

Index of Names

- Ackermann, W., 287
 Adams, E., 18
 Adams, W., 347
 Ajdukiewicz, K., 18
 Almukdad, A., 184, 532
 Anderson, A., 80, 139, 161, 184,
 185, 202, 216, 533, 543, 544,
 547, 561
 Aristotle, 33, 47, 131, 132, 133, 251,
 252, 253, 326, 346, 382
- Baaz, M., 582
 Barcan (Barcan Marcus), R., 326, 346,
 364, 397
 Bar-Hillel, Y., 116, 117
 Batstone, A., xx
 Beall, J.C., 561
 Beaney, M., 305, 364, 382
 Beckmann, A., 238
 Bell, J.L., 453
 Belluce, L.P., 581
 Belnap, N.D., 80, 139, 161, 184,
 185, 202, 216, 502, 533, 543,
 544, 547, 561
 Bencivenga, E., 305
 Bennett, J., 80
 Berry, G.D.W., 588
 Black, M., 305, 364, 382
 Blamey, S., 140, 474
 Brady, R.T., 18, 161, 216, 561
 Brouwer, L., 116, 453
 Brown, B., 80
 Burgess, J., 60, 161
 Bynum, T.W., 18, 287
- Cantor, G., 227
 Carnap, R., 382
 Chang, C.C., 238, 565, 566, 581
 Chellas, B., 34, 101
 Chomsky, N., 113, 117
 Church, A., 216
 Cignoli, R., 239
 Cocchiarella, N.B., 326, 346
 Cooper, W.S., 18
 Copeland, B.J., 33, 217
 Cresswell, M., 33, 34, 60, 80, 326, 330,
 346, 364, 382
 Cross, R., 346
- da Costa, N.C.A., 161
 Dalen, D. van, 117, 453
 de Swart, H.C.M., 101
 DeVidi, D., 453
 Devitt, M., 365
 Došen, K., 216
 Dubois, D., 238
 Dugunji, J., 140
 Dummett, M., 112, 117, 561, 585
 Dunn, J.M., 161, 184, 216, 217, 532,
 533, 561
- Esteva, F., 581
 Eubulides, 237
 Evans, G., 364, 468, 473, 474, 577, 578,
 581, 582
- Faris, J.A., 18
 Feys, R., 60, 397

604 Index of Names

- Fine, K., 101, 237, 544, 546, 548, 561, 562
 Fitting, M., 34, 255, 326, 346, 365, 453
 Fodor, J., 117
 Fraenkel, A., 116, 117
 Frege, G., xvii, 18, 103, 117, 130, 139,
 259, 287, 296, 305, 364, 382
 Fuhrmann, A., 217

 Garson, J.W., 326, 346, 364, 372, 382
 Geach, P., 305, 364, 382
 Gent, I.P., 101
 Gibbard, A., 282
 Girle, R., xviii, 34, 60, 80
 Gödel, K., 117, 140, 238, 287
 Godo, L., 581
 Goguen, J.A., 238, 251
 Gottwald, S., 239, 582
 Gowans, C., 60
 Grice, P., 18
 Guthrie, W.C.K., 326

 Haack, S., 117, 140
 Hájek, P., xxiii, xxvi, 234, 238, 239, 255,
 581, 582
 Hänle, R., 227
 Harper, W.L., 101
 Hasle, P.F.V., 326
 Hay, L.S., 581
 Hazen, A., 561
 Hegel, G., 128
 Heyting, A., 116, 453, 581
 Hilbert, D., 287
 Hilpinen, R., 60
 Hinckfuss, I., xviii
 Hintikka, J., 60
 Horn, A., 581
 Howson, C., 18, 287
 Hughes, G., 34, 60, 80, 326, 330, 346,
 364, 382
 Hyde, D., 238, 474

 Jackson, F., 18
 Jaśkowski, S., 161
 Jeffrey, R., 18, 287

 Kanger, S., 382
 Keefe, R., 238, 474
 Keisler, J., 566
 Kim, J., 382
 Kleene, S.C., 107, 122, 123, 139
 Klir, G.L., 238
 Kneale, W., 33, 287, 326
 Knuuttila, S., 33
 Kremer, P., 533
 Kripke, S., 33, 34, 60, 79, 117, 130,
 139, 326, 346, 358, 364, 365

