

Write an essay on the relationship between evolution and one or more of autonomy, intelligence, and learning.

The following passage is largely based on the first chapter of Life 3.0 by Max Tegmark.

In the history of our Universe, at some point, groups of atoms got arranged into complex patterns that could maintain and replicate itself. Considering life as simply a process that maintains its complexity and replicates itself.

Evidence suggests that life arrived on Earth almost 4 billion years ago. Some life forms outcompeted the rest. Various life forms were able to collect information from their environment and act back.

There are life forms that do not learn over their life time such as different bacteria and some that do learn a lot in their life time.

We can roughly categorize them into two types of life forms: Life 1.0 and Life 2.0. Life 1.0 is when both hardware (physical form) and software (information processing system) of life is fixed over a life time and only evolves over generations. Whereas Life 2.0 is when the hardware remains same but the software improves typically by learning. Life 1.0 arrived about 4 billion years ago and Life 2.0 arrived about a 100 millennia ago.

Although the line between these life forms is blurry it is nonetheless an useful categorization.

Life 2.0 has significant advantage over 1.0, allowing it to be more smart and flexible. Life 1.0 can only adopt by changing over generations through mutations whereas Life 2.0 can adapt quickly within a lifetime. One can conceptualize what is termed as Life 3.0 where the life forms can not only improve their software but also their hardware. They would have significant upperhand over Life 2.0 in terms of how rapidly they can improve or how intelligent they can be.