

## *Index*

- actions as evidence, 230  
 additivity of variables and their values, 132, 134, 170  
 Ahmed, A., 225 n14  
 Allais's paradox, 70–71, 174 n7  
 analysis of utility, 5, 14, 58, 66–69  
   canonical form of, 139, 164, 194, 205, 245–46, 249  
   of causal utility, 239–42  
   of intrinsic utility, 111–12  
   of spatiotemporal utility, 192–94, 206–207  
   of temporal utility, 149, 156, 159–61, 163  
 a priori knowledge, 154–55  
 Arntzenius, F., 232  
 arrangements, 13, 71  
 aversion, 91, 92–94  
   intrinsic, 91, 92, 94–103  
   extrinsic, 91  
 avoidable events
- Baron, J., 63, 111, 142 n37  
 basic intrinsic attitudes, 8, 16, 96–97  
   entailment among the realizations of, 98–99, 129  
   of humans, 102–103  
   independence of the reasons for, 108  
   intensities of, 102  
   intrinsic utilities of their realizations, 105–108, 188  
   nonproductive realization of, 110  
 Bentham, J., 176  
 Bernoulli, D., 83  
 Binmore, K., 28 n6, 38 n13, 59, 104, 141 n36  
 Black, J., 34 n9  
 Blackorby, C., D. Primont, and R. Russell, 34–35 n9  
 Bradley, R., 66 n8, 222 n10  
 branching time, 166  
 Briggs, R., 225 n15  
 Broome, J., 27 n3, 27 n4, 48, 71, 149
- Brown, C., 13 n8  
 Buchak, L., 110–11 n11
- Carlson, E., 116 n23  
 Carnap, R., 104, 144  
 causal decision theory, 4, 208, 210–13  
   and evidential decision theory, 56, 210, 229  
   and world Bayesianism, 4, 15, 52, 67–69, 77–78, 81  
 causal inference, 230–36  
   and the Causal Markov Condition, 233  
   and Faithfulness, 233  
   Mill's methods of, 231–32  
   and the principle of the common cause, 232  
   using statistical data, 232–35  
 causal laws, 231  
 causal model, 226–30  
   for a decision problem, 228–30  
   direct causation in, 226–27  
   intervention in, 226, 228–30  
   represented by a Bayesian net, 233–34  
   represented by a directed acyclic graph, 226–27  
   variables of, 227, 231  
 causal responsibility, 216  
 causal utility, 236, 238  
   conditional, 238–39, 242–44  
   of a conjunction, 242  
   direct calculation of, 245–46  
   expected, 244  
   and intrinsic utility, 240 n32  
 causation, 214  
   backward, 19, 186, 213, 220  
   and constitution, 115, 214  
   existence of, 218–19  
   as manipulation, 217  
   single-case, 219  
   speed of, 19, 185–86  
   transitivity of, 217–18  
 chances, 81  
   combinations of, 81, 89–90 n21  
   incoherent combinations of, 87

