The map of the methods of optimisation (types of intelligence)

Type	Subtype	Illustration	Nature	Optimisation power	Master algorithm and consciousness
1. Anthropic principle	Selection between: a) possible universes b) between planets c) *Anthropic principle driver of the evolution* d) AP is a force which had protected Earth from the space catastrophes			Number of different possible universes: 10 power 500 Number of possible planets in our uni-verse: 10 power 20 *Part of evolution's optimisation power may result from AP*	Consciousness required as final result
	Hypothetical super strong AP: *a) The world exists as a result of back causation from "now"* *b) The universe is capable of self-reproducing and in the future (like creation of artifical black hole to spawn new universes - Lindde)* *c) Strong connection be-tween qualia and AP: only universe which cre-ates qualia are observ-able*				Qualia required
2.Evolution	1.Natural selection			Size of human DNA: 10 power(10power9)	Non consciousness
	2.Sex selection		Part of evolution		Use consciousness to estimate beau-ty of a partner
	3.Fight for the top of the food pyramid as a driver for accelerating evolution		*Not proved*		
	4. *Group selection*		Not proved		
	5. Evolutions of memes, cultures and languages				
	6. Genetic algorithms in AI				
	7. Evolution of evolution - speed up of it		Development of sex, brains and more ef-fective methods of mutation utilization Hyperbolic accelera-tion of evolutionary process		
3.Human intelligence	1.Rational intelligence		The ability to write scientific paper and other similar tasks	Complexity of one scientific article, like 10 power 10000	Consciousness is used, but qualia are not required
	2.Fluid Intelligence; Combinatorial mind		Quick solving of small tasks;	IQ= 100-200	
	3.Crystalized Intelligence and life experience		Database of true an-swers and skills	The ability to survive 70 years in changing environment	
	4. Child learning Intelligence		The ability of a child to learn languages from 2 to 5 years	Language complexity	Non conscious
	5.Unconsciousness in dreams		The ability of a part of the brain to create real time simulation of the world in dreams Symbolic thinking (Freud)	Comparable to the best CGI computers, probably petaflips	Non conscious
	6.Intuition		The ability to recog-nise the situation us-ing some kind of neu-ral net trained on past experience	The ability to come to principally new conclusions	Non conscious
	7.Different learnable methods of thinking: math, logic, system thinking, methodology, map creation, TRIZ, etc				
	Associative thinking: memory search				
	8. Image recognition and visual processing in visual cortex			The ability to recog-nise hundreds of ob-jects a second and create world model based on it.	Non conscious
	9. Unconsciousness in art. Visual-symbol-ic-emotional mind		Art was one of the first form of human intelligence based on pattoglyph history before writing was in-vented		Non conscious
	10. Brain plasticity		The ability of human brain to slowly reserte itself, cure and adapt		Non conscious
	11.Hypothetical quan-tum computer in the brain or Penrose-style non-linear quantum computer.		*Not proved*	*Able to prove Godel theorem*	Consciousness required
	12. Precognition and "Clairvoyance"		*Not proved, but if the ability to predict fu-ture exists, it would strongly improve any other thinking meth-ods*		Similar to intuition
	13. Consciousness and qualia		*Not proved as any useful in cognition*		Consciousness required
	14. Humanitarian mind or rationality in sense of Ivanov-Petrov		Thinking is evolving process not easily re ducible to "optimis-ation problem". Peo-ple have to think be-fore we decide what we are going to opti-mise		Consciousness required
	15. Freudian unconsciousness. Kinesteetic unconscious-ness		Using symbols to pres-ent subpressed feel-ings, in dreams, slips of the tongue etc.		Probably, subthreshold activation of neurons play role here, and results in activation of neurons sometimes, or interaction of such subtreshold acti-vations results in symbols
	16. "Right hemisphere mind"		Mind of patients with sected corpus collo-sum		Non conscious
	17. Autistic savants		Skill: 300 savants are known	Calculting power like computers in 1960th Stong ability to find prime numbers	Non conscious
	18. Human: Leonardo, Euler, Mozart				
4.Animal intelligence	1.Motor function		The ability to control hundred of muscles and reach exact mo-tion in space Cerebellum as posi-tioning mind		Non conscious
	2.Social intelligence; emotional intelligence as part of it.		Calculation of complex social relation: Wolves, primates.		Non conscious
	3.Cells as computers; Immune system as lean-ing machine. Biological body as self-regulating system			Each cell has mem-ory of 1 GB, and calculation power comparable to UM, total or-ganism has memory of 10p22 and calcu-lation power around 10p19	Non conscious
	4. Birds minds		Birds brains are much more efficient by mass than mammal-ian		Non conscious
	5. Ants and bees swarm intelligence				Non conscious
	6. Mind based on eidetic memory		It seems like some animals and humans have photographic memory, which helps them in similar situa-tions		
	7. Mind of animals with very large brain: dol-phins and elephants *Mind of predators: wolves*		They probably have language and conlex social structure.		
5.Collective	1.Collective unconscious-ness able to create languages		No one created natu-ral human languages	Human language size of 100 k words	
	2.Science			It is able to solve most complex pob-lems in 100 years period (aporisr-mately)	Self-aware, but not neccesery conscious
	3.National states				Self-aware, but not neccesery conscious
	4. Group intelligence. Wiki, forums. Social dynamics			Effective intelligence of a small group of interconnected peo-ple	Self-aware, but not neccesery conscious
	5. Market. Ascending economy				Non conscious
	6.Art history as whole process				Non conscious
6.Nature	1.The universe as large calculating machine			10 power 80 inter-acting particles	Non conscious
	2.Experiments as calculation				Non conscious
	3. Analog computers				Non conscious
7.Computers	1.Hypothetical computer programs, AIXI			Uncalculable	Non conscious
	2.Turing machines				Non conscious
	3. Existing large computers			100 petaflop max now	Non conscious
	4.Quantum computers			Hypothetically more powerful than total calculation power of the universe	
	5.Neural nets and ML				
	6.Internet. Search engineers, databas-es, exchange nasda, dis-tributed calculations			Total calculating power around 10 power 20 flop	Self-aware
	7.Different AI models and projects. Differ-ent learner algorithm: Bayesian				
	8.Moore's law				
	9. Hypothetical self-improving AIs				Self-aware and probably conscious
	10. Exhaustive method. Check all possible solu-tions.		Most stupid inteli-ligence. Depends on reliability of the checkerg system		Non conscious
	11. Intelligence of possi-ble owners of our simu-lation				
	12. Swarm intelligence. Cellular automata.				Non conscious
	13. Augmented humans a) A person with his computer b) Post-humans c) Multiple software products OS like MS Windows Corporations Wolfram Alpha, Google				
8.Mathematical intelligence	1.Intrinsic properties of mathematical objects, like primes distribution and Mandelbrot set				Non conscious
	2.Logic *3.Mind of archetypal objects, ghosts and UFOs (if any exists)*				Non-human consciousness???
9. Non-human hypothetical minds	*4.Mind of aliens (if any)* *5.Black holes as compuc-ers* 6.Logos				Non-human consciousness???
	7.Boltzmann brains 8.Possible minds in mathematical universe				Non-human consciousness??? Conscious