

# Subject Index

---

- ability/knowledge distinctions, child
  - development 14-15, 109-18, 123-46
  - capacity to acquire theory of mind 140-2
  - cognitive penetrability 123-4
  - Fodor's heuristic model 142-5
  - Fodor's VSIM (very simple theory of mind) 110-17
  - innate basis of ToMM 125-7
  - insidious ambiguity 137-40
  - representational theory of mind 134-40
  - simulation 127-34
- action planning system, knowledge and ability 128-33, 145
- action prediction problems, metacognitive development 111-18, 121-2, 142-4
- AI *see* artificial intelligence
- altruism, moral theory and 202-3
- analogical modeling, child development 73, 75-8
- appearance-reality test
  - inference errors 62, 77-8
  - metacognitive development 116, 117-18
- artificial intelligence (AI), simulative reasoning 17, 247-70
  - adjusting reasoning mechanisms 258, 259
  - alternatives to simulative reasoning 252-5
  - ATT-Meta 263-9
  - consciousness 260
  - inference processes 260
  - nested beliefs 17, 255-7, 261-2
  - reasoner as model 259-60
  - simulation cocoon 260-2
- ascent routine, simulation without introspection 12-13, 60-4
- Asperger's syndrome, problem-solving 159
- ATT-Meta 249, 263-9
- autism
  - counterfactual reasoning 15-16, 179-83
  - empathy 102-5, 195
  - false belief tests 136-7, 141-2
  - problem-solving strategies 159, 179-83
  - self-knowledge and 227
  - theory of mind mechanism (ToMM) 15, 125, 127, 141-2, 145-6, 155-6, 172-3
- belief 2, 5, 6-11
  - concept mastery 5, 6-10, 11; ability/knowledge distinctions 15, 109-18, 135-7, 138-45, 153-6, 170-3; ascent routines 13, 59, 60-4; circularity of simulation theory 10-11, 23-7; empathy case 193-5; functionalism/eliminativism 28-9; imagination as simulator 157-8, 160-2, 173-83;

- belief (*Cont'd*)  
 metacognitive development 109–18, 142–5; new experimental paradigms 70–8; transformation 54–7  
 inference and introspection 12, 57–64  
 knowledge and decision-making systems, separate implementation of 14, 94–7  
 perseverance phenomenon 100–1, 260  
 prediction based on information about other beliefs 11, 33–51, 54–7  
 rationality heuristic 186–7  
 self-knowledge and 213–15, 221–3  
*see also* artificial intelligence, simulative reasoning  
 belief explanation task 115  
 belief prediction task 116
- Cartesian introspection 210–11, 227, 228, 229
- centipede game, game theory 237–41, 242–3
- child development  
 ability/knowledge distinctions 14–15, 109–18, 123–46, 153–6, 170–3  
 empathy and 192–7, 259  
 flagging theory, imagination and pretence 156, 173–8  
 imitation 73, 193, 195–7, 198–9  
 inference neglect 46–7, 74–5, 77–8, 97  
 introspection and inference 12, 59, 60–4  
 new experimental paradigms 13, 68–84; developmental formulation 71–3; perceptual-symbolic intelligence 79–84; research authority requirements 73–8; theory-theory overview 69–71  
 perception and prediction 49  
 self-knowledge: errors and disorders 225–9, 230–1; play 220, 230  
 simulation or theory-theory, evidence overview 5–10  
 simulative reasoning and artificial intelligence 259, 269–70  
*see also* belief, concept mastery
- cognitive penetrability 14, 99–102, 123–4, 145
- common-sense psychology  
 artificial intelligence and 17, 247–70  
 mental states attribution 186  
 no full description of 71–2  
 ontology of mental states 29–30  
 compassion, simulation theory and 16, 199–200
- competence/performance distinctions  
*see* ability/knowledge distinctions
- completeness, self-knowledge and, Cartesian introspection 210, 212
- conditional planning 98–9, 192
- connectionism 253
- consciousness  
 accessibility of 'folk-psychology box' to 90  
 ascent routines 63  
 imagination as simulator 162–3  
 self-knowledge 211, 228  
 simulative reasoning and artificial intelligence 260
- consensus, self-knowledge 223–5
- contagion  
 empathy 198–9  
 of imagination 42–3, 44, 55
- content of thoughts  
 pretence and representational content 139, 152–6  
 relevance to prediction 35–42, 46–7  
 self-knowledge 227, 230–1
- contentful states, imagination 152
- counterfactual reasoning  
 autistic children 15–16, 179–83  
 decoupled representation 126  
 simulative reasoning and artificial intelligence 267, 270
- Crane-Tees experiment *see* Tees-Crane experiment
- deception task 114, 115
- decision-making systems 4  
 cognitive penetrability 100  
 conditional planning 98–9, 192  
 empathy 104–5, 189–92  
 knowledge and, separate implementation 13–14, 93–7  
 overview of in simulation and theory-theory 89 (fig.), 92 (fig.)  
 sub-personal terms 34
- decoupled representation 126, 131, 153–5, 170–3
- demonstrative account, judging others' behavior 43–5
- descriptive ethics 16, 199–201, 203