- interchangeability of, 86  
 order of, 86  
 separability of, 89–90 n21
- Chang, H., 12 n7
- Chisholm, R., 106 n10, 107 n11, 127 n29, 127 n30
- Christensen, D., 53 n4, 84 n18
- collective utility, 44
- commodity bundles, 25, 31, 166–67  
 and conjunctions of propositions, 33  
 and possible worlds, 166–67
- commutativity, 43  
 of utility, 86
- comparison of two options, 2–3, 19, 213
- complementarity, 35, 248  
 and contributinal independence, 109  
 temporal, 157, 172–73
- compositionality, 36–37  
 and interchange of equivalents, 37  
 and separability, 37–41, 48, 135 n34  
 of utility, 86–87
- comprehensive utility, 17, 24, 148, 209  
 its additivity, 51, 81–90  
 and intrinsic utility, 104–105, 138–39, 159, 241, 249  
 and temporal utility, 159
- comprehensiveness of a variable's value, 132–33, 135 n34
- concatenation operation, 45–47, 82, 142–44
- conceptual economy, 11, 20, 219. *See also* parsimony.
- conditional excluded middle, 222 n10, 237 n29
- conditional order, 27
- conditionals, 56–57 n6  
 counterfactual, 56–57 n6  
 indicative, 56–57 n6  
 subjunctive, 4, 56, 78, 225–26, 228, 251
- conjunction as nonproductive, 118
- consequences, 220–25  
 basic, 216, 236, 246  
 as comprehensive, 70  
 and effects, 210, 224–25, 236  
 of an event, 209  
 non-transitivity of, 223  
 of an option, 208–10, 220–25
- consistency of utility analyses, 21, 139–40, 161, 165, 246–47  
 of causal-utility analyses, 246–47  
 of spatiotemporal-utility analyses, 194, 205–207  
 of temporal-utility analyses, 180–81
- control, 72–74  
 direct, 73  
 full, 73
- correlation and causation, 210, 232
- counterfactual dependence, 218  
 and causation, 218, 220–21
- counterexamples, immunity to, 176. *See also* trivial truth
- Dancy, J., 127 n29, 127 n30
- Davis, W., 243–44 n33
- Debreu, G., 42, 48 n16
- decision, 74  
 heuristics for, 10 n6  
 time of, 168  
 time and place of, 200  
 its world, 4
- decision problem, 2, 72, 74  
 ideal, 77  
 multiple representations of, 74–75  
 options in, 2  
 its time, 151
- decomposability, 24. *See also* separability
- de Finetti, B., 85 n19
- degrees of belief, 52  
 access to, 55  
 their measurement, 54  
 their precision, 53
- degrees of desire, 57  
 access to, 58, 62  
 their measurement, 62  
 their precision, 62  
 as theoretical entities, 62
- desire, 4, 58–59, 92–94  
 extrinsic, 91, 94  
 higher-order, 151  
 intrinsic, 91, 94–103
- Dietrich, F. and C. List, 112 n19
- difference makers, 216 n8
- dimension, 20  
 of basic intrinsic attitudes, 111  
 of chances, 111  
 of time, 146  
 direct utility, 104  
 and intrinsic utility, 104
- do-operator, 229
- double counting considerations, 13, 17, 77  
 for causal utility, 236, 237 n30  
 for intrinsic utility, 92, 94, 129  
 for spatiotemporal utility, 192–93  
 for temporal utility, 149–50, 153
- Dreier, J., 62, 70
- Dretske, F., 214 n4
- efficiency, 6–11, 248  
 its dependence on circumstances, 9  
 operational, 11, 210  
 overall, 7, 11, 241–42

efficiency (cont.)  
   practical, 9–10, 250  
   theoretical, 9–10, 11, 250  
 efficiency in evaluation, 8  
   among general methods, 9  
   maximal efficiency, 9, 20, 242, 250  
   its measure, 8, 11  
 efficiency in a task, 6–7  
   maximal efficiency, 7  
   its measure, 7  
 Egan, A., 230  
 Egré, P. and M. Cozic, 56–57 n6  
 Elga, A., 53 n3, 174  
 epistemic possibility, 65, 67 n9, 167–68  
 events, 158, 214  
   avoidability of, 221  
   extended, 186, 214  
   location of, 194–98  
   multiple realizations of, 215, 222–23  
   propositional individuation of, 214–15  
   propositional representations of, 158  
   transitivity of influence for, 187  
 event-tokens, 214, 215, 220  
 event-types, 214, 215, 220  
 expected utility, 15, 67  
   “as if” maximization of, 66, 75–76  
   maximization of, 52, 68, 71, 75  
   principle of, 51, 66  
 explanation, partial, 6 n4  
 explanation of preferences, 63, 76  
 explication, 104  
  
 Feldman, F., 127 n28  
 Fine, K., 56–57 n6  
 frame problem, 10 n5  
 Freedman, D., 229 n20, 231 n22  
 freedom, 72–73  
   and causation, 219  
 Frege, G., 39  
 Fuchs, A., 151 n2  
 fundamental additivity, 47  
 fundamental separability, 47, 132, 248  
  
 gamble, 34  
 Gibbard, A., 107 n11, 113 n20, 151, 232 n23  
 Gibbard, A. and W. Harper, 19, 56, 211–13, 221–22  
 Gigerenzer, G., 10 n6  
 Gilboa, I., 11, 141 n36  
 Gillies, A., 56–57 n6  
 Gollier, C., 34 n9  
 Gorman, W. M., 42, 48 n16, 50 n17  
  
