

The Four Horsemen of the Apocalypse

Back in 1980 novelist WILLIAM S. BURROUGHS addressed the Eco-Technic Institute. A transcript of his 'prophetic' (?) talk.

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By William S. Burroughs

I'm speaking here as a writer of fiction, and of course many of the hypotheses and theories and ideas and suggestions that I will put forward may horrify a scientific audience. But they're to be seen from a fictional point of view. My subject is *The Four Horsemen of the Apocalypse*, which were Famine, Plague, War, and Death...

Portentous and purposeful as the priest advancing on a dying man to administer the Last Rites, so the four caballeros by their solid presence indicate that Time has been called for that particular biologic or sociological experiment. Closing time, gentlemen... dinosaurs bellow piteously, Famine saddles up his cayuse and gallops through swamplands leaving a dustbowl behind him... and the outmoded dinosaurs subside into museum skeletons, gaped at by human spectators. And the day of the spectators will come too.

At the present time, the situation of course with regards to the Four Horsemen is much more complicated than it was before man appeared on the scene, there the most important Horseman was probably Famine. At the present time, the subject of the experiment, in this case the human species, can to some extent control the conditions of the experiment, but this isn't such an advantage as one would think since they cannot control themselves. The human creature has demonstrated through the centuries a stubborn disinclination to control himself. However, if I may indulge in whimsy, had we been dinosaurs we might have built great dams to preserve supplies of water and protect our way of life and we might have hunted down the despicable mammals as the egg-sucking rats they were. Some have advanced theories that the mammals ate the dinosaurs' eggs and undermined them that way though many other factors were at work in the disappearance of the dinosaurs.

There is such basic disagreement as to how existing conditions can be altered, by exactly who and for the benefit of whom, there doesn't appear to be any sort of agreement. And stupidity and short-sighted self interest may well swamp Spacecraft Earth before the Horsemen can saddle up. Meanwhile, the Spectral Riders are being eagerly wooed by the CIA and similar agencies in other countries... wise, far-sighted men who will no doubt use their awesome knowledge of Famine, Plague, War and Death for the good of all mankind.

"Put that joker Death on the line. Take care of Mao and that gang of cut-throats."

Actually, Western society is so constructed as to concentrate the greatest power in the worst possible hands. See, practically anything has military applications. So really the most important knowledge is now Top Secret classified. Famine, seemingly the most fortuitous of the quartet, is transcending the caprices of weather, deforestation and overpopulation and getting a new look. We can in fact extend the area of Famine to include the lack of any substance or condition essential to the support of life. We can in fact create needs quite as overwhelming or compulsive as the need for food and water. Drug addiction is of course an example of a biologic need artificially produced by the administration of drugs. And no doubt drugs much more habit-forming than heroin could be produced in the laboratory by jiggering and tinkering with the habit-forming molecules.

We now have substances which could be introduced into the water supply, or even in gaseous form into the enemy air, that have no effect unless it is withdrawn. And then a battery of crippling symptoms would develop, reducing the enemy to complete impotence. There are certain metabolic illnesses in which the subject is unable to absorb certain essential vitamins and minerals no matter how much he ingests. In fact, it is not far-fetched to conceive of inducing metabolic changes that would make the absorption of any nutriments impossible: no matter how much he eats the person would die of starvation.

The alliance between War and Plague was cemented with the first germ experiments and in this area there have been a number of interesting developments. Despite a lot of talk about discontinuing such experiments and closing down the

biologic and chemical warfare centres, Fort Dietrich, in Maryland is now dedicated to cancer research. And cancer research, incidentally, overlaps the more sophisticated areas of biologic weaponry.

As early as World War II, England had a Doomsday Bug which was a mutated virus produced by exposing such viruses as hepatitis and rabies to radiation. Now we know that a number of experiments have been carried out on exposing fruit flies to radiation. These experiments conclusively showed that there were no favorable mutations resulting from exposure to radiation... certainly not on fruit flies. Now one wonders why they didn't carry these experiments further and expose microscopic and sub-microscopic life to radiation. The answer is, undoubtedly they did and are doing just that but it's Top Secret. It is difficult to believe that such a promising line of research was abandoned and disturbing to speculate where that research is at the present time...