 Lambert, K., 304, 305, 474
 Langford, C.H., 33, 60, 326, 364
 Leibniz, G., 33, 287
 Lemmon, E.J., 60, 69, 80
 Leonard, H.S., 304
 Levy, A., 116, 117
 Lewis, C.I., 33, 60, 72, 76, 79, 80,
 90, 95, 154, 259, 326, 364, 371
 Lewis, D., 33, 90, 100, 101, 339, 342,
 346, 419
 Lindenbaum, A., 140
 Loparić, A., 184
 Loux, M.J., 33, 34, 347
 Löwenheim, L., 287
 Łukasiewicz, J., 122, 124, 136, 139,
 140, 238, 564
 Lycan, W., 34

 Machina, K., 238
 Malinowski, G., 140, 474
 Mancosu, P., 453
 Mares, E., 217, 561
 Martin, C., 80, 217
 Martin, E., 217
 Marx, K., 128
 McArthur, R.P., 326, 346
 McKinsey, J.C.C., 117
 Meinong, A., 30, 296, 305
 Mendelsohn, R., 34, 326, 346, 365, 453
 Menger, K., 238
 Meyer, J.J., 60

- Meyer, R.K., 18, 80, 161, 216, 217, 561
- Mints, G., 453
- Močkoř, J., 239, 582
- Montagna, F., 581
- Mortensen, C., 161
- Mostowski, A., 473, 581
- Nelson, D., 184, 185, 532
- Novák, V., 239, 581, 582
- Nute, D., 100, 101
- Øhrstrøm, P., 326
- Olivetti, N., 227
- Orlov, I., 216
- Ostermann, P., 255
- Parks, Z., 382
- Parsons, T., 326
- Pavelka, J., 238
- Pearce, G., 101
- Perfileva, I., 239, 582
- Perrin, B., 581
- Plantinga, A., 33, 326, 346
- Plumwood (Routley), V., 18, 161, 216, 217
- Post, E., 139
- Prawitz, D., 561
- Preining, N., 238, 582
- Priest, G., xvii, 22, 34, 80, 137, 139, 140, 151, 161, 184, 185, 216, 217, 238, 259, 288, 305, 347, 382, 397, 453, 474, 502, 532, 561, 581, 585
- Prior, A., 60, 326, 346, 382, 561
- Quine, W.V.O., 33, 296, 305, 316, 326, 364
- Read, S., xx, xxii, xxiii, xxvi, 34, 117, 217, 238, 287, 305, 561
- Rescher, N., 140, 238, 474
- Restall, G., xxiii, xxvi, 18, 22, 161, 217, 218, 561
- Robinson, J.O., 80
- Rose, R., 238
- Ross, W.D., 251
- Rosser, J.B., 238, 473, 581, 582
- Routley, R., *see* Sylvan
- Routley, V., *see* Plumwood
- Roy, T., xxiii, 217, 218
- Russell, B., xvii, 18, 131, 139, 259, 296, 305
- Rutledge, J.D., 581
- Sainsbury, M., 140, 238
- Sanford, D., 18
- Scarpellini, B., 566, 581
- Schwartz, S.P., 326
- Schweizer, B., 238
- Scott, D., 60
- Scotus, Duns, 80, 346
- Seegerberg, K., 101, 255
- Shoesmith, D.J., 140
- Sklar, A., 238
- Skolem, T., 287, 581
- Smiley, T.J., 140
- Smith, P., 238, 474
- Smith, T.L., 382
- Smullyan, A.F., 18
- Smullyan, R., 364
- Soisson, William of, 80
- Soloman, G., 453
- Sosa, E., 382
- Stalnaker, R., 33, 90, 95, 100, 101, 185
- Sterelny, K., 365
- Strawson, P., 139
- Sundholm, G., 561
- Sylvan (Routley), R., 18, 22, 34, 80, 140, 151, 161, 184, 216, 217, 259, 304, 305, 397, 502, 532, 561
- Takano, M., 581
- Takeuti, G., 581
- Tarski, A., 117
- Thomason, R., 60, 184, 532
- Thomason, S.K., 255
- Titani, S., 581
- Trillas, E., 581
- Turquette, A.R., 473

Cambridge University Press

978-0-521-67026-5 - An Introduction to Non-Classical Logic: From If to Is, Second Edition

Graham Priest

Index

[More information](#)