 Hall, N., 214 n4, 218 n9  
 Halpern, J. and J. Pearl, 217

Hammond, P., 25 n2  
 Hansson, S. O., 115 n21  
 Hanushek, E. and J. Jackson, 231 n22  
 Harman, G., 101  
 Hausman, D., 59–60, 217  
 Hedden, B., 74 n12  
 hedonic calculus, 18  
 hedonic pricing, 16, 112 n19  
 hedonism, 16, 176–77  
 Hitchcock, C., 218 n9, 226 n16  
 Hitchcock, C. and J. Kobe, 214, n4  
 Horty, J., 166, 211 n2  
 Huang, J. and J. Bargh, 103 n9  
 Hume, D., 218–19  
 Hurka, T., 13 n8  
  
 ideal agent, 5, 53–54, 55  
   and full rationality, 72, 139  
 identification of consequences, 20, 205, 208, 250–51  
 identification of relevant considerations, 3 n2, 8–10  
 identity element, 118, 119  
 incomparable goods, 175  
 independence of states from options, 203  
 indeterministic events, 223–24  
 indifference as a zero point, 57, 104, 106  
 indirect utility, 104. *See also* direct utility  
 intervals of realization, 154–56  
   for a basic intrinsic attitude, 154  
   conventions for, 154  
   for a proposition, 154, 158  
   for a world, 156  
 intrinsic attitudes, 96  
   basing relation for, 100 n7  
   effective reasons for, 97, 100–101  
   opposites of, 118  
   reasons for, 97–101, 103  
   suspension of, 97  
 intrinsic indifference, 94, 106, 115, 116 n22  
 intrinsic preferences, 137  
   conditional, 171  
   their independence, 137  
 intrinsic utility, 103–104  
   its additivity, 114, 116–24, 132, 169–71  
   alleged counterexamples to its additivity, 125–29  
   conditional, 108 n13, 171  
   constant contributions to, 107, 110, 121  
   its independence, 107–108, 121, 249  
   marginal, 108–10, 120, 137–38  
   separability of, 119, 129–38, 144, 170  
 intrinsic value, 127  
   and intrinsic utility, 127–28  
 intuition, 83–84

