Top 100 Great Filter Threats

Douglas C. Youvan
doug@youvan.com
June 14, 2023

1. **H-Bombs**: The self-destruction of human civilization through thermonuclear warfare.
2. **GoF'd Viruses**: Engineered (Gain of Function) viruses causing a global pandemic.
3. **AI Singularity**: The rise of a superintelligent AI whose goals don't align with humanity's.
4. **Climate Change**: Environmental changes that could make the Earth uninhabitable.
5. **Nanotechnology Disasters**: Misuse or uncontrolled replication of nanomachines (grey goo scenario).
6. **Resource Depletion**: Exhaustion of natural resources without finding renewable alternatives.
7. **Biotic Crises**: Mass extinction events due to over-hunting, habitat destruction, etc.
8. **Asteroid Impact**: Large asteroid or comet impacts causing a mass extinction event.

9. **Cosmic Threats**: Events like nearby supernovas, gamma ray bursts, or encounters with dark matter.
10. **Biological Limitations**: Potential inherent limits to the longevity of a species due to genetic or evolutionary constraints.
11. **Nuclear Fusion Failures**: The inability to harness fusion energy, potentially limiting our technological progress and survival in a resource-depleted future.
12. **Alien Invasion or Intervention**: Potentially destructive encounters with advanced extraterrestrial civilizations.
13. **Self-Imposed Isolation**: Choosing to limit our own growth or exploration to avoid potential dangers or out of respect for the natural universe.
14. **Inability to Leave Our Solar System**: Technological or physical constraints might prevent successful interstellar travel, stranding us on a dying planet or in a dying solar system.
15. **Disintegration of Social Order**: Collapse of civilization due to political, economic, or social unrest on a global scale.
16. **Biological Manipulation Disasters**: Unintended consequences of genetic manipulation, whether it be in humans, animals, or plants.
17. **Global Infertility**: A worldwide decline in human fertility rates leading to population decrease and potential extinction.

18. **Post-Humanism**: Evolution or transformation into a post-human state that may not be recognizable or survivable in our current form.
19. **Artificial Reality**: The development of a virtual reality indistinguishable from real life could result in humanity choosing to live within it, potentially leading to physical extinction.
20. **Existential Despair**: A psychological scenario where humanity, due to nihilism or a perceived lack of purpose, chooses extinction.
21. **Solar Flares/CMEs**: Large-scale solar events could wreak havoc on electronics and power grids, potentially causing global catastrophe.
22. **Super Volcanoes**: An eruption of a super volcano, such as the one beneath Yellowstone National Park, could cause a global nuclear winter scenario.
23. **Nuclear Meltdown**: Catastrophic nuclear reactor failures causing widespread contamination and health issues.
24. **Artificially Created Black Holes**: Advanced technology that could inadvertently create a black hole, swallowing Earth or our solar system.

25. **The Heat Death of the Universe**: As the universe expands and cools over trillions of years, it may eventually become inhospitable to life as we know it.
26. **Global Economic Collapse**: An unmanageable economic crisis could lead to societal collapse and potential extinction.
27. **Global Water Crisis**: Exhaustion or contamination of fresh water resources.
28. **Global Food Crisis**: Catastrophic failure of global agriculture due to climate change, disease, or pests.
29. **Global Soil Degradation**: Widespread soil erosion and degradation making it difficult or impossible to grow enough food to support human populations.
30. **Synthetic Biology Disasters**: Accidental release or misuse of synthetic organisms that could disrupt ecosystems or prove harmful to humans.
31. **Pandemic of Antimicrobial Resistance**: Widespread resistance to antibiotics leading to untreatable infections.
32. **Lack of Adaptability to Space**: Humanity may be too biologically adapted to conditions on Earth to successfully colonize other planets.
33. **Global Thermonuclear Fusion Reactor Accident**: A mishap in a controlled fusion energy plant could lead to massive energy release.

