

RESOLUTION OF FREE WILL AND DETERMINISM

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We resolve the old problem of 'free will versus determinism'. We will put this in a context, and that context is a coherent deterministic macroscopic physical theory.

1. DETERMINISTIC PHYSICAL THEORY

Our Four-Sphere Theory is a successful physical theory with geometric model of a four-sphere with linear undeformed time and undeformed space. A single force called S4 Electromagnetic Law governs all dynamics in the universe. Fundamental quantities are fields on the four-sphere and particles of nonzero width are proven to exist rather than assumed. There are no closed systems at all and conglomerations of electromagnetically charged particles follow dynamics only by S4 EM law. Therefore all things in all parts of the universe do jointly determine the physical dynamics of any thing; thing being geometric configuration of charged particles in a four-sphere. The dynamics is deterministic. This is our realistic model of the actual universe.

2. BIOLOGY OF LIVING THREE-DIMENSIONAL ORGANISMS IN S4 UNIVERSE

The physical universe is an evolving hypersurface $M(t) \rightarrow S^4(R)$ with linear time $t \in \mathbf{R}$. Time extends back to negative infinity and forward to positive infinity.

We consider physical organisms as volumes $V(t) \subset S^4(R)$ and we consider physical biological organisms as $V(t) \cap M(t)$ as the physical slice of four-dimensional volumes.

Now we consider the Darwinian point of view. The volume $V(t)$ is a biological organism if it contains K adaptive mechanisms (A_1, \dots, A_m) evolved over a period of time $T \sim 200My$ in millions of years.

The organism is adapted for reproduction but all dynamics in the universe is deterministic, which includes $V(t)$

3. FREE WILL IS A BIOLOGICAL ADAPTATION

From the last section, we see that even though the physical model is deterministic, no will at all is present in the model, since it is a deterministic physics model. When the volume $V(t)$ is a human being or another organism with Free Will, we consider free will to be a function of the evolutionary adaptations (A_1, \dots, A_m) . In particular Free Will is an entirely different sort of concept than determinism. We can easily see that there is no incoherence in this model because a deterministic universe produces situations where following deterministic course of the universe, the organism $V(t)$ produces offsprings.

4. MISUNDERSTANDINGS OF FREE WILL AND DETERMINISM IN THE PAST

In the past determinism and free will were considered conflicting because it was unclear that they occupy completely different levels of existence. Free Will is an evolutionary adaptation of an organism, and the sort of freedom that is implied is the choice to take certain decisions and actions. All such decisions and actions take place in a deterministic, eternally recurrent universe. To resolve old confusions, the determinism of the universe does not constrain free will but in fact is a precondition for and an enabler for what we might consider to be free will.

5. THE SORT OF DETERMINISM THAT DOES NOT EXIST

Since Free Will is an evolutionary adaptation, we can now contrast Free Will to the sort of Determinism that is a potential problem: and that is the determinism of DNA to all actions of an individual in a rigid manner. This sort of Determinism does not exist because human beings have complex evolutionary adaptations that lead to decision making and thought and action.