidential remedies, 85–96
- evidentiary practices, 324
- evolution
 as complex adaptive system, 38
- exclusionary rules
 approach of ECtHR, 98–120
 common law model, 99–101
 within a continental European system, 85, 86–7, 96
See also admissibility.
- existence, 54
- expansionist principle, 103
- experience. *See* lessons of experience
- expert evidence
 by court-appointed experts, 217–45
 contribution to wrongful convictions, 330–48
 derogation by decision makers, 290–2
 disagreement, 315
 on fingerprints. *See* fingerprint evidence
 ostensive aspects, 144–5
 types, 217
See also bias: by experts: bias: by experts; forensic science.
- explanation
 for fingerprint evidence, 278
 from perspective of complexity theory, 44–6
 in circumstance of non-disclosure, 161, 177–8
See also best explanation theory.
- fabrication of evidence, 254
- fact
 argumentation, 376–7
 concept, 54–6
 establishment at trial, 41
See also judges.
 interaction between subject and object, 56, 57–8
 relation to law, 27
- fact-finding process
- fact-finding institutions
 facilitation of virtuous deliberation, 134, 135
- fact-finding process, 58–9
 distinction from scientific inquiry, 147
 ostension thesis, 138–55
 purpose, 151
See also decision making; judges.
- fact of evidence theory, 63
- fair hearing
 approach of ECtHR, 98–120
 limitation of right, 95, 101–3
 within adversarial process, 72, 74
See also right: to counsel.
- fairness
 influence on law of evidence, 42
 of participation, 109–11, 118, 119, 120
- fairness as a whole doctrine, 103, 106, 113–18
- false confessions, 254
- false convictions or acquittals. *See* miscarriages of justice
- false positives and negatives, 323
See also errors.
- false witness, 236
- falseness of propositions, 56, 159, 161
- falsification of hypotheses, 153
- Federal Rules of Evidence
 on prior similar acts, 199
 on relevance, 23, 45
 on weight, 24
- feedback mechanisms, 36, 37, 38, 39

- fees
 of counsel, 92–5
 of expert witnesses, 234–5, 242, 315
See also costs: of litigation.
- Fenoll. *See* Nieva Fenoll
- Fernández López, Mercedes
 view on standard of proof, 393
- Ferrer Beltrán, Jordi
 on freedom of proof, 351
 on standard of proof, 8–9, 389–90, 395–423
- field concepts, 14, 19
- field of evidence, 13–30, 34
 complexity of objectives, 42–3
 contribution of legal system to society, 43
- fingerprint evidence
 individualization, 303
 reliability, 248–92, 307
See also forensic science; *Mayfield* error.
- first-hand knowledge, 149–50
- first Restatement of Conflict of Laws (1934), 361, 362
- First World Congress on Evidential Legal Reasoning, 1, 2, 3
- forensic reasoning rules, 100, 107
- forensic science
bias of examiners, 241, 306, 307
 contribution to field of evidence, 14
 presentation, 302, 306, 307
 prestige, 296–8
 shortcomings, 221, 296–318
See also evidence science; expert evidence; fingerprint evidence.
- formal truth theory, 54
- Forst, Brian
 view on systemic error, 325
- forum law
 in relation to burden of proof, 361–73
- foundational validity, 311
- fourth instance doctrine, 102, 113
- France
 court-appointed experts, 223, 226, 235, 241
 evidential literature, 26
- Frank, Jerome
 view on testimony, 144
- Freckelton, Ian
 view on expert evidence, 330
- freedom of proof
 correspondence of empirical evidential inference, 378–9, 385–6, 393
 debate on merits, 84
 limitation, 86, 96, 99, 350–1
 similarity to scientific inquiry, 147
- Frye* criterion, 230
- funding of litigation, 72
- Garnett, Richard
 view on burden of production, 370
- Garrett, Brandon L.
 study of wrongful convictions, 337, 340, 342, 347
- Gascón Abellán, Marina
 view on expert evidence, 296–318, 331
- gatecrasher paradox, 145, 200–3
- general causation
 in cases concerning toxic torts, 168–9
- General Council of Official Colleges of Physicians (CGCOM), 229
- general experience, 15
- generalizations, 59–60, 76, 152, 178, 376
- Germany
 court-appointed experts, 226
 expert reports read in absence of expert, 221
 wrongful convictions, 336
- Gerstein, Robert S.
 view on right of silence, 191
- gestures
 use to present evidence, 142–3
- Gilbert, Sir Jeffrey (Lord Chief Baron of the Exchequer)
 theory of evidence, 24
- Girona
 court-appointed experts, 226
- Global Peace Index (GPI), 48
- Gold, Anthony.
 view on expert evidence, 330
- Goldman, Alvin
 view on purpose of fact finding, 151
- governance
 as objective of law of evidence, 41–2
- governments. *See* elections
- governors (steam engines)
 as complex adaptive system, 38
- GPI (Global Peace Index), 48
- GRAPECA (Asociación Nacional de Grafólogos Peritos Calígrafos y Documentólogos)
 members as court-appointed experts, 224
- Griffith, John
 model of criminal justice system, 192–3

- Gross, Samuel R.
 on expert evidence, 217
 on wrongful convictions, 327
 group-deliberative virtues
 categories, 126–7
 connectedness, 127
 meaning, 126
 prevention of deliberative distortions, 130–4
 relevance to legal epistemology, 125–35
 value, 128–30, 135
 Guerra Thompson, Sandra
 view on institutional biases, 301
 guilt
 late pleas, 258
 prosecution's theory, 175–7
See also standard of proof.