- Jeffrey, R., 51 n1, 57, 204 n3, 205  
 Joyce, J., 57, 100 n6, 228 n18
- Kahneman, D. and A. Tversky, 61, 63, 83, 94  
 Kahneman, D., E. Diener, and N. Schwarz,  
 96 n3  
 Keeney, R. and H. Raiffa, 48 n16, 111  
 Korcz, K., 100 n7  
 Korsgaard, C., 95  
 Krantz, D., R. Luce, P. Suppes, and A. Tversky,  
 48 n16, 54, 142 n37, 143  
 Kratzer, A., 56–57 n6  
 Kutach, D., 217  
 Kyburg, H., 53 n2
- Leitgeb, H., 56–57 n6  
 Lemos, N., 127 n31  
 Lewis, D., 56–57 n6, 166, 215 n6, 216  
 light cone, 18, 184  
   of an option, 19, 185, 196, 203, 217  
   as an option's region of influence, 184,  
   199, 203  
 Loewenstein, G. and D. Schkade, 140 n35  
 logical consequences, 94
- Malpezzi, S., 112 n19  
 managerial psychology, 250  
 marginal contribution, 135–36  
 Maslen, C., 214 n4, 218 n9  
 McCain, K., 100 n7  
 McClennen, E., 25 n2, 174  
 Meacham, C. and J. Weisberg, 46 n15  
 measurement, 82  
   conventions of, 46  
   fundamental, 142–43  
   of intrinsic utility, 140–45  
 Mele, A., 99 n5  
 Minkowski diagram, 183  
 models, 5, 43 n14  
   applied to humans, 101  
   in economics and philosophy, 43  
   idealizations for, 5–6  
   normative, 5, 43, 52, 113, 251  
 monotonicity, strictly increasing, 32  
 Moore, G. E., 127 n29  
 multiple attributes, 14–15  
 multi-attribute utility, 16, 111, 112 n19  
 multidimensional-utility analysis, 20
- necessary truths, 93, 106–107, 176  
 Nelson, P., 112 n19  
 Newcomb's problem, 68–69, 229–30  
 norm of additivity, 117–18, 144  
 norm of independence, 109–10, 120–21, 130  
 norm of marginal intrinsic utility, 109, 120
- norm of separability, 23, 42, 129–30  
   its a priori truth, 42  
   its strength, 44  
 normative decision theory, 2
- operational definition, 61, 219  
 operationalism, 11–12, 96, 219  
   semantic, 12  
 option, 72  
   as a decision, 74, 168, 198  
   effects of, 210  
   future of, 12, 147, 153, 164–65, 168  
   its place of realization, 198  
   its sequel, 180  
   unrealized, 215  
 option's world 15, 65–66, 148, 192  
   its uniqueness, 56, 79, 222, 226  
 organic unities, 127–28  
 outcome of an option, 65, 80  
   actions as evidence for, 230  
   as comprehensive, 69, 71, 77–78, 87, 209  
   as finely and coarsely individuated, 69–71,  
   212 n3  
   and an option's world, 65–66
- Papineau, D., 232  
 Pareto principle, 44  
 Parfit, D., 59, 97, 128, 151 n3  
 parsimony, 205  
 partition invariance, 77  
 partition of possibilities, 76–77  
 Pearl, J., 218 n9, 226, 228, 229–30, 232 n24,  
 233, 234  
 Peterson, M., 75 n13  
 Pettit, P., 112 n19  
 Plato, 92  
 point of an event's realization, 195  
   conventions for, 195–96  
 point-events, 186, 200  
 possible world, 1  
   its canonical representation, 115  
   comprehensive and intrinsic utility of, 139  
   and counterpart theory, 166–67  
   as epistemically possible, 167  
   as a maximal consistent proposition, 64, 65, 93,  
   113–14, 152  
   as metaphysically possible, 167  
 preferences, 59–60  
   causes and effects of, 64  
   coherent, 63  
   conditional, 27–28, 171  
   incoherent, 63  
   revealed, 3, 59  
   their separability, 45  
 probabilistic causation, 217, 226–27