- desire 2  
   first-person/third-person belief attributions 8  
   imagination as simulator 157-8, 162, 172  
   make-desires 162  
   mastery of concept of 142-5:  
     satisfaction conditions 110-11, 116-17; VSIM (very simple theory of mind) 110-12, 116-17  
   off-line simulation 104-5, 190-2  
   prediction based on information about other beliefs 11, 34  
   self-ascription 57-9  
   self-knowledge 214-15  
 developmental psychology *see* child development  
 discourse  
   integrative processes in 181-3  
   simulative reasoning and artificial intelligence 248-9, 260, 263-9  
 disparate belief task 114  
 dispositional imagining 160-1  
  
 eliminativism and functionalism 11, 20, 28-30  
 emotional contagion *see* contagion  
 empathy  
   autistic children 102-5, 195  
   Fuller's case for 19, 22-30  
   Goldman's case for 16, 185-203, 259:  
     affective/emotional states and 197-9; consequences for moral theory 199-302; developmental evidence 192-7; Stich and Nichols's review 102-4  
   imagination as simulator and 158-9, 161  
   self-knowledge and, thought experiments 216-17  
 empiricism  
   content assumptions 37-8, 41  
   self-knowledge 211-12, 217, 223-4, 229  
 epistemology  
   ethics, realism or feasibility 16, 202, 203  
   philosophical perspective on simulation theory 10, 11, 20, 21-2, 28  
   self-knowledge 211-12, 217, 223-4, 229  
  
 ethics, simulation theory's consequences for 16, 199-203  
 etiological properties, intentional objects 111  
 evolution, empathy and 203  
 eye-witness memory 178  
  
 false belief explanation task 113  
 false belief test 6-8  
   ability/knowledge distinctions 15, 135-7, 141-2; metacognitive development 15, 109, 111-18, 121-2, 142-5; Representational Theory of Mind and 135-7, 138-9  
   empathy case 193-5  
   inference neglect 77  
   introspection and inference 61-2  
   metacognitive development 15, 109, 111-18, 121-2  
   new experimental paradigm 70-1, 73, 81; mental reasoning experiment 74-5; perceptual-symbolic intelligence 79-84  
 false-recognition errors 182  
 families, self-knowledge errors and disorders 225-6, 227-9, 230-1  
 feasibility (realism), moral theory and 16, 202, 203  
 fiction, imagination and 15, 151-64, 178-83  
 first-person/third-person case 5, 7-10  
   knowledge and decision-making systems, separate implementation of 13-14  
   mental concepts 5, 27-8  
   self-knowledge 212-14, 218  
   simulation without introspection or inference 12-13, 33-64, 259-60  
 flagged representation 131, 156, 173-8  
 flash stockman problem, imagination as simulator and 161  
 framework theories, adult theory 79-80  
 functionalism and eliminativism 11, 20, 28-30  
  
 game theory 16, 235-45  
 gaze, direction of  
   ascent routine 12-13, 60-4  
   joint visual attention 69, 193, 195  
 gender differences, empathy