- Haack, Susan
 on forensic evidence, 317, 318, 343
 on standard of proof, 388, 390, 412
 habitual offenders, 207–8
 hair analysis, 338
 Hanson, Norwood Russell
 view on observation, 57
 Harbermas, Jürgen
 view on fact, 55
 Harel, Alon
 view on aggregated evidence, 209
 Hart, H. L. A.
 view on decision-making criteria, 399
 Hayek, Friedrich A.
 contribution to complexity science, 37, 38
 hearsay evidence
 judicial discretion, 100, 108, 109, 112
See also right: to examine witnesses.
 rationale for exclusion, 42, 100, 105–6, 149–50
 under adjudication model, 25
 Hempel, Carl G.
 deductive-nomological model, 167
 Hinduism
 benefit of confession, 190
 Hirschberg, Max
 view on wrongful convictions, 336
 historical research
 distinction from fact finding, 147
 verification, 71–2, 77
 history
 contribution by legal records, 29
 contribution to field of evidence, 17
- Hobbes, Thomas
 view on right of silence, 191
 holistic perspective, 161
 Holmes (Sherlock) model, 22
 homogenization
 in group deliberation, 131, 132
 horizontal choice of law, 364
 Hossenfelder, Sabine
 view on sciences, 35
 House of Commons Science and Technology Committee
 report on wrongful convictions (2005), 333
 human brain
 as complex adaptive system, 37, 38
 human flourishing
 contribution of complex adaptive systems, 48
See also Confucianism; social welfare.
 human rights. *See* confrontation rights;
 European Convention on Human Rights; European Court of Human Rights; fair hearing; individual's rights; letters of rights; *Trial Observation Project*; United Nations Human Rights Committee; United Nations Human Rights Council
 humility
 in context of legal decision-making, 133
 Hunter, Iván
 view on standard of proof, 405
 Huygens, Christian
 regulator, 38
 hypotheses
 as element of argument, 376
 falsification, 153
 under total process model, 20–2
- IAES (International Association of Evidence Science), 34
 IAFIS (Integrated Automated Fingerprints Identification System), 298
 Ibrahim and others v. UK (2015), 115–17, 119–20
 identification evidence, 28
 psychology of witnesses, 27
 reliance upon fingerprints, 252–3
 identity
 relation to ostension, 140–1
 IEP (Institute for Economics and Peace)
 Global Peace Index (GPI), 48
 ILAC (International Laboratory Accreditation Cooperation), 340

- Illmer, Martin
 view on procedural neutrality, 367
- illocutionary force, 386
- imaginative reasoning, 22
- immune system
 as complex adaptive system, 36, 37, 38
- impartiality
 of expert witnesses, 217–45
 through ‘consider the opposite’
 instructions, 134
 through pursuance of absolute certainty, 61
 under adversarial and inquisitorial
 processes, 61, 74, 78–9, 86
See also bias.
- incomplete cautions, 93, 95
- incriminating statements
 made without access to lawyer, 109
 obtained in defiance of will of accused,
 109
 approach of ECtHR, 104
 in Singapore, 173
See also interrogation; privilege: against
 self-incrimination; right: of silence;
 right: to counsel.
- indexicality, 142–6
- India
 adverse inferences from silence, 179
- individual’s rights
 contrast with communitarian values, 180,
 183, 184–8, 190–2
- individualization, 302–3, 310
- inductive probability, 382
- inference thesis, 138, 150–4
- inferences
 built on generalizations, 59–60, 76, 152
 complexity, 163–6
 derivation of decisions, 159–69
 from exercise of legal professional
 privilege, 179
 from *lack of evidence*, 198
 from silence of accused
 in England, 108
 in Singapore, 171–94
 structure, 376–7
 verification, 71, 72, 78, 162
See also propositions; statements.
- inferential errors, 413–14
- inferential model, 162–3
- inferential reasoning from evidence, 13–14
 models, 14, 162–6
See also fact-finding process.
- information
 gathering, 160
 in criminal proceedings, 92–5
 in litigation, 15
 processing. *See* feedback mechanisms
See also evidence: as information;
 knowledge.
- informational self-silencing, 131, 132
- ingroup bias, 76, 78
- innocence. *See* Innocence Network;
 Innocence Project; miscarriages of
 justice; presumption of innocence
- Innocence Network, 324
- Innocence Project, 304, 324, 327, 332
- inquisitorial process, 73, 84
 contrast with civilian systems, 81–2
 criticism, 84
See also comparative law: criminal evidence
 debate.
- impartiality of judge, 74, 78–9
- lack of ostensive acts, 147, 154
- reflection of real-life criminal process, 85,
 96
- responsibility for error, 80–1, 84
See also continental European systems.
- Institute for Economics and Peace (IEP)
 Global Peace Index (GPI), 48
- institutional biases, 221, 301–2
- institutional design
 facilitation of virtuous deliberation, 134,
 135
- institutional role of judges, 312
- institutions
 provision of expert opinion, 220–1
- instructions. *See* ‘consider the opposite’
 instructions; directions
- Integrated Automated Fingerprints
 Identification System (IAFIS), 298
- inter-disciplinary communication. *See*
 multi-disciplinary field of evidence
- International Association of Evidence Science
 (IAES), 34
- International Laboratory Accreditation
 Cooperation (ILAC), 340
- interrogation
 in Anglo-American tradition, 28
 psychology of witnesses, 27
See also right: to counsel.