606 Index of Names

Urquhart, A., 140, 217, 238, 474

Valverde, L., 581

van Fraassen, B., 140, 474

Varzi, A., 140

Venema, Y., 60

Von Wright, G.H., 60

Waagbø, G., 347

Wansing, H., 178, 185, 533

Wajsberg, M., 238

Williamson, T., 60, 237, 238, 347

Wittgenstein, L., 113, 117

Wright, C., 117

Yagisawa, T., 185, 347

Yuan, B., 238

Zach, R., 582

Zadeh, L., 581

Index of Subjects

- accessibility denotation constraint (ADC)
400, 401, 406, 408, 411
- accessibility relation
binary 21
ternary 206–208
- Aristotle and Boethius 179
- avatars 368, 370
- axiom systems xviii, 544
continuum valued logic 224–231
modal logic 34
relevant logic 193, 202, 216
- $B(K\sigma)$ (the modal logic) 37, 60
- B (the relevant logic) 188–190
extensions 194–203, 537–541
history 561
identity 548–552
quantified 535–537
restricted quantification 541–543
semantics vs proof theory 543–548
soundness and completeness
555–560
tableaux for 190–194
- Barcan formula 330
- Bohr's theory of atom 75
- C (conditional logic) 85
extensions 403–408
history 419
identity 408–412
philosophical issues 413–414
quantified 399–408
soundness and completeness 415–419
- C^+ 87–90
- C_1 (VC) 94–97
- C_2 94–97
- category mistakes 130
- C_B 209
- CC (constant domain C) 399–401
- ceteris paribus* clauses 84, 114, 208–211,
260, 413
- change, instant of 128
- CK 228, 309–314, 320
- CL 385–386, 388, 389
- classical propositional logic 3–19
counter-models 10–11
history 18
object language 4–5
semantic validity 5
soundness and completeness 4, 16–18
tableaux 6–9
- CN 388, 389
- combinatorialism 30
- compactness theorem 278, 286, 287
- completeness 8, 17–18
see also soundness and completeness
- compositionality 103
- conditional logics
extensions 87–90
history 100–101
identity in 408–413
quantified 399–407
semantics 84–85
similarity spheres 90–94
tableaux 86–87
- conditionals 11–12, 82, 259–260
consequentia mirabilis 204

608 Index of Subjects

- conditionals (cont.)
 - contraction 216
 - enthymematic 208–211
 - fuzzy logic 230–231
 - intuitionist 113–114
 - many-valued 125–127
 - material 12–13
 - strict 72
 - subjunctive and counterfactual 13–15
- constant domain modal logics
 - history 325–326
 - normal modal logics 314–315
 - soundness and completeness 320–325
 - tableaux for *CK* 309–314
 - tense logic 318–319
- constructible negation 175–179, 517–523
- contingent identity modal logic 367–373
 - history 382
 - SI and nature of avatars 373–376
 - soundness and completeness 376–381
- converse Barcan formula 330, 337
- counter-model *see* tableaux

- De Morgan lattices 147
- De Morgan's laws 145
- de re* and *de dicto* 315–318
- degrees of truth 224, 234, 260
- denotation, failure of 130–132
- deontic logic 49
- designated values 226, 227
- dialectics 128
- dialetheism 136
 - see also* truth-value gluts
- disjunctive syllogism 16, 154–155
- distance metric 573–574
- doxastic logic 47

- E* 216
- enthymeme 83
- epistemic logic 47
- epistemicism 237
- equivalence relations xxx–xxxii
- essentialism 317, 326
- excluded middle
 - law 95, 124, 129, 133, 136, 204, 205
- exclusion and exhaustion 147
- existence 275–277, 295–297, 339–342, 413, 421–422, 462–465
- explosion of contradictions
 - Lewis argument for 76–77, 154
 - see also* paraconsistency

- FB* 232
- FDE* (first degree entailment) 163–164, 244–247
- disjunctive syllogism 154–155
- free logics
 - with relational semantics 481–483
- history 161, 502
- identity 485–488
- and many-valued logics 146–149
- paraconsistency 154–155
- Routley star 151–154, 483–485
- semantics 142–144
 - many-valued 476–479
 - relational 476–479
- soundness and completeness 155–160, 491
- tableaux 144–146, 479–481
- fiction, truths of 131
- first-order logic, classical
 - history 287
 - identity 272–274
 - philosophical issues 275–277
 - semantics 264–266
 - soundness and completeness 278–287
 - syntax 263–264
 - tableaux 266–272
 - technical comments 277–288
- free logics
 - history 304–305
 - identity in 297–299
 - intuitionist logic 424
 - negative 293–294
 - neutral 295
 - positive 293, 294
 - quantification and existence 295–297
 - with relational semantics 481–483
 - soundness and completeness 300–304

