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On the epigenetic properties of DNA information

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Commonly, the genome is considered as a collection of functional units responsible for particular traits of an organism. This idea turns out to be inadequate urging for an epigenetic extension. The amount of genes in humans, about 20,000 is low for purposeful activities. Appealing to the non-protein coding part of the genome is futile since even in its entirety the genome does not contain sufficient information for full organism control. In our view, the DNA molecules present pseudo-random numbers with slight classification adaptations. Establishing biological individuality, the DNA information serves as a multi-access code for Cloud Computing and thus acquires necessary epigenetic facilities. Physical foundation for this supposition, a sort of quantum computing in the Holographic Universe, has been described elsewhere. The conventional interpretation of the DNA without epigenetics has limited operational significance. Consider for illustration a population of telephone customers with two types of area code "genes": 406-xxx-xxxx (Montana) and 407-yyy-yyyy (Florida); so, revealing that some individuals have furs one might treat the corresponding "gene" as a factor responsible for this circumstance. Another line of reasoning: suppose someone wants to build a car from scratch; a straight 20,000 words text with instructions could not be enough; however, such a text having appropriate references to manuals may suffice. With the suggested paradigm of Epigenetics coming from Cloud Computing the construction of an organism occurs not by the information that the genome contains, but also by the references that it provides.

Biography

Simon Berkovich received MS in Applied Physics from Moscow Physical-Technical Institute (1960) and PhD in Computer Science from the Institute of Precision Mechanics and Computer Technology of the USSR Academy of Sciences (1964). He played a leading role in a number of projects on the design of advanced hardware and software systems. He has several hundred publications in various areas of physics, electronics, computer science, and biology. In 2002, he was elected as a member of the European Academy of Sciences "for an outstanding contribution to computer science and the development of fundamental computational algorithms".

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