- investigation
 separation from adjudication, 74,
 78–9

- involuntary confessions, 109
 approach of ECtHR, 104
 in Singapore, 173
- IRA bombings
 Runciman Royal Commission, 259
- irrebuttable presumptions, 407
- ius tantum* presumptions, 397
- Jackson, John
 on regulation by ECtHR, 4, 98–120
 on scientific evidence, 317
- Jin Yuelin
 view on fact, 54
- Johnson, Neil
 contribution to complexity science, 36
- JP v. DPP (2015), 269–71
- judges
 accountability for error
 under adversarial and inquisitorial
 processes, 80–1
 under China's system, 61–2
See also miscarriages of justice.
 as ultimate guardians of fairness, 96
 bias. *See* assumptions; bias; generalizations;
 subjectivity
 control over expert opinion, 240–1, 344
 directions
 forensic reasoning rules, 100–1
 on fingerprint evidence, 101, 256, 272–4
See also 'consider the opposite'
 instructions.
 discretion, 100
See also hearsay evidence: judicial
 discretion.
 impartiality
 before expert witnesses, 235
 through pursuance of absolute
 certainty, 61
 under adversarial and inquisitorial
 processes, 74, 78–9
 institutional role, 312
 managerial role, 74
 opinions
 ostensive aspect, 146
 preference for court-appointed experts, 233
 scrutiny of expert opinion, 309–13
 understanding of expert opinion, 244,
 313–18, 345–7
 view on automation of expert selection, 62,
 232
See also appellate judges.
- judgment. *See* decision making; elements of
 judgment; judges; rules: of reasoned
 judgment
- judicial error. *See* errors
- judicial evidence, 28
- junk science, 313, 337
- juridical proof. *See* proof
- juries
 evaluation of evidence, 160, 291, 313
 virtuous deliberation, 101, 125–35
See also directions.
- jury trials, 87
- Kaplow, Louis
 view on burden of proof, 43
- Keynesian weight, 46–7, 371, 411
- Khan v. United Kingdom (2000), 85
- knowledge
 about objective existence and empirical
 fact, 54–6
 by acquaintance and by description,
 141–2, 149
 interaction between subject and object,
 56, 57–8
 of quality of evidence, 230
 probabilistic account, 201
 relation to evidence, 30, 40
See also epistemology; information;
 sciences.
- laboratories
 deficiencies, 302
See also forensic science; institutional
 biases.
- lack of evidence, 198
- Laplace, Pierre Simon, Marquis de
 view on standard of proof, 405
- Larraín case, 343
- late pleas, 258
- latent fingerprint evidence. *See* fingerprint
 evidence
- Laudan, Larry
 on Blackstonian ratio, 204
 on standard of proof, 386, 387, 390, 400,
 408, 412
- law
 and economics, 34
 contribution to field of evidence, 13–30
 enforcement, 42
 of evidence
 as complex adaptive system, 43

- as field concept, 14
 - common law model, 99–101
 - complexity of objectives, 41–3
 - contribution to society, 43
 - regulation by ECtHR, 85, 98–120
 - separation from criminal procedure, 85
- relation
 - to complexity theory, 49
 - to fact, 27, 30
 - See also* comparative law; rules.
- Law Commission
 - reports on expert evidence, 316, 317, 333–5, 337
- Law Society of Singapore *v.* Tan Guat Neo Phyllis (2008), 187
- LEC (Ley de Enjuiciamiento Civil)
 - on admissibility of parties' own expert witnesses, 218
 - on challenges to experts' fees, 234
 - on contact between party and expert, 240
 - on impartiality of expert, 220
 - on lists of experts, 223, 225, 232
 - on parties' request for judge to appoint expert, 219
- LECr (Ley de Enjuiciamiento Criminal)
 - on standard of proof, 398, 408–10
- legal aid representation
 - in England and Wales, 72
 - in Switzerland, 88–9, 92–5
- legal assistance. *See* legal aid representation; right: to counsel
- legal challenges, 249
- See also* adversarial process.
- legal concepts
 - transference to other disciplines, 19–20, 20
- legal decision-making. *See* decision making
- legal education
 - in virtuous group deliberation, 135
- legal epistemology
 - contribution to democratic values, 129, 135
 - relevance of group-deliberative virtues, 125–35
- legal evaluation of evidence, 377, 378, 385–6, 393
- legal fact, 54
- legal institutions
 - facilitation of virtuous deliberation, 134, 135
 - meaning, 35
- legal origins
 - economic consequences, 49
- legal probabilism, 388
- legal professional privilege
 - adverse inferences, 179
- legal reasoning, 26
- See also* inferential reasoning from evidence.
- legal records, 29, 149
 - See also* copies of records.
- legal science, 34
- legal systems
 - social welfare objective, 43, 48
 - See also* civilian legal systems; common law.
- legislatures
 - as feedback mechanism, 39, 40
- lessons of experience, 376, 381
- letters of rights, 95
- Levy *v.* Steiger (1919), 362
- Ley de Enjuiciamiento Civil. *See* LEC
- Ley de Enjuiciamiento Criminal (LECr)
 - on standard of proof, 398, 408–10
- Ley Orgánica del Poder Judicial (LOPJ)
 - on compensation for undue pre-trial detention, 415, 420
- liability
 - for expert opinion, 236
 - for undue pre-trial detention, 395–423
- liberal individualism. *See* individual's rights
- lifelong accountability, 62
- line ups. *See* identification evidence
- linear chains of inferences, 163–6
- linear models. *See* total process model
- LIPs (litigants in person)
 - access to justice, 72–4, 82
 - redress under inquisitorial process, 81
- lists of expert witnesses, 217–45
- litigants in person (LIPs)
 - access to justice, 72–4, 82
 - redress under inquisitorial process, 81
- litigation
 - complexity of objectives, 43
 - funding, 72
 - in civilian systems, 81–2
 - optimal level, 43
 - See also* adjudication model; disputes; information: in litigation; trials.