- syntax and semantics 290–291
 - tableaux 291–293
- future contingents 132–133, 251–253
- fuzzy logic
 - continuum-valued logic \mathcal{L} 224–231
 - conditionals in 230–231
 - deductions 570–572
 - history 237–238, 581
 - identity 573–576
 - quantified 564–565
 - \mathcal{L}_{\aleph} 227–229, 565–570
 - identity in 572
 - relevant logic 231–233
 - sortes paradox 221–224, 572–573
 - responses to 222–224
 - t -norm logics 234–237
 - quantification and identity in 578–581
 - vague objects 576–578
- Gödel logic 580, 581
- heredity rule 105, 108–109, 425, 426
- I see intuitionist logic*
- \mathcal{I}_3 183–184
- \mathcal{I}_4 176, 182–183
- identity invariance rule (IIR) 350, 432, 434, 487
- identity, substitutivity of 272, 276–77, 299, 350–352, 367–376, 413–415, 432–437, 468–469, 512–515, 548–555, 573–578, 581
- impossible worlds 260
 - and relevant logic 171–179
- initial list, of tableau 6
- interpretations *see* semantics
- intuitionist logic 103–105, 112–113, 130, 138, 171, 175, 189, 207, 209, 231, 580
 - conditional 113–114
 - existence and construction 421–422
 - history 116–117, 453
 - identity 434–437
 - mental constructions 431–432
 - necessary identity 432–433
 - quantified logic 422–424
 - semantics 105–107
 - soundness and completeness 114–116, 437
 - tableaux for 107–111
 - of kind 1 424–427
 - of kind 2 427–431
- K 20–28
 - constant domain 308–309
 - history 33–34
 - modal semantics 21–23
 - modal tableaux 24–27
 - necessity and possibility 20–21
 - representation 28
 - soundness and completeness 31–33
 - variable domain 330–331
- K_3 122–124, 139, 148, 223, 460, 469
- K_4 and K_* 164–166, 169, 179–181, 182, 189, 510–512
- Kleene 3-valued logic *see* K_3
- K^t 49–51
 - extensions 51–56
- K_V *see* S_5
- $K\rho, K\sigma, K\tau$ etc. 36
- L, L_ρ etc. 69–71
 - quantified, 385–391
- \mathcal{L} 224–231
 - axioms for \mathcal{L}_{\aleph} 227–229
 - conditionals in 230–231
- \mathcal{L}_3 124, 139, 149–151, 225, 460, 469
- laws, inconsistent 127–128
- Lewis argument, for explosion of contradictions 76–77
- Lewis' systems of modal logic 60, 82
 - see also* S_1 – S_5
- logic
 - classical xvii, 3–19, 142, 149, 225
 - free xvii
 - with gaps, gluts and worlds 505
 - modal 20, 36, 133
 - non-normal modal 64–81, 384

610 Index of Subjects

- logic (cont.)
 conditional 82–101, 204, 216,
 259–260, 399
 contingent identity modal 367
 intuitionist 103, 130, 138, 207, 421
 many-valued 120, 146–149, 224,
 226, 456
 medieval 316
 non-classical xvii
 quantum xviii
 logic (cont.)
 fuzzy 230–231
 paraconsistent 184
 relevant 163, 188, 231–233, 535
 Stoic 259
 substructural 218
see also individual entries
 logical truth *see* validity and
 logical truth
 Löwenheim–Skolem Theorem 278,
 286, 287
 LP 124–125, 139, 149, 150, 460, 469
 Łukasiewicz 3-valued logic *see* \mathcal{L}_3
 Łukasiewicz logic, modal 243–244
 modal logic 136
 quantified 564–565
 \mathcal{L}_\aleph 227–229, 234, 235, 565–570
 identity in 572
- many-valued logics
 3-valued logics 122–125, 147–151,
 459–461
 conditionals 125–127
 existence and quantification
 462–465
 free versions 461–462
 general structure 120–122
 history 139–140, 473
 identity 467
 K_3 122–124
 \mathcal{L}_3 124
 LP 124–125
 modal logic
 FDE 244–247
 general structure 241–242
 Łukasiewicz logic 243–244
 tableaux 247–250
 neutral free logic 465–467
 non-classical identity 468–469
 quantified many-valued logics 456–458
 RM_3 125
 soundness and completeness 137–139,
 255–258
 supervaluations and subvaluations
 133–137, 469–471
 material conditional 12–13
 mathematical induction (recursion)
 xxix–xxx
 matrices 384–385, 505
 meinongianism 30–31
 metatheory, non-classical 584–586
 modal actualism 29–30, 33
 modal logic, K (after Kripke) *see* K
 modal logics
 many valued 241–255
see non-normal modal logics, normal
 modal logics
 modal realism 28–29, 33
 modal semantics 21–23
modus ponens 12, 15, 73, 74, 88, 125, 154,
 233, 235, 553, 570, 573, 576
 multimodal logics 50
- N , $N\rho$, $N\sigma$ etc. 65
 N_4 , N_* 168–169, 170, 173, 179–180, 181,
 182, 189, 505–508, 508–510
 necessary identity in modal logic
 349–352
 history 364
 names and descriptions 357–358
 negativity constraint 352–354
 rigid and non-rigid designators 354–357
 soundness and completeness 358–364
 necessitation, rule of 68
 necessity and possibility 20–21, 46–49, 132
 negation
 relevant/paraconsistent 151
see also Routley star
 negativity constraint rule 293–294, 299,
 302, 338, 352–354

