

2-3 paragraphs



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Virus alive Viruses are today thought to be at the edge between the living and the non-living, they can reproduce and metabolize only when inside a host, and not otherwise. Viruses first began their journey in biological science as living organisms, because they were identified as disease-causing, gene-bearing living beings. But by 1935, they were recognized as packages of complex biochemicals incapable of metabolic functions, or in other words, non-living. Then further study revealed that viruses have distinct genetic make-ups which become active once they occupy a host living cell, and they then use their genetic code to perform most metabolic functions in a parasitic way.

This debate on whether viruses are living or non-living continues, and challenges our very definition of what is alive and what is not. Viruses are thought to be not alive on their own, but with a potential for life if they can find a host. All living beings have a critical complexity which lets them autonomously perform metabolic functions for their own survival and since viruses lack this critical complexity, they are on the edge of life. They are not fully alive but not completely inert either, as they can affect living beings in tremendous ways.

The genetic code of the Mimivirus, for instance, is extremely complex, and makes it quite similar to parasitic cellular organisms. It is in this complexity of genetical make-up that the true significance of a virus lies, because it enables the virus to program the host cells in ways that could unexpectedly change the direction of the host's evolution as some of the virus's genome becomes a permanent part of a host's genome. Some of the genomes that may seem to have come into the human genetic make-up through bacteria may have actually originated in a virus. Thus, despite being on the

borderline of life, the role of viruses in living beings and evolution needs to be considered at length in order to fully understand the nature of life and its evolution.