- Llewellyn, Karl
 - view on conflict, 28
- Lluch, Abel
 - view on court-appointed experts, 240
- Locke, John
 - on copies of records, 149
 - on original truth, 149

- logic
 contribution to field of evidence, 15, 23, 99–100
- logical positivists
 use of ostensive definition, 139
- logical probability, 162
- London School of Economics (LSE)
 evidence project, 18
- López. *See* Fernández López
- LOPJ (*Ley Orgánica del Poder Judicial*)
on compensation for undue pre-trial detention, 415, 420
- Lowey, Arnold H.
 view on reasonable doubt, 399
- LSE (London School of Economics)
 evidence project, 18
- Luhmann, Niklas
 contribution to complexity science, 37
- Maitland, F. W.
 view on legal documents, 29
- Mamani. *See* Vasquez Mamani
- margin of appreciation doctrine, 102
- market-share liability, 202
- markets
 as complex adaptive system, 36, 38, 48
- Martinez. *See* Etcheverría Martinez
- materiality
 concept, 20–2
 test, 20
- mathematics
 dependence of sciences, 35
- Matrimonial and Family Proceedings Act 1984,
 on cross-examination, 79
- Maturana, Humberto
 contribution to complexity science, 37
- Mauet, Thomas A.
 view on expert evidence, 330
- maximal individualization, 150
- maximal proximity, 148–50
- maxims of experience, 376, 381
- Mayfield* error, 298–9
- Mead, George Herbert
 view on ostension, 142
- medicaments. *See* toxic torts
- Melendez-Díaz v. Massachusetts (2009), 221
- memory, 149
- Mendonca, Daniel
 view on presumption of innocence, 397
- mind
 as complex adaptive system, 37, 38
 mind control, 205
- minimum rights, 103
- minor offences
 wrongful convictions, 326–7
- Misak, C. J.
 view on scientific expertise, 144
- miscarriages of justice
 due to faulty forensic evidence, 304–5
 empirical evidence, 325–8
 factors increasing likelihood, 329–54
 following IRA bombings, 259
 from perspective of complexity theory, 43
 relation to standard of proof, 405
 under adversarial and inquisitorial
 processes, 80–1
 zero tolerance, 61–2, 204
See also bias; Blackstonian ratio; errors.
- misdeemeanours, 326–7
- misleading cautions, 93
- mistakes at trial. *See* bias; errors; miscarriages
 of justice
- Mitchell, Melanie
 contribution to complexity science, 36
- Mnookin, Jennifer L.
 view on forensic evidence, 305, 306
- moral-political values
 in group deliberation, 128, 129–30
 in improvement of forensic evidence, 305
- moral virtues
 connection with other virtues, 127
 contribution to conflict resolution, 129
examples, 126, 194
See also Christianity; Confucianism;
 Hinduism.
- multi-disciplinary field of evidence, 13–30, 34
- multi-member courts
 virtuous deliberation, 125–35
- naked statistical evidence, 166–7, 201
- names
 indexicality, 143
- Nance, Dale A.
 view on burden of proof, 8, 46–7, 361–73
- NAS (National Academy of Sciences) report
 on forensic science (2009)
 on controls of legal system, 347
 on deficiencies in forensic science, 300–4,
 337–8
 on expert reports, 316
 on lack of standardized terminology, 306
 on lack of understanding, 313
 on law schools, 316

- National Association of Graphologists,
 Handwriting Experts and
 Documentologists (GRAPECA)
 members as court-appointed experts, 224
- National Commission on Markets and
 Competition (CNMC)
 decision on fees of expert witnesses, 234
- National Registry of Exonerations (NRE), 328
- national sovereignty, 183, 188
- natural selection
 as complex adaptive system, 38
- Neufeld, Peter J.
 study of wrongful convictions, 340, 342, 347
- neutrality, 366
- New York
 crime rate, 185
- New Zealand
 fingerprint evidence, 34, 248–92
- Nian Bin case, 59–60
- Nieva Fenoll, Jordi
 view on court-appointed experts, 227, 242
- nomological-deductive inferences, 167
- non-attendance of witnesses. *See* hearsay evidence; right: to examine witnesses
- non-disclosure. *See* silence
- non-occurrence of acts, 198
- non-persuasion risk, 367–9
- non-specified wrongs, 198–211
- non-volitional prejudices, 133, 134
- normative evidential inferences, 377, 378, 385–6
- normic support, 177–8
- Norway
 compensation for undue pre-trial
 detention, 419
- NRE (National Registry of Exonerations), 328
- objective existence
 relation to empirical fact, 53, 54–7
- objective fact, 54
- objectivity
 as basic principle of China's evidence
 system, 62–7
 lack of test, 56
 meaning, 387
 of statistical data, 297
- observation, 57
- occupational security, 62
- Official College of Architects of Madrid
 (COAM), 229
- Official Colleges of Physicians, 228, 229
- Oh Laye Koh v. PP (1994), 176–7
- OMC (Organización Médica Colegial), 229
- open-mindedness, 133, 134
- Operation Hurricane case, 343–4
- opinions
 ostensive aspect, 146
- Oral Trial Preparation Hearings (OTPHs),
 349, 352, 353
- Orellana de Castro, Rafael
 view on court-appointed experts, 240
- Organic Statute of the Judiciary (LOPJ)
*on compensation for undue pre-trial
 detention*, 415, 420
- Organización Médica Colegial (OMC), 229
- organization of trials, 41
- organizations
 members as court-appointed experts, 223–31
- original truth, 149
- origins of states. *See* legal origins
- Ormazábal Sánchez, Guillermo
 view on standard of proof, 405
- ostension thesis, 138–55
- ostensive definition, 139–41
- OTPHs (Oral Trial Preparation Hearings),
 349, 352, 353
- outcomes at trial, 42, 43, 44
- overall fairness. *See* fairness as a whole doctrine
- overcorrection, 76, 78
- palm prints, 253
- Pardo, Michael S.
 theory of evidential reasoning, 174–5
- Parra. *See* Cartes Parra
- partiality. *See* impartiality
- participation. *See* fairness: of participation
- Pascalian probability, 161–2
- See also* Bayes' theorem.