- non-normal modal logics
 constant domain quantified L 385–386
 tableaux for 386–387
 history 79–80, 397
 identity 391–393
 matrices 384–385
 non-normal worlds 64–65
 $S0.5$ 69–71
 soundness and completeness 77–79,
 393–397
 tableaux 65–67
 non-normal world 166–168
 normal modal logics 20–28, 36–60,
 314–315
 history 60
 necessity 46–49
 quantified 308–315, 329–331
 $S5$ 45–46
 semantics 36–38
 soundness and completeness 56–59
 tableaux 38–42
 infinite 42–44
 tense logic 49–56
 normality constraint/rule 189–191, 195,
 196, 199, 201, 211, 214
 normality invariance rule 549
- object-language
 syntax 4–5
 object, vague 276–278
- paraconsistency *see under* logic
 paradox(es)
 Berry's 130, 465
 liar 129
 Russell's 129
 of self-reference 129–130
 sorties 221–224, 572–573
 of strict implication 72–74
 parameter sharing 173, 174
 permutation 203, 204, 218
 possibility *see* necessity and possibility
- quantum mechanics 128
- R 189, 203–206, 216
 relevant logics
 ceteris paribus enthymemes 208–211
 content ordering 197–200
 fuzzy 231–233
 history 216–217
 identity 548–552
 logic B 188–190
 extensions for 194–203
 tableaux for 190–194
 predication 515–517
 properties of identity 553–555
 quantified 535–537
 restricted quantification 541–543
 semantics vs proof theory 543–548
 soundness and completeness 211–216,
 555–560
 ternary relation 206–208
 see also worlds
 rigid and non-rigid designators 354–357
 RM (R-Mingle) 139, 202–203
 RM_3 125, 139, 149–151, 205, 460, 469
 Routley star 151–154, 216, 483–485
 see also semantics; star
 RW 202
- $S0.5$ 69–71
 $S1$ 79
 $S2$ ($N\rho$) 65
 $S3$ ($N\rho\tau$) 65
 $S3.5$ ($N\rho\sigma\tau$) 65
 $S4$ ($K\rho\tau$) 65
 $S5$ ($K\rho\sigma\tau$, $K\nu$) 45–46
 equivalence between $K\rho\sigma\tau$ and
 $K\nu$ 45, 57
 $S6$ and $S7$ 80
 semantics (interpretations) 3, 392,
 584–585
 algebraic xviii, 161, 206, 216, 237
 for conditional logics 84–85
 FDE 142–144, 147, 151–154, 476
 first-order logic 264–266, 276
 free logics 290–291
 fuzzy 223, 224, 229, 233, 234, 237, 238

