Immortality Roadmap

Approximate time line 2015 2050 2020 2030 2040 Surf the wave of *longevity escape velocity* Plan A Step 5 Solve Achieving Negligible Rejuvenation A New Body Life extension Cyborgization Existing (map, link) Senescence of the Brain Transplanting cloned organsArtificial organs • Enhance natural reparation **Problems Proven medicines** that slow down aging Physical fitness: running, dance
Nutrition: vegetables, no red meat, calorie • Growing new body for transplantation processes: immune, protein-shapir Aging vaccines: delivery of longevity gene Neuro-implants that serve as a senescent cells elimination using genetic engineeringSelf-replicating nanobots for treatment Participation in clinical trials of new aging brain-computer interface restriction, nutrients balance Controlled regeneration of tissue Psychology Control of neural development a SURVIVE Reduce weight, blood pressure, sugar, and of injuries and cell cyborgization and organs using growth factors Head on life support for temporal Genetically modified stem cells • Nanobots in brain tissue Create healthy and robus Do not smoke or drink Non self-replicating nanobots Scientific approach to treatment Close interpersonal relationships Bioengineering neurons personality
• Self-sufficiency • Brain in vat — life support of brain tissues which delete bad proteins and Slowing biological clock
Regulation of high level control: personal physician senescent cells outside the body • A **safe** country with long life expectancy • Creation of a cyborg, most of which body Uploading Regulating **gene networks** hormones, nerves, brain, mood Socially adequacyThe ability of self-• **Risk** aversion — fasten seat belts • Cryoreanimation after several hou parts are artificial after death Death prevention • Backing up information from the with nanobots Wearable security and resuscitation system survive until creation Geroprotector candidates: metformin, Age-related diseases become curable: • **Gradual transfer** of personality to a cancer, cardiovascular diseases and digital substrate of Strong AI • Medical insurance for a quality clinic • Full checkout once a year Permanent elimination of risk factors: high Cure chronic and neglecte Personal medicine: 23andMe blood pressure, obesity, plagues Technologies of **resuscitation** and life suppo Elimination of **other risks** of death: Price: Social Increasing depends of age, Social relation Self-Effectiveness from 0 to millions USE Research Funding Introduction into Scientific Politics **Focus** on achieving immortality • Making friends with bio-scientists Self-education in the field of biotech, brain Clinical Practice Experiments Forming social demand • Political power acquired by science; read "Longecity" Inclusion in government programs
WHO admits that aging is a disease
Persuasion of billionaires supporters of life extension Positive and rational attitude • Guarantees of quick development and • Acceleration of clinical trials and Gain resources — material, social **Biomarkers of aging:** discover and use them to test therapies accessibility of the life extension approval of new drugs by the FDA **Crowdfunding** of scientific projects Prevention of global risks Reducing the cost of introducing drugs Creating ageless animals Money from **pharmaceutical companies**New directions for **technical giants** (Googl AI that is capable of self-improve Lobbying and participation in elections • Delivery of longevity genes Promoting value of life extension and reaches superintelligence Legalization of cloning and head Startups and invest funds Drug screening AI managing the development of Management of microbiota Be an exampleTalk about the importance of immortality Rebranding "Aging" Creation of an infrastructure for aging • Data analysis using specialized AI Military funding for regeneration and and write texts Control of the body on the basis of • **Groups** of like-minded individuals Invest in FAI genomic networks • Street actions and art projects Creation of a **computer model** • Parties and lobbying Donate to MIRI and other AI research • Demonstration of life extension of the human organism Promote AI safety in animal models Long-term Storage Revival from Cryonic Storage Successful Signing of a Cryocontract Plan B Cryopreservation

• Living near a cryofirm Financial, legal, and organizational Signing and payment of the contract
Wearing a cryotoken
Persuading relatives that cryonics is Controlled defrosting with damage correction
 Transfer of information from the brain to the computer • Storage technology without complex • Correction of errors using lifelog data Cryonics crew on standbyHeart rate monitors that automatically Cryonics Legalization of Cryonics Scientific Studies Revival Technologies Starting a Cryocompany Development of cryoprotectants
 Reversible freezing of animals, • Law about cryonics which declares right to 10k to 300K USD **Scanning** and mapping the brain • **Investment** in cryo-business and Legalization of euthanasia with subsequence human organs and tissues of the brai Nano-robots for the restoration of cells Cryo-reanimation of the wounded cryopreservation • **Defrost** and recovery of neural activity • Demonstrating **proof** of cryonics on Chemical fixation State support • Guarantee of long-term storage Plan C Backup **Gathering Information** Improving Reconstruction of the Identity of the Deceased Continuous video recording Encourage other people to invest in Digital Special questionnaires: diaries, Using AI to analyze information • Durable optical discs (eternal M disks) **Digital footprint** in social networks memoirs, drawings, complex creative • Create digital "hoards" in internet and Construction of a **accurate model** of personality and servant-avatar, exo-self Solving the problem of **identical copies** underground hoards Study brain science and uploading Brain data: collecting EEGs **Immortality DNA**: samples, 23andMe 100-10K USD map, link Immortality of Qualia Simulation with Plan D Quantum Personality and other Theories from the Past immortality Immortality econstruction by the of Self future AI • Access to the past thanks to Everett interpretation is true • Perhaps we live in a computer The emergence of Small Chances that Live an **interesting** and the discovery of **new physical** superintelligence in our lifetime Qualia are eternalShift of identity on eternal nportant life effects (quantum teleportation, Universe is actually infinite The sharp acceleration of Some simulations model The stronger the AI, the less Immortality and uncountable number of my immortality (the after-life) or are nformation it needs to copies exist in it • Restoring the individual or New ideas of life extension avatar-games for simulators Consciousness as a center of accurately resurrect the basis of this information already Exists • Quantum immortality rises actualization in the multiverse Investing in creating • Cryonics more likely to work share of such avatar-simulations Soul proved to exist by Friendly AI if quantum immortality is true scientific method and is eternal Future AI may find new ways to return people to life Explanation: Each plan comes into play in the event of the failure of the previous. If pursuit of indefinite life extension fails, for instance,

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Immortality

Immortality with help of Strong AI

- **Unlimited lifespan** using digital backup and AI protection
- **Upgrade**: increased intelligence, adding new capabilities
- Expanding the scope of possible experiences, qualitative new experiences, and hedonic enhancement
- Creation of detailed, realistic simulations and artificial life within them
- Detailed reconstruction of human past and people lived before
- The **colonisation** of the solar system
- Colonisation of the Galaxy
- Exploring the **Universe**, solving the question of the end the Universe

Immortal body

Biological body + resurrection technology

Distributed biological brain (neuroweb)

Emulation with identity transfer and strong backups

Evolution into Superintelligence

Integration with Superintelligence

Creation of immortal soul

Creation of multidimensional being using parallel worlds

Explanation: Each plan comes into play in the event of the failure of the previous. If pursuit of indefinite life extension fails, for instance, then it is necessary to opt for cryonics or digital backup. Each of the three primary plans (A, B, and C) needs to be pursued simultaneously in case one of the others fails. If they fail, all we have to fall back on is one of the wild cards in part D. This map is a simplification created for ease of use. A more complete description can be found in the book "Immortality", by Alexey Turchin.

Titles are marked with blue for personal efforts and green for public, which can be realized only in the group. Yellow highlights hypothetical possibilities that do not depend on our actions. This map was created with the assistance of Michael Batin and Michael Anissimov, supported by Dmitry Kamensky in 2012-2015.

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