- past-acts evidence, 42, 100, 199, 205–7,
 208
- PCAST (President's Council of Advisors on
 Science and Technology) report on
 forensic science (2016)
 on experience of forensic experts, 285
 on improvements required, 308
 on judicial training, 316
 on validation of forensic evidence, 283
 on validity as applied, 284, 311
- Peirce, Charles Sanders
 view on indexicals, 143, 146
- penultimate *probandum*
 in relation to materiality, 20
 in relation to relevance, 23

- perception, 149, 150
 persuasion burden, 367–9
 photogrammetry, 311
 physicians
 as court-appointed experts, 228, 229
 physics
 preoccupation with mathematics, 35
 plausibility, 45–6
 pointing. *See* ostension thesis
 polarization
 in group deliberation, 131
 police misconduct, 254
 police questioning. *See* interrogation; right: of
 silence; right: to counsel
 police regulation, 42
 political values
 in group deliberation, 128, 129–30, 135
 in improvement of forensic evidence, 180, 305
 See also crime control.
 Popper, Karl R.
 on hypothesis falsification, 153
 on truth, 57
 Porat, Ariel
 view on aggregated evidence, 209
 pornography. *See* child pornography
 positive law, 34
 Posner, Richard
 interpretation of statistical data, 314
 PP v. Law Aik Meng (2007), 188
 practical values, 128, 129
 contribution to democratic values, 129–30
 Practice Statement (Judicial Precedent) (1994)
 (Singapore)
 on criminal justice system, 188
 pre-trial detention, 395–423
 prediction, 35, 36
 prejudice, 24, 42
See also bias; non-volitional prejudices.
 premises, 376
 preparatory acts, 205–6
 preponderance standard, 200, 407
 presentation of evidence. *See* forensic science:
 presentation; ostension thesis
 President's Council of Advisors on Science and
 Technology. *See* PCAST
 presumption
 of innocence
 leading to wrongful acquittal, 61, 66
 relation to standard of proof, 395–423
 rules, 377
 types, 407–8
 principles. *See* best evidence principle; coin-
 cident plurality; equality of arms;
 expansionist principle; fair hearing;
 maximal individualization; maximal
 proximity; rule of law principle
 prints. *See* fingerprint evidence
 prior acts, 42, 100, 199, 205–7, 208
 private associations
 members as court-appointed experts, 224
 private international law
 in relation to burden of proof, 361–73
 privilege
 against self-incrimination
 approach of ECtHR, 103, 105, 109
 as element of right of silence, 172
 recognition, 171
 relation to power to draw adverse
 inferences, 178–9
 social objective, 41
 See also right.
 probabilistic causation, 205
 probabilistic knowledge, 201
 probability, 24, 45, 60–2
See also Bayes' theorem; evidential reasoning:
 probabilistic nature; inductive prob-
 ability; legal probabilism; logical prob-
 ability; source probability error;
 standard of proof; statistical evidence.
 probanda
 in relation to materiality, 20
 in relation to relevance, 23
 probative force. *See* reliability; silence: proba-
 tive value; weight
 procedural rights violations
 evidential remedies, 85–96
 procedure/substance distinction, 361–73
 production burden, 367, 369–72
 professional colleges
 members as court-appointed experts, 223–31
 professional security, 62
 proficiency testing
 of forensic examiners, 302, 306, 307, 308
 See also accreditation; qualifications.
 prohibition on use of evidence
 approach of ECtHR, 98–120
 within a continental European system, 86–7,
 93, 94, 96
 See also admissibility.
 proof
 burden. *See* burden of proof
 concept, 376

- evaluation, 381, 394
See also standard of proof.
- freedom
 correspondence of empirical evidential
 inference, 378–9, 385–6, 393
 debate on merits, 84
 limitation, 86, 96, 99, 350–1
 similarity to scientific inquiry, 147
 general theories, 174–5
 of causation
 in cases concerning toxic torts, 168–9
 ostension thesis, 138–55
 rationalist tradition, 396–7, 402
 standard. *See* standard of proof
- propensity evidence, 42, 100, 199, 205–7, 208
- proper names
 indexicality, 143
- propositions, 56, 159
- See also* statements.
- prosecutor's fallacy, 314
- Protocolo de Actuación del Servicio Común
 Procesal, 234
- proximity. *See* maximal proximity
- psychology
 contribution to field of evidence, 15,
 27
 story model, 46, 338
- public consciousness of evidence, 297
- public debate on research, 71–2, 77
- public experts, 220–1
- public interest
 balance with fair trial rights, 116–17,
 120
- public policy
 as objective of law of evidence, 41–2
 effect of complexity theory, 48
- Puig Panella v. Spain (2006), 418
- Putnam, Hilary
 view on indexicals, 143
- Q v. Q (2014), 79–80
- qualifications
 of court-appointed experts, 223–31, 238–9,
 302
 See also education; proficiency testing.