- ethical responses 16, 200–1
  - Hill-Thomas case 190
- generalizations 20, 29–30, 88–90, 187–8
- grammar *see* linguistic knowledge
- Hill-Thomas case, empathy and 189–90
- ideas-as-internal-utterances model, artificial intelligence 263, 264, 268
- ideas-as-models model, artificial intelligence 263, 268–70
- imagery
  - children's power of 83–4
  - Currie's concept 152–3
  - 'imaginative identification' and 91–2
- imagination
  - circularity of simulation theory 23–6
  - contagion of 42–3, 44, 55
  - Currie's account and reviews 15, 151–64; flagging theory 156, 173–8; imagination as simulator 157–63, 178–83; pretence and representational content 15, 152–6, 170–3; use of concept 151–2
  - empathy and 194–5, 198–9
  - or imagery 83–4
  - new experimental paradigms 73, 76, 83
  - prediction based on information about other beliefs 47–9
  - self-knowledge and 220
  - unilateral neglect 163
- imaginative identification 3, 4, 12, 54–8, 91–3
- imitation 69, 73, 193, 195–7, 198–9, 203
- infallibility, self-knowledge 210, 212–14, 221–3, 229–30
- inference
  - control problems: metarepresentation theory 131–2; simulative approach 17, 249, 252, 253–4, 257, 260
  - Gordon's case 12, 53–64, 259–60
  - integrative processes in discourse 181–3
  - self-knowledge 218–19
- inference neglect 46–7, 74–5, 77–8, 97
- information processing mechanisms
  - imagining 157–9, 178–83
  - Leslie and German's account 14–15, 123–46
  - metacognitive development 14–15, 109–18
- innateness
  - of capacity to acquire theory of mind 125–7, 139–40
  - tacit knowledge of theory 5, 188
- integrative processes, discourse 181–3
- intentional objects, Fodor's VSIM 110–11, 116
- intentionality
  - empathy 186
  - imagination as simulator 162–3
  - mastery of 69–73, 79
  - self-knowledge 212–14, 215, 218–19, 220, 221–3, 230
  - simulation not necessary for 23, 24
- intra-psyche processes, self-knowledge 227, 228–9, 231
- introspection
  - Cartesian 210–11, 227, 228, 229
  - first-person attributions 8
  - Gordon's case against 12, 53–64, 259–60
- intuition, game theory and 235–45
- isolation (quarantine), of imagination and pretence 171–2, 190, 194
  - see also* contagion
- isomorphism
  - pretend play and mental state reports 15, 126, 153–6, 160
  - Tees-Crane experiment 21, 24
- iterativity, imagination as simulator and 161
- joint visual attention phenomenon 69, 193, 195
- judgement
  - of another's thoughts 11, 34, 42–7
  - knowledge and decision-making systems 14, 93–7
  - on-line simulation and 223
- knowledge 10
  - ability/knowledge distinctions 14–15, 109–18, 123–46
  - decision-making system and, separate implementation 13–14, 93–7
  - empathy case 193–5

- game theory 16, 235–45  
 knowledge structure in theory-theory 88–9  
 prediction based on information about other beliefs 35–42, 46–7, 50–1  
*see also* self knowledge
- language, natural  
 integrative processes in discourse 181–3  
 simulative reasoning and artificial intelligence 248–9, 260, 263–9
- linguistic knowledge  
 ability/knowledge distinction 124–5  
 action planning system 132–3  
 analogy with theory-theory 90–1  
 empathy 188–9  
 knowledge and decision-making systems, separate implementation 14, 93  
 new experimental paradigms 69, 72–3  
 self-ascription and 59, 61, 62–3
- make-beliefs 162  
 make-believe belief 48  
 make-desires 162
- memory  
 constructive inference and 182  
 eye-witnesses 178  
 failure of or false belief 195
- metacognitive development 109–18, 142–5  
 simulative reasoning and artificial intelligence 259–60
- metareasoning (theory-theory), artificial intelligence and 17, 247–70
- metarepresentation theory  
 children's understanding of pretence 127–8, 139–41, 170–1: action planning system 128–33; desire problem 172; meaning of pretend symbols 171–2; opacity 172–3; representational content and 152–6  
 deployment by ToMM 126–7  
 description 126  
 new experimental paradigms 13, 75, 81–4
- mimicry *see* imitation
- mind-as-container metaphor, artificial intelligence 248, 263, 266, 268
- modeling analysis  
 explanatory role of models 73, 75–8  
 game theory and 240–1  
*modus ponens* rule, in simulative reasoning and artificial intelligence 250–9
- moral theory, simulation theory's consequences for 16, 199–203
- motor mimicry 195–7
- natural language, simulative reasoning and artificial intelligence 248–9, 260, 263–9
- nested simulations 17, 130, 161, 255–7, 261–2
- nomological properties, predictors 190–1, 259
- non-simulative meta-reasoning, artificial intelligence 249, 252, 257–8, 269
- nonrecognition accounts, self-ascription 12, 58–9
- off-line desire simulation 104–5, 190–2
- off line simulation 4, 91–7, 105–6  
 action planning system and 129, 130  
 cognitive penetrability 14, 99–100, 123–4  
 inference neglect and 97  
 self-knowledge, on-line simulation contrasted 223  
 simplicity debate 98–9  
 sub-personal terms 34, 41–2
- on-line simulation 129, 130, 221–3
- ontology of mental states  
 simulation theory 10, 11, 19, 28–30:  
 functionalism/eliminativism 11, 20, 28–30  
 theory-theory 69  
 VSTM (very simple theory of mind) 110–11, 116–17
- ontology of pretend entities 156, 174–5
- opacity, representations 126, 155, 172–3
- particularism, moral theory and 202
- perception  
 empathy 189  
 prediction and 49  
 unilateral neglect 163
- perceptual-symbolic intelligence 79–84