34. **Self-replicating Space Probes (Von Neumann Machines)**: If used destructively, these could consume planetary systems or even galaxies.
35. **Malignant Physics Experiments**: The creation of dangerous scenarios in experimental physics, such as false vacuum decay or strange matter formation.
36. **Destruction of the Ozone Layer**: Persistent damage to the ozone layer resulting in increased harmful radiation reaching the Earth's surface.
37. **Irreversible Evolutionary Divergence**: Evolutionary pressures causing humanity to diverge into separate species, some of which may not survive.
38. **Overpopulation**: Severe strain on resources due to overpopulation leading to societal collapse.
39. **Genetic Homogenization**: A lack of genetic diversity in humans leading to increased vulnerability to diseases or environmental changes.
40. **Dark Energy Expansion**: The universe's expansion accelerates due to dark energy, eventually leading to a "Big Rip" scenario where all structures, down to atoms, are torn apart.
41. **Reliance on Fragile Technology**: Over-reliance on complex technology that could fail, bringing down civilization.

42. **Accidental Creation of Destructive Life Forms**: Unintentional creation of destructive life forms through genetic engineering or synthetic biology.
43. **Universal Simulation Shutdown**: If we're living in a simulated universe, the shutting down of that simulation by whatever intelligence runs it.
44. **Psychological Evolution Stagnation**: Failure to psychologically adapt to a rapidly changing world, leading to widespread mental health crises and potential societal collapse.
45. **Warfare Escalation**: An escalation in the destructive capabilities of warfare (beyond even nuclear) leading to global catastrophe.
46. **Decay of the Proton**: If protons can decay, as some theories suggest, then all matter might eventually disintegrate.
47. **Invasive Alien Species**: Alien organisms introduced to Earth, either intentionally or accidentally, that outcompete native life.
48. **Technological Regression**: A loss of technological knowledge or capability, leading to a societal collapse.
49. **Chemical Pollution**: Widespread contamination of the environment with harmful chemicals leading to ecosystem collapse and health crises.

50. **Extraterrestrial Pathogens**: Exposure to alien microbes or viruses, against which we'd have no natural immunity.
51. **Cyber Warfare**: A large-scale cyber attack that takes down essential infrastructure, leading to widespread chaos and potential societal collapse.
52. **Collapse of the Global Internet**: The global internet infrastructure failing, resulting in widespread economic and social disruption.
53. **Hypervelocity Stars**: These fast-moving stars could potentially cause catastrophic damage if they were to pass through our solar system.
54. **Magnetosphere Disruption or Collapse**: The Earth's magnetic field protects us from harmful solar and cosmic radiation. A disruption or collapse could expose life on Earth to these dangerous elements.
55. **Rogue Planets**: These are planets not bound by any star's gravity. If one were to enter our solar system, it could wreak havoc on the planets' orbits and potentially lead to Earth's destruction.
56. **Quantum Suicide of the Universe**: A speculative scenario where quantum effects cause the universe to cease to exist.
57. **Ecophagy**: A scenario where self-replicating robots consume the entire biosphere.

58. **Rapid Geological Changes**: Changes such as earthquakes, tectonic shifts, or the eruption of undersea volcanoes that could potentially disrupt civilization.
59. **Loss of Planetary Magnetic Fields in Space Colonies**: If we manage to colonize other planets that lack a protective magnetic field like Earth's, those colonies might be vulnerable to solar and cosmic radiation.
60. **Sudden Vacuum Energy Change**: If the vacuum energy of the universe were to change, it could lead to a universe-wide event that might destroy all life.
61. **Intentional Misuse of Biotechnology**: Intentionally created bio-weapons that get out of control.
62. **Coronal Mass Ejections (CMEs)**: A significant CME could cause a geomagnetic storm that could devastate power grids and satellite communication.
63. **Technological Stagnation**: A scenario where humanity fails to continue advancing technologically, resulting in potential inability to solve emerging crises.
64. **Exposure to Unknown Physics**: As we delve deeper into our understanding of the universe, we may encounter unknown physical phenomena that could prove hazardous.
65. **Accidental Ignition of the Atmosphere**: Although deemed highly unlikely, there were initial concerns during the first

nuclear tests about a potential chain reaction igniting the Earth's atmosphere.

66. **Technological Convergence Catastrophe**: The simultaneous maturation of several high-risk technologies, leading to a scenario where managing the combined risks becomes impossible.
67. **Global Power Imbalance**: The rise of a global power that misuses its influence, leading to widespread conflict or oppression.
68. **Loss of Essential Microorganisms**: The extinction of critical microorganisms could disrupt ecosystems or make life as we know it impossible.
69. **Breakdown of the Biosphere**: A large-scale disruption of the biosphere, potentially due to human activities, leading to a collapse of ecosystems.
70. **Global Surveillance State**: Technological advances could lead to oppressive surveillance states, potentially causing widespread conflict and societal breakdown.
71. **Advanced Weapon Systems**: Uncontrolled development and use of advanced weaponry, beyond nuclear, that could result in global catastrophe.

