

The Biotech Century

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Does human nature have an objective nature, this is the fundamental question?

Genetic engineering is a defining aspect of our near term future.

The 19th century was the age of Physics, and the 20th the age of Chemistry, the 21st century will be the age of the gene. We are learning about genes. We are learning about how genes turn on and off, how they express themselves, how they mutate, how they impact with the larger environment. We are learning the way the blueprints of evolution, how biology operates on this planet.

The question is, and the great debates will not be about, not the science, which is invaluable, the issue is what kind of technology will we use to apply our knowledge of the new science?

This is not just a shift in terms of just some new food crops, medical therapies and drugs; we are making a wholesale transition out of the industrial revolution into the Biotech century.

Futurists have misunderstood and mis-defined the age of information as being central in respect of considering it as the defining term. Calling the 21st century the information age is a bit like calling the industrial revolution the printpress age. The computer is not a primary resource, it's a language, it's a form of communication, and it's a management tool that has a direct analogy with the print press. The print press was the essential form of communication to organize a fastpaced culture based on coal and steam power. Similarly, what is actually happening in the global economy is this; the computer is just a prelude to a much more profound revolution in commerce. Over the last forty years computer technologies and genetic technologies have been operating on parallel tracks. The information sciences and the life sciences are fusing together for the first time in the area of Bioinformatics and (bio) genomics. These two technology revolutions are creating a single revolution. The computer is the language, the communication form tool to decipher, download and organize genes. Genes are the rawresources of the coming century just like metals, fossil fuels, and minerals, were the raw resources of the industrial century. So the real shift going on in the global economy is that we are moving from fossil fuels, metals and minerals, the industrial revolution, genetic commercethe raw resources of the Biotech century.

The lifescience industries are beginning to maneuver for control over genetic commerce.

The mergers and acquisitions in the lifescience industries dwarf, many times, the acquisitions going on in the telecommunications field.

The real issue here is the genes, whoever owns the genes, owns the next century.

The patent office has violated its own mandate, the mandate that says that you cannot patent discoveries of nature. If a chemist were to isolate oxygen, or helium, or gold, they could get a patent on the process they used, but they could not get a patent the isolated product because oxygen, helium and gold are products of nature. Genes are never invented de nova, they are products of nature, they are Gods creation.

The Human Genome project will, within the next 8 years, identify and catalog all sixtythousand genes that make up the blueprint of humanlife. Whoever owns those genes, will be the intellectual property of a life science company giving them ownership over the blueprints of the human race. This is unprecedented human commercial power to dictate the terms over the course of further evolution as a species depends.

The lifescience companies are also scouring the planet looking for rare microorganisms that have rare traits and are then seeking patents on them.

[look up the 13th amendment constitutional ban on slavery part]

. . . a kind of out of control government policy, where the intrinsic value of human life in Gods creation has been reduced purely to utility, that can then be enclosed in commercial hands giving lifescience companies a lock on the blueprints of evolution itself.

There seems to be this new social biology developing of science, or nature over nurture that is accompanying, and legitimizing, this new genetic commerce and redefining our sociology that says that you are your genes. Therefore, if you want to change society, forget about reforming the institutions and stewarding the environment, and trying to remediate the organizations. Instead, you'd better change the genes, because their the most important factor, which is very dangerous thinking.

Eugenics enters the picture at this point. When we think if eugenics we generally think of Nazi German, the ultimate attempt to exercise control over the human race by government fiat which ended its movement in the holocaust. Is there a new eugenics, yes! This new technology is generating a new eugenics. Does this new eugenics have any resemblance to Nazi Germany, no?

There's no evil cabal, there's no conspiracy to usher us into a Brave New World, quite the contrary. The new eugenics is commercial, market driven, banal, and the lifesciences are saying to consumers, don't you want to have healthy babies? Nonetheless, the commercial eugenics could have the same consequences, in the long run, as the social eugenics, and end up with the Brave New World Aldolphus Huxley warned us about all the same, although the enemy may be us in the market place expressing our desires.

A compelling case can be made for this which is the reason why the new eugenics can be so seductive; it's the ultimate Faustian bargain. Parents will be able to go and take a test for thousands of genes, all of the genes and genetic predisposition. You will have a crystal ball that will allow you to gaze into your baby's future before they are even conceived. If you knew that you were going to pass on leukemia, wouldn't you want to eliminate that from the sperm, or cystic fibrosis, or sickle cell anemia, or Huntington's chorea? But, then again, where would you ever say no? If your child would be legally blind, or inherit the obesity gene, or be extreme short stature from growth deficiency, or the gene for manic depression, or manic dyslexia, wouldn't you want to make any of those changes in order to have the most normal, healthy, emotionally secure baby at birth that you could possibly have?

However, once we begin to see our children as the ultimate shopping experience, and become the architects playing God on all of our offspring, this is the greatest change of the parent/child relationships in history. Who decides what a perfect baby should look like? Should consumers have that choice in the market place? Then again, what happens to the baby who is not genetically engineered, that may have some disability, or deviate from some culturally accepted norm? Will we see that little girl, or boy, as a mistake, as an error that should have been eliminated?

The Biotech Century promises a cornucopia of genetically engineered plants and animals to feed a hungry world; genetically derived sources of energy and fiber to propel commerce and build a "renewable" society; wonder drugs and genetic therapies to produce healthier babies, eliminate human suffering, and extend the human life span.Â What are the risks we take in attempting to design more "perfect" human beings? Rifkin explores these and many other critical issues in this ground-breaking book about the coming era.