- quality of evidence, 230
- questioning of suspects. *See* interrogation;
 right: to counsel
- Quine, W. V.
 distinction between direct and deferred
 ostension, 145
- view
 on naturalised epistemology, 381
 on ostensive definition, 140
- R v. Atkinson (1988), 255
 R v. Bacon (1915), 252
 R v. Bain (2004), 276–8
 R v. Blacker (1910), 263, 266, 289
 R v. Buckley (1999), 258, 260–1
 R v. Buisson (1990), 279–80
 R v. Carter (2005), 280–1
 R v. Castleton (1909), 251–2
 R v. Clancy (1905), 272
 R v. Davis (2008), 107–8
 R v. Fratson (1931), 256–7
 R v. Gunn (1920), 273–4
 R v. Horncastle (2009), 106, 110–11, 112
 R v. Howell and Howell (2001), 255
 R v. Howes (1964), 257
 R v. Humphries (2006), 255
 R v. JP (2015), 269–71
 R v. Krausch (1913), 273
 R v. Lang (2001), 258
 R v. Magee (2011), 258
 R v. Martin and others (2000), 254–5
 R v. Mason (1988), 254
 R v. McNamee (1998), 258–60
 R v. Moore (1999), 278
 R v. Murray (1996), 108
 R v. Nguyen (2018), 269, 271
 R v. O'Brien (1967), 257
 R v. Parker (1912), 263–5
 R v. Rhodes (2014), 254
 R v. Samuels (1985), 274
 R v. Skinner (1994), 256
 R v. Smith (2011), 258, 261–2
 R v. Smith (2015), 206
 R v. Tottenham Justices, ex parte ML
 (1986), 253
 R v. Tuporo (2006), 278
- rational reasoning, 159, 160, 289–90
See also Bayes' theorem
- rationalist tradition, 396–7, 402
- realtors
 as court-appointed experts, 225, 226
- reasonable doubt. *See* 'beyond all reasonable
 doubt' standard
- reasoned-judgment rules, 378–81
- reasoning
 about questions of fact, 27
 from, to, and about, evidence, 153

- reasoning (cont.)
 rationality, 159, 160, 289–90
See also Bayes' theorem.
See also inferential reasoning from evidence.
- rebuttable presumptions, 397
- records
 contribution to history, 29
 copies, 149
- reflection, 133–4
- regulators (steam engines)
 as complex adaptive system, 38
- regulatory intrusion, 40
- Reis, George
 view on photogrammetry, 311
- relative plausibility, 45–6
- relative truth*, 160, 161, 162, 396
- relevance
 as basic principle of China's evidence
 system, 62–7
 concept, 22–4
 from perspective of complexity theory, 44
 test, 20, 56
- relevant context, 146–7
- reliability
 of expert evidence, 217–45, 248–92, 296–318
 sole or decisive rule, 98–120
- replication method of verification, 71, 77
- reports. *See* expert evidence; Law
 Commission: reports on expert evi-
 dence; NAS report on forensic science;
 PCAST report on forensic science
- Rescher, Nicholas
 view on ostensive definition, 139
- Research Project on the Provisions of
 Procedural Evidence, A (2011), 67
- responsive systems. *See* complex adaptive
 systems
- Restatement (first) of Conflict of Laws (1934),
 361, 362
- Restatement (second) of Conflict of Laws
 (1971), 364–5, 367–8, 369, 371, 372
- retrials, 62
- Rice v. Connolly (1966), 189
- Ridley, Matt
 view on common law, 39
- right
 of silence
 in England, 108, 180–1
 in Singapore, 171–94
 meaning, 172–3
 recognition, 171
 to counsel, 88–95, 104
 approach of ECtHR, 98–120
 to examine witnesses
 sole or decisive rule, 85, 98–120
See also cross-examination.
See also confrontation rights; European
 Convention on Human Rights;
 European Court of Human Rights; fair
 hearing; *Trial Observation Project*;
 United Nations Human Rights
 Council.
- Ringvold v. Norway (2003), 421
- Risinger, D. Michael
 analysis of wrongful convictions, 326
- risk of non-persuasion, 367–9
- Ristroph, Alice
 view on individual's rights, 191–2
- Roberts, Jenny M.
 view on wrongful convictions, 327
- Rome Statute of the International Criminal
 Court
 on adverse inferences from silence, 179
- Roxin, Claus
 view on expert evidence, 330
 view on standard of proof, 405
- Royal Commission on Criminal Justice,
 259
- Ruhl, J. B.
 contribution to complexity theory, 48,
 49
- rule of law principle, 71, 312
- rules
 of epistemological rationality, 380
 of presumption, 377
 of reasoned judgment, 378–81
 role in decision making, 159
 static nature, 40, 47
See also anti-nomian thesis; law.
- Runciman Royal Commission on Criminal
 Justice, 259
- Russell, Bertrand
 view on knowledge of things, 141
- Russia
 court-appointed experts, 226
- Saavedra (Rodrigo) case, 335–6
- Salduz* doctrine. *See* right: to counsel
- Sánchez. *See* Ormazábal Sánchez
 sanctioning
 for non-specified wrongs, 198–211
- Sanders Peirce. *See* Peirce

- Santos, Boaventura de Sousa
 map of structural-agency contexts, 13
- Saunders, Justice
 view on forensic evidence, 290
- Schtschaschwili v. Germany (2015), 114, 115, 119
- Schenk v. Switzerland (1988), 85
- Schum, David, 16–17, 34
 view on rationalist tradition, 396
- sciences
 development, 35
 meaning of science, 35
See also complexity science; epistemology; evidence science; forensic science; knowledge; legal science; social sciences.