- perspective-taking  
   empathy 189-92, 198-9  
   self-knowledge 219-20, 230  
 photograph test 116, 135-6, 141-2  
 platitudes 90-1, 187-8  
 play  
   autistic children 159, 179-83  
   false belief task 6  
   metacognitive development 114, 115  
   new experimental paradigms 73, 76  
   self-knowledge 220, 230  
   *see also* pretence  
 Polaroid test 116, 135-6, 141-2  
 post-empiricism *see* empiricism  
 practical reasoning *see* decision-making  
 prediction 2, 6-7  
   autism and empathy 102-5  
   on basis of information about other  
   beliefs 11-12, 33-51, 54-7:  
   circumstances and behavior 11, 34,  
   47-51; psychological concepts  
   involved in judgements 42-7;  
   relevance of content 11, 34, 35-42,  
   46-7  
   cognitive penetrability 14, 99-102  
   empathy case 186-7, 189-92  
   game theory 16, 235-45  
   knowledge and decision-making  
   systems, separate implementation  
   13-14, 93-7, 101, 102  
   metacognitive development 111-18,  
   121-2, 142-4  
   self-knowledge and 213-14, 218-19  
   simplicity debate 98-9  
   simulation theory 3-5, 91-7; from a  
   philosophical perspective 10, 19,  
   22-7, 54-7  
   theory-theory review 87-90  
 prescriptive ethics 16, 201-3  
 pretence 3-4  
   autistic children 159, 179-83  
   children's understanding of,  
   metarepresentation theory 127-33,  
   139-41, 152-6, 170-3  
   counterfactual reasoning 15-16,  
   180-3  
   empathy 189, 190-2, 194-5, 198-9  
   false belief task 6  
   imagination and 15-16, 170-83:  
   concepts described 151-2; flagging  
   theory 156, 173-8; imagination as  
   simulator 157-63; isomorphism 15,  
   126, 153-6, 160, 170-3;  
   representational content 139, 152-6  
   meaning of pretend symbols 171-2  
   metacognitive development 114, 115  
   new experimental paradigms 73, 76  
   opacity 126, 155, 172-3  
   pretend-belief states 24-6, 54-7  
   self-knowledge 220, 230  
   simplicity debate 98-9  
   pretend entities, ontology of 156, 174-5  
   prisoner's dilemma, game theory 241-2  
   privileged access, theory-theory 70-1,  
   212-14  
   process- or theory-driven simulation 4,  
   21, 23  
   projection 6-7  
   imaginative *see* empathy  
   intra-psychic defenses 228-9  
   projectivist strategy 49-51  
   psychoanalytic theory, self-knowledge,  
   errors and disorders 227-9, 231  
   psychological/psychiatric disorder, self-  
   knowledge and 209-10, 226, 227-9,  
   230-1  
   *see also* autism  
 quarantine (isolation)  
   of imagination and pretence 171-2,  
   190, 194  
   *see also* contagion  
 rationality heuristic 186-7  
 rationalization, theory-theory debate  
   overview 2  
 realism, moral theory and 16, 202, 203  
 reasoning  
   child development 73-8  
   counterfactual: autistic children 15-16,  
   179-83; decoupled representation  
   126; simulative reasoning and  
   artificial intelligence 267, 270  
   distinction between simulation and  
   159-60  
   hypothesizing from 35  
   and relevance of content to prediction  
   35-8  
   simulative and meta-reasoning 17,  
   247-70

