

2.13 The human biosphere

Humans like to think of themselves as self-determined individual who make their own decisions on their fate. Even when humans lose control over their minds, in anesthesia or under the influence of hallucinogenic or psychotic drugs, humans think of it as a consequence of their own choosing.

But the idea of human self-determination is grossly overstretching scientific data. Overwhelmingly, each of us is the subject of debate. Of course, as Jean-Paul Sartre, a famous humanist idealist, once stated: "You can always make something out of what you are made into." Just don't be overly optimistic about the extent as to which you are the master of your destiny.

The competing forces that, every second of your life, pull you into one direction or another, are multiple. Your genes and your upbringing, the Zeitgeist and your peers, and the condition of the biosphere at your geography.

But wait a moment! We are not yet done curtailing your freedom of choice.

Because there isn't just one human biosphere, the external one. Humans, each of us, are also a biosphere in themselves. Each of us is host to a greater number of viruses and bacteria than humans walk planet earth.

And it's not that our symbiotic bacteria would be in our guts to help us digest our food. They are there for their own agenda. Sure, there are also fungi, protozoa, and other organisms commonly called parasites. But let's just focus on viruses first.

Viruses have a very fast evolutionary pace indeed. They can go through many generations in a matter of an hour. They multiply like crazy. Viruses go viral, so to speak.

And they adapt to us, their host, faster than we adapt to them.

It's generally not the intention of viruses to kill their hosts. It's probably rather a stage in their evolution.

Do we adapt to viruses or do viruses adapt to us? Fact is that old viruses (those that have been around us for a long time), like herpes viruses, often don't kill, and can accommodate themselves in a human host for decades.

Newer viruses, like HIV, are often more virulent.

Viruses optimize to exist in the largest possible number, and for as long as possible.

For this purpose, viruses modify a large range of behaviors of their hosts.

It's no accidental coincidence that rabies-infected dogs salivate beyond what is normal, and bite randomly. It's symptoms and behavior induced by the virus to give it an avenue to propagate.

And it's not our immune system that makes us sneeze when carrying an influenza virus. It's a series of events, induced by the virus, via sure-fire physiological modifications in the host.

And how about herpes viruses that spread by genital contact? Such viruses have a vital interest in a host's sexual promiscuity, up to an old age.

So, a good herpes strain as a cure for low libido and erectile dysfunction?

You can bet on it. And it won't stop there.

Humans will pharm (or was it "farm") viruses as treatments for all kinds of maladies, and if there will ever be medications that expand the human life span to hundreds of years, viruses, and viral vectors, will have a crucial role to play.