- scientific evidence, 15
- scientific expertise
 derogation by decision makers, 290–2
 ostensive aspects, 144–5
- scientific inquiry
 distinction from fact finding, 147
- Scientific Working Group on Friction Ridge Analysis, Study and Technology (SWGFAST), 281
- Scotland
 adverse inferences from silence, 179
 right of access to lawyer, 104
- second Restatement of Conflict of Laws (1971), 364–5, 367–8, 369, 371, 372
- seeing, 57
- seeking of truth from fact, 58
- self-incrimination. *See* incriminating statements; privilege: against self-incrimination
- self-silencing, 131
- separation of functions, 74, 78–9
- Sernack v. McTavish (1971), 267
- Seton v. UK (2016), 114–15
- settlement, 41
- sexual offences
 aggregated evidence, 211
 cross-examination, 79–80
 evidence of prior similar acts, 199
 evolution of definition, 405–6
 supporting evidence, 198
- Shen Deyong
 view on wrongful convictions and acquittals, 61
- Sherlock Holmes model, 22
- showing. *See* ostension thesis
- Shu Weiguang
 view on truth, 57
- Sidgwick, Alfred
 view on fact-finding process, 59
- silence
 probative value, 174–8
 right
 in England, 108, 180–1
 in Singapore, 171–94
 meaning, 172–3
 recognition, 131, 171
See also self-silencing.
- Simeonovi v. Bulgaria (2017), 116
- Simon, Dan
 view on wrongful convictions, 329
- Singapore
 right of silence, 171–94
- Skuse (Dr Frank) case, 342
- Smith, Martin
 notion of normic support, 177–8
- SNSF (Swiss National Science Foundation)
Trial Observation Project, 86
- social integration
 facilitation of virtuous deliberation, 130, 134
- social policy
 as objective of law of evidence, 41–2
 effect of complexity theory, 48
- social sciences
 contribution to field of evidence, 27
See also psychology.
- social self-silencing, 131, 132
- social welfare
 contribution by legal system, 43
See also human flourishing.
- sole or decisive rule, 98–120
- Soler. *See* Viguier Soler
- solicitors' records, 29
- source probability error, 297, 314
- Sousa Santos. *See* Santos
- sovereignty, 183, 188
- Spain
 court-appointed experts, 217–45
 evidential literature, 26
 standards of proof, 408–10
 vision of forensic science, 292, 296
See also Constitution (Spain); Criminal Procedure Act (Spain); Organic Statute of the Judiciary.
- Spanish-speaking countries' tradition, 3
- spatiotemporal coordinates, 146–7

- specialities of expert witnesses, 226, 232
 specific causation
 in cases concerning toxic torts, 168–9
 specification of crimes, 198–211
 standard of proof
 distinction from other standards of
 decision, 21
 for non-specified wrongs, 198–211
 for toxic torts, 168–9
 formulation, 375–93, 395–423
 in Singapore, 175–7
 in Spain, 408–10
 necessity, 396–7
 probability, 60–2
 relation
 to burden of persuasion, 368
 to inferential errors, 413–14
 to miscarriages of justice, 405
 to presumption of innocence, 211, 395–423
 See also probability; statistical evidence.
- State liability
 for undue pre-trial detention, 395–423
- statements
 logic of connections, 162
 role in decision making, 150, 159
 See also propositions.
- statistical evidence,
 for non-specified wrongs, 198–211
 for toxic torts, 166–8
 for wrongful convictions, 326–7
 objectivity, 297
 ostensive aspect, 145
 understanding, 211, 314, 317
 See also probability; standard of proof.
- status crimes, 207–8
- statutory intrusion, 40
- Stavropoulos v. Greece (2017), 422
- Stein, Alex
 principle of maximal individualization,
 150
 view on evidential weight, 412
- Stella, Federico
 view on expert evidence, 330
- Steyn, Lord Justice
 view on forensic evidence, 292
- story model, 46, 338
- StPO (Strafprozeßordnung)
 on expert reports read in absence of
 expert, 221
- strength of evidence. *See* weight
stricto sensu presumptions, 407–8
- structural remedies
 facilitation of virtuous deliberation, 134, 135
- structure of trials, 41
- subject development, 35
- subjectivity
 in an adversarial process, 78, 79
 influence of background assumptions,
 76
 interaction between subject and object,
 56, 57–8
 meaning, 387
 of statistical data, 297
 overcoming, 77, 403
- substance blind approach, 16
- substance/procedure distinction, 361–73
- sufficiency of evidence, 367, 369–72
- summings up. *See* directions
- SWGFAST (Scientific Working Group on
 Friction Ridge Analysis, Study and
 Technology), 281
- Swiss National Science Foundation (SNSF)
Trial Observation Project, 86
- Switzerland
 prohibition on use of evidence, 86–7, 93,
 94, 96
- syllogisms, 162
- synergy of group
 contribution of deliberative virtues, 126–8
- system errors, 325, 330–48
- Tarski, Alfred
 view on truth, 57
- Taruffo, Michele
 on expert evidence, 330, 344
 on inferences, 5–6, 159–69
 on relative truth, 396
- technical advisors, 243
- Tendam v. Spain (2010), 416, 418–19
- terminology
 in field of evidence, 2, 14, 375–6
 in field of forensic science, 306
- terrorism
 fair trial rights, 116–17, 120
- testimony
 comparison with first-hand knowledge,
 149–50
 ostensive aspects, 144–6
 See also expert evidence.