And there is an item from the London *Times*, 18th April, 1971:

"New Cancer Virus Made By Accident... A completely new virus, probably capable of producing cancer in humans, has been made by accident in an American laboratory... Fears expressed by cautious scientists that such medical research could inadvertently produce new human diseases instead of curing existing ones. The new agent was discovered by Dr. Abramson of the National Cancer Institute, near Washington. Under special conditions, the mouse virus could be persuaded to infect human cancer cells in a test tube, though the process was extremely inefficient. Dr. Abramson now reports, in *Nature*, that the mouse virus has changed its nature. It has become highly infective to human cells and completely non-infective to mouse cells."

In other words, we have a permanent change. A major genetic change has occurred in the virus and what amounts to a completely new virus has emerged. The virus has picked up a human gene and incorporated it, giving it the ability to multiply readily in human cells. Sir Macfarlane Burnet, in *The Lancet*, sounds a word of warning, of the "almost unimaginable catastrophe of a virgin soil epidemic involving all the populous regions of the world". The age-old dream of a selective pestilence is now within the reach of modern technology.

This is also from the London *Times*, about 1970:

"Ethnic weapons that wipe out one race and leave another unharmed could soon be developed, according to leading geneticist. Carl Larsen (a Norwegian) said recently: 'Ethnic weapons would employ differences in human genetic configurations to make genetic variations which would make genocide a particularly attractive form of war.' (I'm quoting, this is not my opinion.) Writing in the U.S. Army *Military Review*, Larsen argues that enzyme levels can vary according to race; the absence of certain enzymes can cause death. Enzyme deficiency could be exploited by chemical warfare."

It would probably be possible to develop a chemical which will act as an enzyme inhibitor. Say you find an enzyme inhibitor to which 90% of Europeans would be vulnerable, which affects only 10% of Africans. Since the inhibitor could tell friend from foe, no matter how intermingled, it is the superselective military weapon. It is what all military thinkers dream of. Larsen admitted that "more genetic research was needed before ethnic weapons became a practical reality," but again this was ten years ago.

Selection of course could be carried much further, even to the point of an illness that affects only people with certain traits of character, since character is an expression of an overall metabolic configuration. That is, there is a rage metabolism, a metabolism associated with covert hostility, and so on. So it would be possible to carry your selective pestilence much further.

Well, it seems that War, Plague and Famine are merging. What about the Last Horseman... Death, a pale horse, a pale rider? Can Death maintain a separation from the means by which Death is produced? Can he stay separate from the horseman and get out there and do the job, or is the union between Death and the instrument of Death about to be consummated? There are those who think so.

Herald-Tribune, June 8, 1970: "The Synthetic Gene Revolution." This is the first synthetic gene by Dr. Hare Khorana, at the University of Wisconsin. And there's been a lot of research since. They've created an artificial gene; news that ranks with the splitting of the atom as a milestone in our control or lack of control of the physical universe.

"It is the beginning of the end" - this was the reaction to the news from the science attache at one of Washington's major embassies. "If you can make genes you can eventually make new viruses for which there is no cure. Any little country with good biochemists could make such biological weapons. It would only take a small laboratory." If it can be done, someone will do it. To be sure, it's almost science fiction but science fiction has a bad habit of coming true. In fact, it frequently surpasses the fact. The facts of science are now surpassing science fiction, and we have a lot of books that would be classified as scientific fact: a novel like **The Terminal Man**, there's nothing in there that isn't within the reach of modern technology.

Of course, the Gentlemen Riders have no meaning outside of human context, they are in fact human inventions. So let us examine the human context.

The first thing that would impress a visitor from outer space would be the tremendous, inexplicable gap between potential and performance. It's amazing when you consider what the human organism could do in terms of its potential, and what it

actually does. No species that isn't fundamentally flawed could be so stupid this consistently. Let us consider the human organism as an artifact. Comparative evolution will show us what is wrong with it and how far it has to go.