- Verstehen* 188–9  
*see also* artificial intelligence (AI),  
 simulative reasoning
- recentring 55–6
- recursive representations 130, 133
- referents, child development 80, 81–3,  
 194
- reliability, self-ascription process 58–9
- replication *see* empathy
- representation  
 decoupled 126, 131, 153–5, 170–3  
 empathy case and 194–5  
 flagged 131, 156, 173–8  
 imagination and 152: function of  
 imagining 157–60; pretence 139,  
 152–6  
 metacognitive development 113, 114,  
 116–17  
 new experimental paradigms 75, 77–  
 8, 81–4  
 opacity of 126, 155, 172–3  
 prediction based on information about  
 other beliefs 47–9  
 self-knowledge: on-line simulation  
 223–4; perspective-taking 219–20  
 theory-theory overview 70–1  
 transformation 56–7  
*see also* metarepresentation theory
- Representational Theory of Mind (RTM)  
 134–40  
 children-as-scientists metaphor 134–5  
 false belief task, theory shift 135–7  
 insidious ambiguity 137–40
- satisfaction conditions, Fodor's VSTM  
 (very simple theory of mind) 110–  
 11, 116–17
- science, children-as-scientists  
 metaphor 134–5
- Selection Processor (SP) 142–5
- self-ascription *see* first-person/third-  
 person case
- self-knowledge 16, 209–31  
 Cartesian introspection 210–11  
 errors and disorders 214–15, 225–9,  
 230–1  
 importance 209–10  
 origins 223–6  
 simulation theory 216–23, 230  
 theory-theory of 211–16, 229
- self-reflective questions, developmental  
 evidence 9–10
- semantics  
 ascent routine 60–1  
 Fodor's VSTM (very simple theory of  
 mind) 110, 116–17  
 Representational Theory of Mind  
 (RTM) 138–9, 154–5, 171–2  
 simplicity debate 11, 36–7, 97–9  
 game theory and 16, 235–45  
 simulation cocoon 260–2
- simulation cocoon 260–2
- simulation/theory-theory debate 1–10  
 artificial intelligence and simulative  
 reasoning 17, 247–70  
 empathy case 16, 189–92, 259  
 Fuller's philosophical perspective on  
 10–11, 19–31, 54–7  
 game theory 16, 235–45  
 imagination and simulation 16, 151–  
 64, 170–83  
 information processing mechanisms  
 14–15, 109–18, 123–46, 153–6, 170–3  
 introspection and inference 12–13, 53–  
 64, 259–60  
 knowledge and decision-making  
 systems, separate implementation  
 of 13–14, 87–106  
 new experimental paradigms for  
 simulation theory 13, 68–84  
 prediction tasks 11, 33–51, 54–7  
 self-knowledge, errors and disorders  
 16, 209–31
- simulative reasoning, artificial  
 intelligence *see* artificial intelligence
- social interaction  
 game theory 16, 235–45  
 self-knowledge and 224–9
- speech-act theories 43, 60–1
- strategy testing, imagining for 157–9
- symbolic play 152
- 'tacit' theory  
 debate overview 1, 2, 5  
 empirical evidence 5  
*see also* simulation/theory-theory  
 debate
- Tees-Crane experiment  
 case for simulation theory 55–6, 57–8,  
 187, 188, 189

- circularity of simulation theory 23–5
- empathy contrasted with theory
  - method 20–1
- theory change, in childhood 7, 8
  - ability/knowledge distinctions 14–15, 109–18, 135–46
  - experimental possibilities 72–3, 75–84
  - Goldman's review of evidence 192–7
- theory- or process-driven simulation 4, 21, 23
- theory-theory *see* simulation/theory-theory debate
- third-person case *see* first-person/third-person case
- thought experiments 16, 93–7, 215–18, 230
- ToMM (Theory of Mind Mechanism)
  - innate capacity to acquire 125–7
  - metarepresentation and action
    - planning 127–33, 140–1
    - reviews of 155–6, 172–3
  - Selection Processor (SP) and Fodor's heuristic model 142–3
  - theory of capacity to acquire 140–2
- total projection 6–7
- transformation, simulation without
  - introspection or inference 12–13, 54–7
- unilateral neglect 163
- universalism, moral theory and 202
- Verstehen* 188–9
  - see also* empathy
- VSTM (very simple theory of mind) 110–17