- testing of factual inferences, 71, 72, 78
- Thayer, James Bradley
 triumph, 19

- view
 - on admissibility, 25
 - on law and logic, 23, 99–100
- theorising about evidence, 14
 - gap in relation to standard of proof, 395
 - in law, 26
- theory of guilt, 175–7
- Thomas, Sabra
 - view on junk science, 337
- Thompson. *See* Guerra Thompson
- thought control, 205
- three-attribute theory of evidence, 66
- Three Strikes laws, 208
- torts. *See* toxic torts
- torture
 - prohibition on use of evidence, 85
 - approach of ECtHR, 104
 - in Singapore, 173
- total process model
 - application
 - to materiality, 22
 - to relevance, 23
 - in Anglo-American tradition, 28
- Toulmin, Stephen
 - inferential model, 162–3
 - view on field of evidence, 13
- toxic torts, 168–9
- training
 - in forensic science, 302, 306, 307, 308, 313–18
 - in virtuous group deliberation, 135, 302
 - See also* qualifications.
- traits of character. *See* group-deliberative virtues
- transparency
 - of forensic laboratories, 302, 308
- Trial Observation Project, 86
- trials
 - as complex adaptive system, 46–7
 - enforcement of codes, 42
 - from perspective of complexity theory, 44
 - functions, 42
 - mistakes. *See* bias; errors; miscarriages of justice
 - organization, 41
 - outcomes, 41, 42, 43, 44
 - See also* adjudication model; disputes; jury trials; litigation.
- truth
 - correspondence theory, 57, 159, 396
 - of propositions, 56, 159, 161
 - relation to evidence, 396
- Twining, William
 - on definition of evidence, 148, 150–1
 - on development of new subjects, 35
 - on field of evidence, 3, 13–30, 35
 - on generalizations, 59, 152–3
 - on purpose of fact finding, 151
 - on rationalist tradition, 396
 - on rules of evidence, 47
 - on scientific evidence, 316
- two-attribute theory of evidence, 66
- UCL (University College London)
 - evidence project, 18
- ultimate *probandum*
 - in relation to materiality, 20
 - in relation to relevance, 23
- uncertainty. *See* ‘beyond all reasonable doubt’ standard; forensic science; probability; standard of proof; statistical evidence
- unconscious prejudices. *See* non-volitional prejudices
- undue pre-trial detention, 395–423
- unexamined statements. *See* hearsay evidence; right: to examine witnesses
- UNHRC (United Nations Human Rights Council)
 - Universal Periodic Review (UPR), 185
- uniqueness, 303
- United Kingdom
 - wrongful convictions, 333–5
- United Nations Human Rights Committee
 - regulation of law of evidence, 102
- United Nations Human Rights Council (UNHRC)
 - Universal Periodic Review (UPR), 185
- United States
 - adverse inferences from silence, 179
 - burden of proof, 361–73
 - error rate of trials, 61, 326–7, 332–3, 338
 - evidence of prior similar acts, 199
 - expert reports read in absence of expert, 221
 - level of peacefulness, 48
 - selection of court-appointed experts, 223, 229
 - technical advisors, 48, 243
 - See also* Anglo-American tradition; Federal Rules of Evidence; New York.
- United States v. Woods (1973), 206
- Universal Periodic Review (UPR), 185
- universe
 - as complex adaptive system, 37

- University College London (UCL)
 evidence project, 18
- unlawfully obtained evidence
 approach of ECtHR, 98–120
 within a continental European system, 86–7,
 93, 94, 96
See also admissibility.
- unpredictable consequences, 35, 36
- unspecified wrongs, 198–211
- untested statements. *See* hearsay evidence;
 right: to examine witnesses
- UPR (Universal Periodic Review), 185
- vagrancy, 207
- Valencia
 court-appointed experts, 226, 229, 230, 232
- validation. *See* replication method of
 verification
- validity
 of expert evidence, 217–45, 296–318
 of factual inferences, 71, 72, 78
- value of evidence. *See* evaluation of evidence;
 weight
- values. *See* deliberative virtues: value
- Varela, Francisco
 contribution to complexity science, 37
- Vasquez Mamani (Fernando) case, 335
- Vázquez, Carmen
 view on expert evidence, 7, 217–45, 315
- verification of factual inferences, 71, 72, 78
- vertical choice of law, 364
- Viguer Soler, Pedro Luis
 view on automation of expert selection, 232
- violation of rights
 evidential remedies, 85–96
- virtues. *See* Confucianism; group-deliberative
 virtues
- Vuille, Joëlle
 view on scientific evidence, 316
- waiver of counsel, 92–5
- Wales. *See* England and Wales
- Wallace v. R (2010), 275
- Wang Guirong, 62
- Watt, Thomas
 contribution to complexity science, 38
- wealth creation. *See* economics
- weight
 concept, 24
 of fingerprint evidence, 279–80
 test, 20, 47
See also Keynesian weight; reliability.
- weighted evaluation of evidence, 377, 378,
 385–6, 393
- Wells v. R (2014), 282
- White Burgess Langille v. Abbott and
 Haliburton (2015), 353
- Wigmore, John Henry
 categorisation of evidence, 15
 division of rules of evidence, 100
 influence on Schum, 16
- view
 on autoptic preference, 148
 on expert evidence, 245
 on fact, 54
 on logic of proof, 19, 25
 on logical and legal relevance, 23
- wisdom of crowds, 128
- witnesses
 ostensive aspects, 144–6
See also cross-examination; expert evidence;
 false witness; right: to examine wit-
 nesses; testimony.
- Wittgenstein, Ludwig
 on fact, 55, 56
 on ostensive definition, 140
- World Congress on Evidential Legal
 Reasoning, 1, 2, 3
- written judicial opinions
 ostensive aspect, 146
- wrongful convictions and acquittals. *See* mis-
 carriage of justice
- wrongful pre-trial detention, 395–423
- Zain (Fred) case, 341
- Zapf, Patricia A.
 view on forensic psychology, 331
- Zeckhauser, Richard
 view on aggregated evidence, 209
- zero tolerance
 of wrongful convictions and acquittals,
 61–2