You have the first airplanes... now, take one look at that artifact and you see that everything is wrong with it. They were incredibly dangerous, they had a very short range, and to be anything more than a curiosity it has a very long way to go... So now up here's your present planes and rockets and so forth... and all the steps in between... well now take an artifact - see, we can see that this artifact is in a rudimentary stage and that it has a very long way to go, we could see that back then. We don't have to see all this development to know that if this is going to do anything at all it's got to make a number of forward steps. Now take an artifact like the bow I'll put it up here - what's wrong with it? Very little. It's gone about as far as you can go on the principle of a projectile propelled by an elastic spring - you can use rubber bands, it's the same principle. The artifact is subject to a basic limitation: the stronger the bow, the more energy required to draw it. It can't go very much further. Now of course modern bows have appeared and there are a lot of hobbyists who hunt with bows. They kill bears and I think even lions, and undoubtedly these bows, modern bows, are much better than anything that people had five hundred years ago. But they're not all that much better. They're not basically different or basically much better.

Now take another artifact down here, the flintlock rifle or pistol. Take one look at that artifact and ask yourself what is wrong with it. Just about everything. They didn't even have the firepower of the bow; they took much longer to load and prepare them. They misfired very frequently; rain and wind would render the weapon quite useless - if rain gets in the pan it won't ignite. Black powder is dangerous, very much more volatile than smokeless powder. It's very dangerous to transport and use, static electricity will set it off; if you shuffled across the floor and picked up a canister of black powder that would be a very dangerous thing to do - it'd blowup... So it has a very long way to go.

Up here to modern automatic weapons, another factor comes in and that's the factor of money. Money and profit becomes very important because as soon as an article goes into mass production they don't want to know about a better article. And they particularly don't want to know about one that is basically different, because the most expensive thing a manufacturer can do is to junk his dies. He's got his dies set up to manufacture the very inefficient internal combustion engine, he doesn't want to shift to a turbine. So he will suppress inventions. Very useful inventions are now suppressed...

And we can also see living creatures as artifacts. When you take an artifact like the weasel, well what's wrong with it? Well, not much. It's limited, but in terms of its structure and goals it functions well enough; it has reached the limit of its development. And you look at the human artifact: what's wrong with it? Just about everything, it's right down here with the flintlock... It's got a long way to go.

First the question as to what distinguishes the human animal from other animals is one of the very frequent questions, and Korzybski, who started the idea of general semantics, the meaning of meaning, had I think the best answer: it's language. But language must not be confused with communication. You see animals communicate and they talk, but they don't write. They can't make knowledge available to members of their species outside their communication range. Everything they learn they have to learn during their lifetime. Now a wise old rat will know a great deal about poisons and traps, but he can't write a treatise which other rats could read, he can't pass that knowledge on to rats over here or to future generations of rats... very fortunate... for us. Now to get back to the human artifact; one of the things that distinguishes man is language, that animals talk but they don't write. They've got no way of writing something down so that it can be available through space and time. Actually, we know that some people don't write, but the whole of human language they can pass on orally, which animals cannot. Language is essentially a symbolic system where something represents something else. You can't draw a map, it doesn't mean anything to an animal; you can't get an animal to read a map, but illiterate, so-called illiterate people can.

Well, let's consider the human artifact and what is wrong with it. Consider a creature that can live on the seacoast, watching ships come in, day after day, year after year, and still believe the Earth is flat because the Church says so. They knew the Earth was round. They *believed* it was flat. Or an artifact that can use cannonballs for 500 years before the idea of a cannonball that explodes on contact blossoms in this barren soil. I could go on and on.

So why has the human artifact stayed back with the flintlock? Well, I'm advancing a theory that we were not biologically designed to remain in our present stage any more than a tadpole is designed to remain a tadpole. The human is in a state of neotony - that's a biologic word we've already heard from Dr. Lotsch used to describe an organism fixated at what would normally be a larval or transitional phase. Now ordinarily a salamander starts his life cycle in the water with gills; later the gills atrophy and drop off and the animal develops lungs and comes up to land: then they go back and spend the rest of their lives in the water and they have to come up to breathe. Just why they do that I don't know.

However, there are certain salamanders who never lose their gills and they never leave the water. Now they'd be considered in a state of neotony. The Xolotl salamander, found in Mexico, is an example. And scientists, moved by the plight of this beautiful creature gave him an injection of hormones, whereupon he shed his gills and left the water after ages of neotony. Whether this was any advantage to him is another question. (Laughter). It does seem advantageous if you're gonna spend much of your time in the water to have gills, but evolution is a one-way street. Once you lose your gills you can never get them back. I think it's a little too much to hope we could be jolted out of neotony by a single injection. But by whatever means the change takes place, if it does take place, the change will be irreversible. The Xolotl,

of course, once he sheds his gills can never reclaim them. This law of evolution... I don't know any reason for it but it seems to be a law - the whales must have been on land at one time: they lost their gills and they never got them back.