- probability, 52–57  
 its additivity, 46–47, 84, 132  
 conditional and causal conditional, 56–57, 226–27, 229 n20  
 constructivist and realist views of, 52, 61–64  
 physical and evidential, 52  
 subjective, 55–56  
 probability axioms, 53–55  
 probability of a causal model, 232  
 probability image, 57  
 procedure for deliberation, 4–5  
 propensity, 222 n10  
 propositions, 4, 93  
 attitudes toward, 53, 58, 92  
 logical equivalence of, 93  
 outcomes of, 163, 209  
 results of, 184  
 understandings of, 93  
 worlds of, 148, 163  
 pros and cons, 91–92  
 addition of, 91, 112  
 the principle of, 178  
 psychometrics, 140  
 Pust, J., 83
- Quinn, W., 107 n11
- Rabinowicz, W., 100 n6  
 Rabinowicz, W. and T. Rønnow-Rasmussen, 127 n31  
 Raibley, J., 124–25  
 Ramsey, F., 85 n19  
 rationality, 2  
 full, 72  
 region of influence, 182–88  
 of an option, 184, 192  
 of a proposition, 183–84  
 region of realization, 184  
 conventions for, 186, 193  
 of an option, 184  
 partition of, 193–94  
 of a proposition, 184  
 region-events, 187, 218  
 regret, 204 n3  
 relativity theory, 18, 183, 185  
 relevance of considerations, 1–2, 248  
 and basic consequences, 241  
 and efficient evaluation, 2, 6, 9, 241–42, 244  
 and explanation, 6  
 representation theorem, 42–43, 48–50, 60–63  
 existence part of, 63  
 and measurement, 45–46, 54–55, 67, 82, 142  
 uniqueness part of, 63  
 return-risk evaluation, 50 n17  
 with mean return, 179–80
- Robinson, M. and G. Clore, 140 n35  
 Rosen, S., 112 n19  
 Rothschild, D., 56–57 n6
- Samuelson, L., 75 n13  
 Sartorio, C., 216 n8  
 Savage, L., 14, 60, 66–67, 70–71, 82, 141  
 scale change for utility, 18, 19, 168, 199, 202, 204  
 Schervish, M., T. Seidenfeld, and J. Kadane, 141 n36  
 Schroeder, T., 4, 59, 94 n1, 97  
 scope of evaluation, 1–2, 4, 8, 182, 212, 223, 250  
 Seidenfeld, T., 25 n2  
 self-ratifying option, 68 n10  
 separability, 12, 24, 29  
 additive, 42, 48  
 crosscutting or overlapping, 48  
 metric, 35  
 ordinal, 35  
 strong, 48  
 of a utility function, 32  
 weak, 48  
 separability as an agreement of orders, 25, 28–29  
 its use to simplify choice, 30, 41  
 separability and independent contribution, 36 n.11  
 separability and marginal utility, 34  
 separability as an order's independence, 25, 28–29  
 separability of the past, 172  
 separation of considerations, 14–15, 248  
 separation, effectiveness of, 16, 211–13  
 Shafir, E., I. Simonson, and A. Tversky, 112 n19  
 Shanahan, M., 10 n5  
 simplification and accuracy, 10  
 Sloman, S., 226 n16  
 small and grand worlds, 14  
 Sobel, J. H., 4, 67, 77  
 Sober, E., 232  
 Sober, E. and D. Wilson, 95  
 sources of utility, 2, 21, 152  
 space-time point, 182  
 of an option's realization, 185  
 space-time structure, 183  
 spatiotemporal region, 183  
 spatiotemporal utility, 188–90  
 of a chance, 191  
 conditional, 191, 201–202  
 Spirtes, P., C. Glymour, and R. Scheines, 226  
 Spohn, W., 218 n9, 226 n16  
 Stalnaker, R., 56 n6  
 standard of evaluation, 4–5  
 state, 77  
 avoidability of, 211  
 strength of desire, 3. *See also* degrees of desire  
 structural equations and causal models, 229 n19, 231 n22

- sunk costs, 42, 146–47, 175
- supposition, 77–80  
   indicative, 66, 68, 79–80, 202 n2, 222 n10,  
   242–43, 244  
   subjunctive, 65, 66, 68, 79–80, 202 n2, 222 n10,  
   226, 242–43
- sure-loss argument, 84–85, 124
- sure-thing principle, 70–71
- Taylor, R., 166 n6
- temporal utility, 148–49, 157–58, 162  
   its additivity, 173  
   during a lifetime, 176–79  
   maximizing it, 146, 170  
   its separability, 165, 170–72
- theoretical entities and terms, 11–12,  
   45–46
- time preference, 151
- time of realization, 152  
   for a basic intrinsic attitude, 153–56  
   conventions for, 154–55, 175  
   for an option, 168
- trivial truth, 126–27, 175–76
- unavoidable events, 2. *See also* events,  
   avoidability of
- uncertainty, resolutions of, 162
- utilitarianism, 32–33 n8, 42–44
- utility, 3, 57–58, 81  
   its additivity, 45, 49–50, 81–90  
   of chances, 21, 51, 81, 84, 88–90  
   changes in, 150–51  
   conditional, 66, 78–80  
   constructivist and realist views of, 3, 52, 61–64  
   its separability, 87–88
- utility of goods and propositions, 24
- utility maximization, 3, 52, 64, 71–72
- utility-holism, 124, 148
- value holism, 13–14, 92, 248. *See also* utility-holism  
   kinds of, 13 n8
- Varian, H., 32–33 n8
- Velleman, J. D., 109 n14, 178 n10
- Westerståhl, D. and P. Pagin, 37 n12
- Woodward, J., 214 n4, 217, 226 n16, 227 n17
- world parts, 129, 131  
   combinations of, 166  
   complements of, 129  
   separability of, 136–37  
   strong separability of, 130, 134  
   weak separability of, 130, 134
- Zhang, J., 226 n16, 233 n27
- Zimmerman, M., 107 n11, 113 n20, 127 n28,  
   127 n30