72. **Uncontrolled Climate Engineering**: Attempts to mitigate climate change through geoengineering could have unforeseen and potentially catastrophic consequences.
73. **Collapse of Space-Time**: Advanced physics experiments or natural phenomena could potentially cause a catastrophic disruption of space-time itself.
74. **Creation of a Hostile Artificial Biosphere**: Bioengineering could inadvertently lead to the creation of a hostile artificial biosphere.
75. **Global Dependence on a Single Crop or Animal Species**: Over-reliance on a single crop or animal species for food could lead to catastrophe if that species were to suddenly die out.
76. **Toxic Waste Contamination**: Accidents or mismanagement of toxic waste could lead to large-scale environmental and health disasters.
77. **Off-World Contamination**: Bringing back extraterrestrial life or substances that are harmful to life on Earth.
78. **Invention of Destructive Technologies**: The invention of new technologies that have catastrophic potential, such as antimatter weapons.
79. **Global Blackout**: A widespread, long-term power outage could lead to societal collapse.

80. **Critical Infrastructure Failure**: Failure of critical infrastructure, such as water supply systems, transportation networks, or healthcare systems, leading to societal collapse.
81. **Cybernetic Organism Failures**: If humanity incorporates technology into our bodies, failures of those systems could have catastrophic consequences.
82. **Pandemic of a Prion Disease**: Prions are infectious proteins that can cause diseases like Mad Cow Disease. A pandemic of a prion disease could be catastrophic.
83. **False Belief in Safety**: Widespread, misplaced belief that a dangerous technology or situation is safe, leading to its uncontrolled proliferation.
84. **Universal Ignorance**: A scenario where humanity intentionally or unintentionally loses knowledge of important sciences, leading to a regression in technology and society.
85. **Hostile Extraterrestrial AI**: Encountering an AI created by an extraterrestrial civilization that is hostile to humanity.
86. **Space Debris**: Accumulation of space debris could make space travel and satellite deployment increasingly difficult, isolating humanity on Earth.
87. **Particle Accelerator Accidents**: Unintended consequences from high-energy particle experiments could potentially lead to unforeseen disasters.

88. **Ocean Acidification**: Rising levels of carbon dioxide could cause the oceans to acidify, disrupting marine life and potentially causing a collapse in the food chain.
89. **Misalignment Between Human and Animal AI**: AI developed for animal use could potentially turn against humans if not properly aligned with human interests.
90. **Uncontrolled Spread of Genetically Modified Organisms (GMOs)**: GMOs could potentially disrupt ecosystems if they spread beyond their intended environments.
91. **Environmental Hormone Disruptors**: Chemicals that disrupt the hormonal systems of animals could cause widespread ecological damage and potentially harm humans as well.
92. **Societal Dependence on Unstable AI**: If society becomes overly reliant on AI systems that aren't entirely stable, a failure in those systems could lead to societal collapse.
93. **Failure of Cryonic Revival**: If civilization begins to rely on cryonics (freezing people with the intention to revive them in the future), a failure in revival technology could lead to a significant loss of life.
94. **Overuse of Antidepressants or Other Psychoactive Drugs**: Widespread dependency on these drugs could lead to societal issues or health crises.

95. **Radiation Leaks or Accidents**: Large-scale radiation leaks, like those from a nuclear power plant, could cause widespread health and environmental damage.
96. **Fermionic Condensate Catastrophe**: Manipulation of fermionic condensates in laboratories could theoretically lead to uncontrolled chain reactions.
97. **Uncontrolled Virtual Reality (VR)**: If VR technology becomes advanced and widespread, it's possible that humanity could retreat into virtual worlds, leading to societal neglect and potential collapse.
98. **Loss of Survival Skills**: As society becomes more technologically advanced, basic survival skills may be lost. If technology were to fail, this could lead to serious consequences.
99. **Collapse of the Bee Population**: Bees are critical for pollination. A collapse in their population could lead to a significant disruption in food production.
100. **Total Dependence on Machine Intelligence for Survival**: If we become fully dependent on AI for survival, any major malfunction or hostile takeover of these systems could lead to human extinction.