

## Glossary

This book is full of terms new to the reader. This is because "new ideas need new labels" and this book contains many new ideas. It may be useful therefore to assemble all these new terms in a glossary so that readers can consult them as the need arises. Alternatively, the glossary may serve as an object of study in its own right. Not all of the terms listed and defined here have been coined by me. Those that are NOT original are asterisked (\*).

**Anthropic Principle (\*)** The strong form of this principle states that the values of the constants in the laws of physics are so fantastically improbably finely tuned to allow life to exist in our universe, that it looks plausible that the universe was designed with life in mind, i.e. that it was created by some godlike being. The anthropic principle has made a lot of physicists and astronomers more tolerant of traditional religious beliefs in an omnipotent creator.

**Artificial Brain (\*)** My main aim in life is to make artificial brains, which I do in the following way. I evolve neural net circuit modules directly in hardware at hardware speeds in about a second and then assemble zillions of them in humanly defined artificial brain architectures to control robots. My fear that long term brain building will lead to a major war late this century has been one of the main motives for me to write this book, i.e. to sound the alarm.

**Artificial Embryology** A hypothesized technology in which engineers use techniques borrowed from the biological study of embryology, i.e. how fertilized eggs grow into animals and plants, to build products. A form of artificial DNA will provide growth instructions for artificial cells to grow, divide, and differentiate, to build complex structures. (See the definition for "embryofacture" below). Artificial embryology offers an alternative engineering approach to using zillions of nanoscale robots (nanots) to build nanotech-based products.

**Artilect** An abbreviation of the term "artificial intellect," or "artificial intelligence" or "massively intelligent machine." Building artilects will be made possible by 21st century technologies. I believe that a major war over the issue of whether artilects should be built or not will take place by the end of this century. This book's theme is a discussion of the likelihood of an "Artilect War," hence the book's title.

**Artilect Era** A hypothesized, possibly post-human, era in which the artilects have become the dominant species. This book speculates a little on what these artilects might do to occupy their immortal lives. Their godlike abilities might allow them to experiment with the creation of new universes. Perhaps our universe is the toy of an advanced artilect.

**Artilect Issue** The issue is whether or not human beings should build artilects this century. As 21st century technologies enable increasingly the construction of artilects, an "artilect debate" will arise. Human society will split into two major groups, the "Cosmists," in favor of building them, and the "Terrans," opposed. I believe that disagreements on this issue will become so strong and passionate, that they will very probably lead to a major war, the "Artilect War," before the end of the 21st century.

**Artilect Productions Inc** I am a member of a small independent Hollywood movie company called "Artilect Productions Inc." My personal motivation in helping to make a movie on the artilect theme is to spread to a worldwide audience, the idea that an Artilect War may be coming, so that people will start thinking about it. I want to see the creation of what I call the "artilect debate." A Hollywood movie, if it can be got off the ground, would be the most effective means of spreading the word. We want to call the movie, "Artilect."

**Artilect War** A hypothesized war late in the 21st century between two human groups, the "Terrans" and the "Cosmists" over the issue of whether or not humanity should build artilects. For the Cosmists, building artilects will be like a religion. To the Terrans, building artilects will be the creation of humanity's potential exterminators. The Cosmists will be inspired by awe, the Terrans by fear. Since the stake is the survival of the human species, passions will be extreme, and the war will be major. It may cost billions of human lives -- "gigadeath." Note the distinction between an "Artilect War" and a "Species Dominance War." See the definition below.

**Big Picture (\*)** In the context of this book, the "big picture" includes such things as the universe and its immensity, the idea that human beings could make artilects, that there are much bigger things than the trivial pursuits of human beings. Cosmists see the big picture. Terrans don't or don't want to. Terrans want human beings to remain the dominant species on the planet. Cosmists have a more cosmic perspective.

**Big Things** The big things, in the Cosmist sense, are the possibilities of building artilects, building godlike, immortal, virtually omnipotent creatures with intelligence levels potentially

trillions of trillions of times greater than the human level, which could explore the universe, answer the deep existential and scientific questions etc. The big things are the godlike things that would be within the grasp of the artelects, but only if the Cosmists are free to build them and are not stopped by the Terrans.

**Brain Architect (BA)** A brain architect designs artificial brains. Its what I do. I evolve neural network circuit modules at electronic speeds and then assemble them into artificial brain architectures. To know how to do that I need to be a brain architect.

**Brain Builder** I am a brain builder, i.e. a builder of artificial brains. Now that the new field of evolvable hardware -- see the definition below -- is established, I can evolve neural net circuit modules at electronic speeds. This is fast enough to make practical the creation of zillions of them in a reasonable time and then to put them into humanly defined artificial brain architectures. I believe that the brain builder industry will eventually dominate the world economy, as brain-based products with growing artificial intelligence become very popular with the public. The brain builders will be responsible for the creation of the artelect problem.

**Brain Building Industry** Once the brain building pioneers show that the concept of building artificial brains is valid, it is very likely that industry will get into the brain building business, creating such products as household cleaner robots, teacher robots, conversational robots, etc. Brain-based computers will eventually dominate the computer industry and be worth more than a trillion dollars worldwide by the year 2020. Well into this century, the brain building industry will be the mainstay of the global economy.

**Climbing Time** The amount of time in years between a) the moment when the artelects show the first signs of intelligence and

**I believe that this book is of profound importance. If many decades into the future, Hugo is proven to be correct in saying that “the species dominance issue will dominate our global politics this century,” then he will have become one of the major thinkers of the 21st century. With no offence to Hugo, I hope that he will be shown to have been wrong, to be shown to have exaggerated, and overreacted; because if not, the fate that he is suggesting will befall our grandchildren, is too horrible to grasp fully for all humanity, what he would call “gigadeath!”**

**No matter where you sit in the Cosmist-Terran opinion spectrum, this is a book that cannot and should not be ignored. It is too important and too disturbing to be summarily dismissed. I advise that you read it, then read it again, and try to find faults with Hugo’s logic and judgment, so that we can all look forward to a peaceful prosperous 21st century. Because, if Hugo’s vision is correct, the hellish nightmare, as portrayed in films such as *The Terminator*, will become a reality.**

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