612 Index of Subjects

- semantics (interpretations) (cont.)
 for \mathcal{L}_3 149–151
 many-valued 224, 476–479
 matrix 505
 paraconsistent 154–155, 161
 relational 163, 171, 476–479
 for RM_3 149–151
 star 169, 171, 189, 483–498, 493–498
 validity and logical truth 3–4, 5
 world xviii
 fuzzy relevant logic 233
 for intuitionist logic 105–107
 for normal modal logics 21, 28, 36–38
 relevant logic 163, 188
- sequent calculi xviii
- set theory
 basic concepts and notation xxvii–xxix
 Zermelo Fraenkel 585
- similarity spheres 90–94
- situation semantics 217
- sorties paradox 221–224, 237, 572–573
 responses to 222–224
- soundness and completeness xix
 for B 202, 211–212, 556–560
 for B 's extension 196
 for C and C^+ 415–416
 for C_B 215–216
 for CL and VL 394
 for classical prepositional logic 4, 16–18
 for CN and VN 394–395
 constant domain modal logics 320–325
 for contingent identity 377, 418–419, 451–453
 for FDE , K_3 and LP 146, 149, 152, 157, 491–493
 first-order logic 278–287
 free logics 300–304
 fuzzy logic 565–570
 for intuitionist logic 114–116
 for K_4 and K_* 179–181, 182, 183
 for \mathcal{L}_N 229
 for K_* and K_4 524–526
 many-valued modal logics 255–258
 for N_4 and N_* 181, 182, 524–527
 necessary identity 358–364, 396–397, 416–418, 448–451
 for non-normal modal logics 77–79
 for normal modal logics 31–33, 56–59
 for quantified I_4 531–532
 for relational semantics 528–529
 relevant logics 211–216
 for star semantics 493–498, 529–530
 for intuitionist tableaux
 of kind 1 439–444
 of kind 2 444–448
 variable domain modal logics 342–346
- star 169–171, 189
 see also Routley star
- strict conditionals 72
 paradoxes, of strict implication 72–74
- substitution, uniform 137
- substitutional quantification 266
- substitutivity of identicals *see* identity, substitutivity of
- supervaluation 133–137, 223, 237
- T 202, 203
- tableaux xviii
 for basic modal logics 24–27
 for CK 309–314
 for CL 386–387
 for classical prepositional logic 6–9
 for conditional logics 86–87
 for FDE 144–146, 479–481
 for first-order logic 266–272
 for free logic 291–293
 for intuitionist logic 107–111
 for K_4 and K_* 164–166, 169
 of kind 1 (intuitionist) 424–427
 of kind 2 (intuitionist) 427–431
 for many-valued modal logics 247–250
 for N_4 and N_* 168–169, 170
 for non-normal modal logics 65–67
 for normal modal logic 38–42
 infinite 42–44
 relevant logic 176, 183, 184, 190–194
 for VK 331–335
- tense logic 49–56, 318–319, 335–336
 see also K^t
- ternary relation 206–208

- t-norm logic 234–237
 - quantification and identity in 578–581
- tonk 546–547
- transworld identity 341
- tree 6
- triangle inequality 574, 575
- truth conditions 168, 170, 171, 175, 242, 254, 264–265, 291, 309, 331, 368, 372, 386, 423, 466, 478, 535, 580
- truth preservation 164, 167, 168, 174, 176, 209, 477, 484
 - see also* validity and logical truth
- truth table 5, 121
- truth-value gaps 127, 148, 154
 - denotation, failure of 130–132
 - future contingents 132–133
- truth-value gluts 127–128, 149, 154, 172, 174, 185, 260
 - paradoxes of self-reference 129–130
- TW 202

- undecidability of strong relevant logic 217

- vagueness 128, 130, 223, 237, 238, 575, 576–578, 584
- validity and logical truth 368, 386, 400, 423, 477
 - proof-theoretic 4
 - see also* axiom systems; tableaux
 - semantic 3–4, 5
 - see also* semantics
- variable domain modal logics
 - existence across worlds 339–341
 - existence and wide scope quantifiers 341–342
 - history 346
 - K variable domain and normal extensions 330–331
 - soundness and completeness 342–346
 - tableaux for VK and normal extensions 331–335
 - tense logic 335–336
 - VC (variable domain C) 402–403
 - VK 331–335, 342–345
 - VL 388, 389
 - VN 388, 389
- waterfall effect 75–76
- worlds 64–65, 339–341
 - with constructible negation 517–520
 - identity 521–522
 - FDE 163–164
 - fuzzy 231, 233
 - history 184–185, 532
 - identity 512–515
 - impossible worlds 260
 - and relevant logic 171–179
 - K_4 , K_* 510–512
 - N_4 , N_* 505–508, 508–510
 - non-normal world 64–65, 166–168
 - possible (normal) 20, 28, 36–38, 64
 - soundness and completeness 179–184, 523–531
 - star 169–171
 - tableaux
 - for K_4 164–166
 - for N_4 168–169