Now when we consider these evolutionary steps, one has a feeling that the creature is tricked in a way into making them. Now here is a fish that has survived droughts because he has developed feet or rudimentary lungs. As far as the fish is concerned, the feet are simply a means of getting from one water source to another or of going down into the mud and waiting out the drought. But once he leaves his gills behind he has made an involuntary step - I won't say forward exactly - but a step. Looking for water he has found air. And perhaps a forward step for the human race will be made in the same way.

The astronaut is not looking for Space, he's looking for more Time to do exactly the same things. He's equating Space with Time and the Space program is simply an attempt to transport all our insoluble problems, our impasses, and take them somewhere else where exactly the same thing is bound to occur. However like the walking fish, looking for more Time he may find space instead, and then find that there is no way back. Now such an evolutionary step would involve changes literally inconceivable from our present point of view.

Many of these ideas I have incorporated into a novel on which I'm now working. I've had several titles for this novel, and the title that I have more or less decided on in the course of this conference is **Place of Dead Roads - Planet Earth**. I'll read a few pages here...

"As a prisoner serving a life sentence can think only of escape, so Kim (this is my hero) took it for granted that the only purpose of his life was Space travel. He thought of this as not so much a change of a locality but as a change of dimension, the basic change of a being with all its surroundings like the switch from water to land. But you see, there had to be the air-breathing potential first. That's where you start. And what is it that you must alter in order to make these changes.

"The first step towards Space exploration was to examine the human artifact with biologic alterations in mind that would render our human artifact more suitable for Space conditions and Space travel. Now we are like water creatures looking up from here at the earth and the air and wondering how we can survive in that alien medium. Fish didn't have the capacity to do that: we do. The water we live in is Time. That alien medium we glimpse beyond Time is Space. And that is where we are going... Kim read all the science fiction books and stories he could find and he was stunned to find the assumption, the basic assumption, that there is no real change involved in Space travel, same dreary people playing out the same tired old roles. Take that dead act into Space. Now here they are light years from Planet Earth watching cricket and baseball on a vision screen.... can you imagine taking their stupid pastimes light years into Space. It's like the fish said, 'Well, I'm gonna just shove this aquarium up onto the land and there I've got everything I need...' (laughter)... you need entirely too much.

"Well, to begin with there is the question, of weight, the human organism weighs about 170 pounds and that is a decided disadvantage. But also this breathing- eating-excreting-dreaming human organism must have its entire environment, its awkward life process encapsulated and transported with it... into Space. And one wonders - Kim goes into his academic act, letting his bifocals slip down onto his nose like a professor launching into a well-worn joke - one wonders, gentlemen, if this crew doesn't perhaps have a pet elephant essential to its welfare that it's gonna take along..."

Now, regarding this question of weight, we have a model at hand of a much lighter body, in fact a body which is virtually weightless and I'm referring to the astral dream body, which some scientists don't believe in. But this model gives us a clue to the changes we must undergo. When I say must, I am speaking not in moral, but in biologic terms. And the dream also gives us insight into Space conditions. One of the more interesting facts of dream research, has established that dreaming is a biologic necessity. You see, they can tell now when an animal or a person is dreaming by the brainwaves, the REM waves, and research has established that if dream sleep is cut off every time they see sleep brainwaves they wake the animal up - no matter how much dreamless sleep he is allowed, irritability, restlessness, hallucinations and eventually coma, convulsions and death would result. He'd show all the symptoms of sleeplessness no matter how much sleep he was allowed... I don't know what Freud would have made of that... Kim saw dreams as a vital link to his biologic and spiritual destiny in Space, and deprived of this airline he would die. The way to kill a man or a nation is to cut off their dreams in the way that whites took care of the Indians, they cut off their dreams, their magic, and they tended to die out.

So I'm starting here with a basic assumption which of course many of you will, cannot accept: that our destiny - again I'm talking about our biologic destiny - is in Space, and that our failure to achieve this is the basic flaw in the human artifact. That's why it's back here, down here with the flintlock instead of being somewhere up here.